

Impact of the COVID-19 pandemic on the quality of customer service in the local government units

**Agnieszka WÓJCIK-MAZUR¹, Justyna ŁUKOMSKA-SZAREK²,
Anna MARTYNKO³, Krzysztof PIONTEK⁴**

Abstract: Maintaining an adequate level of services becomes a particularly difficult challenge in the current conditions of the COVID-19 pandemic, which greatly complicates the organization and implementation of tasks assigned to public entities. Therefore, it was deemed important to determine the impact of the COVID-19 pandemic, considered in the context of global risk, on the quality of customer service in the local government units. In the theoretical part, the investigations presented in this study contain a discussion of public service provision by local government units. The publication includes a study of the concepts of quality and satisfaction. The article also draws attention to the aspect of risk as an indispensable element of business entities in relation to the global risk caused by the SARS-CoV-2 virus. The empirical part presents the results of surveys conducted using the Servqual method and the Kruskal-Wallis test. In conclusion, providing high-quality services is a challenge for many local government units. The COVID-19 pandemic has negatively affected the dimensions of reliability and trust that make up the quality of customer service in local government units. This is evidenced by the results which show the deterioration of the quality of customer service during the pandemic. The current situation exacerbates the negative trend resulting from the gap between the perception of the services provided and the actual requirements of the respondents.

Keywords Wallis test, local government, public management, quality of customer service, Servqual method.

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¹ Associate Professor PhD, Eng. Faculty of Management, Czestochowa University of Technology, Al. Armii Krajowej 19 B, 42-201 Częstochowa, Poland, e-mail: agnieszka.wojcik-mazur@wz.pcz.pl. ORCID: 0000-0002-9275-5624

² PhD., Faculty of Management, Czestochowa University of Technology, Al. Armii Krajowej 19 B, 42-201 Częstochowa, Poland, e-mail: j.lukomska-szarek@pcz.pl. ORCID: 0000-0001-5521-9294

³ MA, Faculty of Management, Czestochowa University of Technology, Al. Armii Krajowej 19 B, 42-201 Częstochowa, Poland, e-mail: anna.martynko@pcz.pl. ORCID: 0000-0002-9340-9686

⁴ Associate Professor PhD, Faculty of Management, IT and Finance, Wrocław University of Economics, ul. Komandorska 118/120, 53-134 Wrocław, Poland, e-mail: krzysztof.piontek@ue.wroc.pl. ORCID:0000-0001-9197-561X

Introduction

Every human activity has risks that can be determined with varying degrees of predictability. Its intensity and variability are also different (Wielgórka, 2016). Dynamic globalization processes and political transformation are the main determinants influencing the standards of functioning in the economy and, consequently, the level of risk (Hussain et al., 2021). The intensity of transformations in the socioeconomic sphere also leads to changes in the activity of the public sector units (Dankiewicz et al., 2020). In relation to the public sector, there is a belief that it operates in a stable and predictable environment. And the risks occurring in the course of its activities reach a low level. However, the aforementioned categorization is largely blurred over time. Therefore, risks in the private sector also affect public entities (Grabowska & Otola, 2015). A special case of global risk materialization is the COVID-19 pandemic. Its extremely deep negative socio-economic impact on the functioning of all entities and organizations has forced dynamic changes in the conduct of business, including the public and municipal services sector. An essential element of this transformation was the digital acceleration that occurred during the pandemic (Agostino et al., 2021; He et al., 2021; OECD, 2020) as cited in: (Barrutia & Echebarria, 2021). A report commissioned by the UK Parliament on the quality of public services highlighted that local public service providers during the COVID-19 pandemic implemented remarkable innovations to cope with the constraints of the pandemic and decision-making was substantially accelerated. Furthermore, these changes were assessed as highly beneficial by public service recipients. These preliminary studies may therefore suggest that, in the opinion of the recipients, the quality of public services provided during the pandemic can be considered satisfactory (Androniceanu & Marton, 2021; Androniceanu & Tvaronavičienė, 2020). There have been a number of studies in the literature focused on the quality of public services. However, in many areas, their scope is not yet focused on the COVID-19 pandemic period. Therefore, the authors found it useful to fill this gap by assessing the quality of public services provided by the local government sector both in the pre-pandemic period and during the pandemic. Survey questions were addressed to the same group of respondents so that the potential difference in service quality assessment (before and during the pandemic) would be evaluated in the context of the COVID-19 pandemic. This publication has been developed by using the SERVQUAL method that defines the quality of customer service, that is, its feelings from the perspective of five areas that create: reliability, confidence, willingness to cooperate, empathy and specificity. Moreover, due to the non-random sample of variables that do not have a normal distribution, the Kruskal-Wallis test was used to verify the hypotheses.

1. Literature review

The transformation of the public sector has changed the perception of local government units, which are characterized as service-providing entities, and the community is viewed as clients (Lapuenta & Walle, 2020). The use of rules and assumptions of strategic management promotes the creation of market circumstances, including competition in the provision of public services (Łukomska-Szarek, 2010). Local government units as entities performing activities in the domains of information, consultancy, and integration are usually characterized as public trust institutions. However, with the current conditions of the economy, the scope of activities of local government units focuses above all on providing services to the local community, which are rational from the standpoint of both general public expectations and legal regulations. The reform of the public sector through the implementation of business solutions has contributed to customer focus and an emphasis on issues such as efficiency or quality indicative of organizational performance (Gutiérrez Rodríguez et al., 2009). As argued by Skelcher, the classical way of providing services runs the risk of overlooking client expectations (Skelcher, 1992). Unlike tangible goods, services do not have any specifications. Therefore, all shortcomings and deficiencies during its provision are noticed immediately. Services, due to the interactions that take place during providing these services, are inextricably linked to the client. Therefore, service quality can be defined as the relationship between the satisfaction resulting from the service received and the level at which the service is characterized. An integral part of quality is the client, as his or her attitudes express the subjective degree of satisfaction with their needs. Therefore, it is the client who is the beneficiary of a particular service and decides whether it meets their needs. Hence, in addition to client satisfaction, a high level of service provision should also be reflected in the improved performance of the entity (James, 2011). The quality of the relationships between the client and the service provider is determined by the level of satisfaction (Olsen, 2007). The services provided by the gmina (gminas are principal units of territorial division in Poland) are multi-dimensional. They consist of activities regulated by law, among which administrative implementation is the most important. In accordance with the principle of decentralization, the local government unit provides services to the local community within the limits imposed by legal standards that regulate e.g., financing issues or the scope of the tasks (Horodecka & Odlanicka-Poczobutt, 2019). Due to citizens' perception of the services, activities undertaken by local government units, regardless of scale, should be characterized by high standards. Therefore, local governments and their services play an important role in creating public value for their citizens. Assessment of satisfaction and service quality is introduced in many areas concerning government and tax administration, medical care, education, and local government and therefore, the managerial approach is to bring the measurement of the quality of public services offered by government and local government units in sharp focus (Chen et al., 2021).

Historically, service quality has been an area of interest for researchers primarily concerned with management in the commercial sector and has focused on sectors such as automotive, hotel and tourism sector, health, telecommunications, and banking, for which customer service quality is a key factor in surviving in the marketplace (Shabbir & Malik, 2016). According to the literature, the quality of services is a subjective issue due to the differences in the perception of a given well by the recipients of services. As emphasized by various authors, the term service quality may be defined differently depending on the industry and the type of services provided (Pan & Ha, 2021). It is defined as the level of meeting the requirements of the product or service. Therefore, as stated by some authors in this field, it is a resultant reaction to the received well that contributes to customer satisfaction (Mesjasz-Lech, 2015). Some authors (Tsoukatos & Mastrojianni 2010) are convinced that the quality of services is the degree of disproportion between the desire or expectation of a given service and its actual realization. Therefore, as a rule, service quality is defined as the discrepancy between the expectations, desires of the consumer, and the feelings about the service received (Parasuraman et al., 1988). As highlighted by Pakurár et al. service quality is the overall opinion of the client, leveling the degree of satisfaction of his or her expectations, thus contributing to his or her satisfaction with the obtained good (Pakurár et al., 2019). The literature on this subject emphasizes the relationship between service quality and client satisfaction or competitive advantage, which is particularly evident in the commercial sector in the service sector, whose marketing strategy is usually customer-oriented. Satisfaction is defined as positive feelings towards the service provided. Client satisfaction is generally considered a measure that assesses the value of a specific good. However, researchers do not agree on the definition of the client satisfaction index due to the different expectations placed on the goods provided (Berezina et al., 2012). Quality is generally linked to satisfying the customer needs of the service provider as a result of the services received, whether of a tangible or intangible nature. However, there are many definitions of quality. With the marketing approach, quality denotes the level of consumer satisfaction (Chumpitaz & Paparoidamis 2004). According to Ed. Deming, quality means the fulfillment of explicit and implicit customer requirements (Alauddin & Yamada 2019). Other authors define quality as the level of customer satisfaction resulting from the fulfillment of their claims and expectations (Angelova 2011). Satisfaction of society determined by the level of service quality, regardless of the form of management manifested in local government units, affects the desired outcome of the entire entity (Chatterjee & Suy, 2019). A wide variety of factors determine the final shape of services. The final effect is influenced by the service provider's experience, competence, skills, and the client's requirements, inquisitiveness, or knowledge. The literature defines satisfaction as a value judgment, a positive reaction, or a level of satisfaction (Oliver & Swan, 1989). According to M. J. Bitner and A. R. Hubbert, it is necessary to distinguish between satisfaction resulting from the relationship with the client, coming from the direct contact with the service provider expressed in the form of aversion or a sense of community, and the

derivative is a component of both negative and positive impressions, the source of which is the service received. Satisfaction is defined as an emotional evaluation, conditioned by a number of factors, which include, among others, the product offered or the image of the service provider (Bitner & Hubbert 1994)

Accordingly, satisfaction can be defined as the state following the consumption of a service provided. The perception of the services received depends on the level of personalization. Hence, the more the service delivery process is directed at individuals, the more strongly the client determines the quality of the service through their own experience, expectations, emotional sensations, and mood (Subiyakto & Kot, 2020).

Academics emphasize that the multidimensionality of services results in specific dimensions for each type of service sector, making it very difficult to develop a single model for measuring service quality (Brady & Cronin, 2001). This multidimensionality creates problems in measuring services because the dimensions may vary depending on the type of service sector (Ramezani Ghotbabadi et al., 2015).

Moura and Sintra emphasized that the problems of measuring service quality in local governments begin with customer identification. The conflicts in service relations arise from the conflicting needs and expectations of individual participants involved in services. In this view, conflicting roles arise, for example, from the different requirements of taxpayers (the ultimate funders) and users (the direct beneficiaries of the services provided) (Moura & Sintra, 2008).

Moura and Sintra emphasized that a model widely used in service quality measurement research is the proposal of Parasuraman, Berry and Zeithalm (1985). In this view, it is emphasized that customer satisfaction is treated as a comparison between customer expectations and actual service performance. (Zeithalm et al., 1988; followed by (Moura & Sintra 2008). This gap makes it possible to measure customer satisfaction while its value can be determined by a series of other (partial) gaps: customer expectation-management perception gap (lack of customer focus), service quality specification gap, service delivery gap, and external communication gap (Moura & Sintra 2008).

Because of its universal nature, the SERVQUAL method provides a specific measure of the perception of the good provided. It is considered to be the most common and universal tool for measuring quality (Kassim & Abdullah). The SERVQUAL model has been used in several studies in the commercial (Midor & Kucera, 2017) and public sectors (Wisniewski, 1996). Studies in the commercial and public sectors based on the SERVQUAL model or its modifications have evaluated the quality of a variety of services provided by uniformed services (Donnelly et al., 2006) citizen service centers (Ramseook-Munhurrun et al. 2010), health care (Butt & Run 2010), nursing (Ko & Chou, 2020), transportation (Chou et al. 2011), education services (Lupo, 2013) including e-learning (Godwin et al. 2011) or even the event sector (Menezes et al., 2020). Although the measurement of service quality in the public sector is often based on the SERVQUAL model, it is important to note that there are studies that indicate some shortcomings of the SERVQUAL method in specific

dimensions. For example, a survey on the quality of library services showed deficiencies in the areas of reliability and relevance (Ahmed & Hossain, 2009). Furthermore, in terms of responsiveness and assurance, the way the service was delivered met readers' expectations. Some researchers have questioned the validity of the SERVQUAL model claiming that the method containing a general scheme cannot be not fully adapted to each sector, suggesting at the same time that more adequate tools for measuring service quality are offered by the extensions of the classic SERVQUAL model. In particular, the SERVPERF model can be indicated here (Lupo, 2013) followed by a number of modifications tailored to the specifics of individual service sectors: Retail Service Quality Scale (RSQS) (Maghsoodi et al., 2019) fuzzy weighted SERVQUAL method (Chou et al., 2011), E-S-QUAL for assessing electronic service quality (Parasuraman et al., 2005), or SNSQUAL - social networking site quality model, (Phillips et al. 2016), FESTPERF (service quality and special events) or ARTQUAL model for service quality assessment in aesthetic environments (Maghsoodi et al., 2019) or HEALTHQUAL, a model of healthcare service quality measurement items (Lee, 2016). The SERVQUAL method is used relatively often in research on assessing the quality of services. Zahari and Maziah (2008) used FM-SERVQUAL- new version of SERVQUAL which is constructed based on the Integrated Facility Management Framework which covers the management of human capital, premises, technology and working process (Zahari et al., 2008). Donnelly (1995) also measured service quality in Malaysian local government using the SERVQUAL approach, in which he indicated that service providers tend to overestimate service users' expectations (Donnelly, 1995). Mbassi et al. (2019) based on survey research (local municipalities users in Cameroon) evaluated the relationship between local municipalities' public service quality and citizen-customer satisfaction based on the revised service quality model SERVQUAL (Mbassi et al, 2019; Butt & Run, 2010).

Some authors examined the quality of municipal services provided by local government in southern Thailand and identify the most important service quality dimensions that determine citizen satisfaction (Mokhlis et al., 2011).

Other authors have come to similar conclusions. In their analysis of citizen satisfaction with public services in the South African municipality of Sedibeng, these researchers concluded that there is a very important relationship between the dimensions of service quality and citizen satisfaction (Akinboade et al., 2012).

Rodriguez et al. (2009) analysed the link between quality dimensions and satisfaction in respect of improving the relationship between small public local administrations and citizens (Rodriguez et al, 2009). Also noteworthy is the research done by those who explored the intangible factors (place attachment, quality of life, and relationship between the municipality and citizens) that influence citizens' satisfaction with municipality services. The study was based on a conceptual framework using Structural Equation Modeling (SEM). This research indicated that customer satisfaction is determined by subjective and intangible factors. This is extremely important because as the authors emphasize, the nature of public services is consistent, but customers may value the same type of service differently, which

makes the knowledge of subjective and intangible factors of key importance in assessing customer satisfaction (Guterman & Billig, 2020).

It is also important to highlight the research carried out from the point of view of customer segmentation (distinguished by gender) determining its impact on the evaluation of the quality of municipal services. Authors of such studies have demonstrated the existence of different customer segments and indicated that this should be taken into account during potential activities focused on quality improvement (Kwok et al. 2016).

An interesting study on the quality of local government services, based on an alternative quality model that identifies the main characteristics of public services, including process quality, outcome quality, project quality, and relationship quality; was carried out by Rhee and Rha. The research conducted showed that the key attributes of customer satisfaction with public service quality are determined by the type of public sector customer (Kassim & Abdullah, 2010).

The research conducted by Bülent Bostancı, Nuri Erdem is also worth noting. In this study, citizen satisfaction with municipality services was measured using a questionnaire on a household level. The authors created a raster map in the ArcGIS geostatistics module by applying IDW interpolation on the resulting values. According to this, the satisfaction of citizens regarding the quality of public services was analyzed based on location (Bostancı & Erdem, 2019).

An interesting study that aimed to identify the relationships between customer satisfaction with municipal services and the level of decentralization of the local government sector was conducted. The results obtained in Korea did not confirm the positive relationship between customer satisfaction and the level of decentralization, even though decentralization leads to increased efficiency of local governments. The authors indicated that these results cannot be generalized to other countries because the identification of these relationships can only occur in Korea, which is a country with a strong democracy and high respect for the central government (Shin & Jhee 2021).

In empirical research, a new measurement proposal was also presented by Titu and Bucur. These authors used a synthetic service quality index for the management of local public administrations. They believe that it can be applied in the assessment of municipal objectives, which include the quality of public service and improvement in efficiency (Titu & Bucur, 2016).

In Poland, research on service quality in local government administration was conducted, among others, by Wolniak and Zasadzień-Skotnicka (2009) in the Silesian Voivodeship, and Haffer in the Toruń Starosty (2011). The research carried out in the Silesian Voivodeship showed that local governments struggle with shortcomings that are most noticeable in the relationship between the service provider and the service recipient. Furthermore, the analysis of the quality of services in the Toruń Starosty revealed an insufficient level of consumer satisfaction, which, as the author of the study emphasizes, varies depending on the organizational department of the entity (Wolniak et al., 2009; Haffner, 2011). The review of the preliminary studies on the impact of COVID-19 on service quality focused on the

evaluation of public services in health care (Muangmee et al., 2021), restaurant hospitality (Hu et al., 2021), and public transport (Thanatorn Chuenyindee et al., 2022). To our knowledge, the satisfaction of customers using services provided by local government units during the pandemic has not been studied to a greater extent so far. However, one can mention, for example, the research Kuzior, A. et al, who discuss the impact of the COVID-19 pandemic on electronic public services (Kuzior et al., 2021) and Milincikowa and Stofkova on the evaluation of the digitization of public administration processes by comparing electronic services provided by public administration to citizens in companies before and after the COVID-19 pandemic in the Slovak Republic (Zilincikova & Stofkova, 2021).

In order to analyze the research problem of whether the COVID-19 pandemic affects the quality of customer service in local government units, the following hypotheses were put forward:

H₁: The pandemic caused by SARS-CoV-2 is contributing to significant differences in the quality of customer service in local government units.

H₂: The quality of customer service is determined by the level of competence possessed by local government employees.

H₃: The COVID-19 pandemic had a negative impact on the timeliness of public service delivery.

H₄: In local government units, material aspects do not determine the quality of service.

2. Materials and Methods

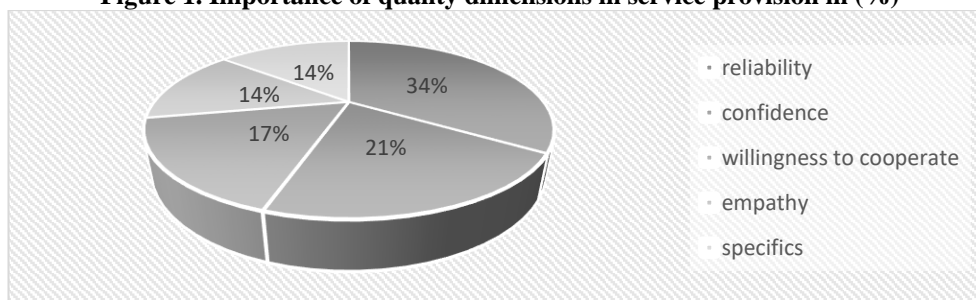
The aim of this paper was to determine the impact of the COVID-19 pandemic, considered in the context of risk, on the quality of customer service in the local government units. Furthermore, the investigations were aimed to determine the service gap, between the actual state of affairs, i.e. perception of clients and their expectations. The SERVQUAL method and the Kruskal-Wallis test were chosen as tools for assessing service quality in local government units. The universal nature of the SERVQUAL method allows it to be used to analyze the quality of customer service in both the private and public sectors, including local government units (Swain, 2019). The SERVQUAL method measures how clients feel about service quality from the perspective of five areas, i.e., certainty, reliability, empathy, responsiveness, and tangibility used to determine the gaps between perception and expectation. In the original form, the questionnaire consists of three main articulations. The questions relate to perceptions of service quality in the local government. The questionnaire contains statements depicting the ideal local government, contained on a seven-point scale, and questions designed to determine the level of importance of the spheres discussed for clients (Zeithaml et al., 1986). The aforementioned method, adapted to the needs of the study, consists of 4 essential questions. The first three questions, presented in the form of a matrix, aim to answer how the quality of customer service evolved before the COVID-19 pandemic, what is its level during the pandemic and what are the expectations of clients towards local

government units. The fourth question tests the level of relevance and importance of the spheres discussed in questions 1-3. Moreover, the questionnaire was supplemented with a respondent data section asking for information related to age, gender, occupational status, and education. A seven-point Likert-type scale ranging from “Strongly disagree” (1) to “Strongly agree” (7) was used to determine the differences between perceptions and feelings. The Kruskal-Wallis test was used to examine whether during the provision of public services there is a risk affecting the organization and performance of tasks assigned to local government units in the context of reliability and certainty. The test was conducted on a non-random sample. In order to collect the responses, the questionnaire was posted on <https://swpanel.pl/> and <https://www.surveio.com/pl/>. Eventually, 307 respondents participated in the survey. The majority of the respondents were female (182), while men constituted a group of 125 people. In terms of age, two age groups predominated among the respondents. The largest group was respondents aged 41 to 65 years, (35%) and another large proportion were those aged 26 to 40 years (34%). The mean age of the respondents was 40 years. In general, the respondents had higher and secondary education, which accounted for 43% and 34%, respectively. The lowest percentages were observed for people with primary education (2%) and junior secondary education (5%). Among the respondents, the largest group was professionally active people, i.e., 186 people, who answered the questions from the perspective of an individual 79%.

3. Results

The results of the research using the Servqual method presented in Figure 1 show that among all the specified areas, the most important, from the client’s point of view, are reliability (dependability) and professionalism (trust), with 34% and 21%, respectively. The collected results show that the most important areas of customer service quality in local government units indicated by the respondents are focused on reliability and trust. Respondents rated willingness to cooperate (17%) and empathy (15%) at a similar level. The area of least importance for local government clients is the area relating to tangibility perceived from the standpoint of equipment, furnishings, or facilities.

Figure 1. Importance of quality dimensions in service provision in (%)



The results presented in Table 1 show that clients of local government units assessed all the statements relating to the quality analyzed in the context of reliability and trust negatively. The respondents gave a more favorable opinion of the trust dimension than of reliability. A score of less than -1 indicates that the level of dissatisfaction among the respondents is very low. Clients make the least objections in terms of service provision (-0.56). The perception of employees representing local government units as polite people was also favorable (-0.89). In the area of trust, most comments were made for the expertise of employees, which was -0.98, meaning that the staff employed in local government units have insufficient knowledge. The respondents assessed the attitude of the employed staff with respect to trust-building at an almost identical level.

The results show that objections are raised in relation to the reliability of employees and in the context of caring for the affairs of the respondents. A similar tendency of evaluation as for the average total results can be observed in the reliability sphere because the difference between the two spheres does not exceed (-0.12).

From a reliability perspective, the issue of continuity of services was rated the worst. Therefore, it may be stated that the respondents have the greatest reservations with regard to services provided by local government units, which may not be delivered on time, however, the reservations raised in this respect do not exceed unity. Respondents rated the short time of service provision at the same level (-0.98), which is probably due to difficulties in the continuity of services, resulting in a similar rating given to the correct and meticulous delivery of services by staff (-0.98).

A similar level (-0.93) was found for the assessment of the staff competencies, which should be complemented, for example, through training.

However, it should be noted that clients have few reservations about reliability and trust, as evidenced by the collected responses. The respondents evaluated the spheres of reliability and trust more favorably than in the study by Wolniak and Skotnicka-Zasadzień.

The weighted mean values, ranging from -11.84 to -34.08, obtained from calculations based on the arithmetic mean differences, show a significant discrepancy in the data obtained.

The unweighted and weighted Servqual index shows that these quality areas are rated negatively by clients. The comparison of the two areas discussed shows that the clients of local government units rated reliability significantly lower, with the arithmetic weighted average for this area being (-33.10).

Clients raise the greatest objections in terms of continuity of benefits, for which the weighted arithmetic mean is (-34.08). The area of trust defined in this way is at an average level of -17.99. Of all the objections raised in the two areas discussed, the respondents rated the mode of service provision best (-11.84).

**Impact of the COVID-19 pandemic on the quality
of customer service in the local government units**

**Table 1. Reliability and trust dimensions assessed by clients of local government units
based on the author's research**

	Reliability			Weight	Weighted arithmetic difference
	Perception	Expectations	Difference		
Continuity of benefits	4	5.22	-1	34.08	-34.08
Flawless documentation	4	5.21	-0.97		-33.08
Competent staff	4	5.29	-0.93		-31.75
Short time of service provision	4	5.39	-0.98		-33.3
Reliability of employees	4	5.39	-0.98		-33.3
	Trust				
Expertise	4	5.43	-0.98	21.14	-20.79
The provision of services is safe	5	5.36	-0.56		-11.84
Staff inspires trust	4	5.43	-0.97		-20.45
Polite staff	5	5.43	-0.89		-18.86
		Unweighted arithmetic mean			Weighted arithmetic mean
Reliability		-0.97			-33.10
Trust		-0.85			-17.99

The Kruskal-Wallis test was used to verify the hypotheses. Based on the test, the relationship between the pandemic and customer service quality in local government units was found to be significant ($df = 2; p=0.001$).

Therefore, there are grounds to accept hypothesis (H_1) that there is a relationship between the pandemic and customer service quality in local government units as shown in Table 2.

Therefore, there is a relationship between the COVID-19 pandemic and customer service quality in local government units.

The pandemic has had a negative impact on clients' perceptions of service quality in local government units.

The applied research tool shows that the quality of customer service in local government units does not meet client expectations.

Both before and during the pandemic, clients' perceptions of the ideal local government differed significantly from the perceptions of the individuals surveyed. The mean ranks for perceptions of an ideal local government are: (Mrang560.77-Mrang591.42).

**Impact of the COVID-19 pandemic on the quality
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**Table 2. Reliability and trust dimensions assessed by clients of local government units
based on the author's research- Kruskal-Wallis test**

Tested value ^{ab}									
	Specific time for fulfillment of commitments	Flawless documentation	Competent local government staff	Implementation of services by the local government in a short period of time	Reliability of employees when solving client issues	Expertise of local government staff	Secure provision of services	Trust inspired by local government staff	Polite local government staff
Kruskal-Wallis H	109.551	106.980	104.604	116.180	83.493	95.262	84.084	91.486	67.756
Df	2	2	2	2	2	2	2	2	2
Asymptotic significance	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
a. Kruskal-Wallis test									
b. Grouping variable: ST ATE									

The opinion on customer service in local government units before the pandemic did not exceed the level of (Mrang413.59) while during the pandemic, it is at the level of (Mrang408.64), which is the best result among all the analyzed ranks. The mean ranks defining the areas of reliability and trust indicate that respondents rated the level of customer service more favorably before the COVID-19 pandemic. In terms of reliability, issues such as correctness of documentation, staff competence, or reliability of employees have worsened, with the lowest differences. On average, this change ranged from 1.92 - 11.87.

In this area, staff reliability was the least affected by the pandemic. Furthermore, the biggest deterioration was found in the timeliness of payment of liabilities. Similar to the reliability dimension, trust also deteriorated during the COVID-19 pandemic. The expertise of the staff was rated the worst during the pandemic, with a mean rank of (Mrang399.01), which may be due to the multitude of changes in the pandemic-related regulations.

On the other hand, the lowest difference between the status before and during the pandemic occurred in the element of the mode of service provision.

The results obtained using the non-parametric Kruskal-Wallis test indicate that the pandemic caused by the SARS-CoV-2 virus increases the risk in the area of customer service quality in the areas of reliability and trust.

4. Discussion

The problems associated with the COVID-19 pandemic restrictions had a significant impact on the functioning of the economy and the public service sector (Androniceanu, 2020; Amirudin et al., 2021; Csákay et al., 2021; Kobis & Karyy, 2021). Therefore, it was deemed appropriate to undertake a study on measuring customer satisfaction of local government units before and during the pandemic. Based on the implementation of the SERVQUAL method, the study measured how clients feel about service quality from the perspective of five areas, i.e., certainty, reliability, empathy, responsiveness, and tangibility, used to diagnose the substantial gaps between perception and expectation.

The comparison of satisfaction levels before and during the pandemic in the study is important because the shortcomings and weaknesses identified should form the basis for identifying procedures for managing customer service in situations of risk materialization (e.g., subsequent pandemics) and for improving services when specific risks (e.g., event risk) are reduced. It seems crucial to identify the weakest service areas and critical functions to maintain the continuity of operations. Moreover, such a diagnosis identifies the areas that need urgent changes whereas the method of their implementation should be planned. Implementation of changes may require significant additional funding e.g. development of electronic infrastructure, involving the need to train employees (as suggested by our research), or reorganizing workplaces that do not require major investments but should be skilfully planned and implemented so as not to disrupt current operations. The present study showed that the level of customer satisfaction with the local government services offered is not satisfactory. This lack of satisfaction is evident both before and during the pandemic although it should be noted that during the pandemic, satisfaction levels were even lower and customers felt that the timely delivery of public services was compromised (**H₃**). The survey highlights the disparity between the perception and the actual state of services provided to clients of local government units. In the present study, the results indicate that the most important areas for customers of local government units in terms of service quality (both during the pandemic and before) are the dimensions of trust and reliability.

The results essentially confirm previous studies conducted in this area in the pre-pandemic period. As a rule, customers of the offices surveyed were not satisfied with the quality of services provided. The results of the study presented by Ramseook-Munhurrun, Soolakshna, Lukea-Bhiwajee, Naidoo can be emphasized here. These authors showed that the public service quality gaps in Mauritius indicated that the public service department was failing to meet the expectations of its customers. Similar to our findings, their analyses provided evidence that service provider gaps must be reduced. It is important to emphasize that employees should be better trained to provide services of higher quality (Ramseook-Munhurrun et al., 2010). In our study, the incompetence of the staff was demonstrated because, in the opinion of respondents, the staff was rude and unreliable, which undoubtedly requires additional training to improve their knowledge, skill, and ability (KSA) (**H₂**). These

research findings support those presented by Folz, Kaliannan, Puteh, and Dorasamy (Folz, 2004; Kaliannan et al., 2014).

Similar findings were presented by Nedeljko. These authors analyzed the service quality of municipalities of Srebrenica, Bratunac, and Milici in Bosnia and Herzegovina, also using SERVQUAL method with five quality determinants: reliability, responsibility, empathy, safety, and tangibility. They used two subscales, with one referring to customers' expectations and another to their perception of the service quality. The major finding obtained from data analysis showed that the quality of municipal service is not satisfactory. The research also revealed significant gaps between customers' expectations and their perception of each service quality determinant, especially reliability and responsibility of service (Živković et al., 2019).

In contrast to the above-mentioned analyses, the study conducted in Indonesia (in Manado) showed that service quality and public satisfaction with Local Government Agencies in Manado city are good. The study found that improved tangible, responsiveness, reliability, assurance, and empathy together resulted in increased public satisfaction in Manado City, while reliability had the most dominant influence on the public satisfaction of the city (Tumiwa et al., 2018). As in our study, the authors found that increased tangible will not result in increased public satisfaction. In our study, the tangible aspects related to infrastructure were rated as less important, which may indicate that their quality is acceptable in terms of the organization in the offices themselves. Analogous results were obtained by Martinović, Pavlić, Šuman Tolić in assessing the quality of services. The authors evaluated the difference between consumers' perceptions and expectations using SERVQUAL methodology among residents in Dubrovnik. Their analysis found that consumers were not satisfied with the quality of services and the level of gaps was evident in all areas of the study (Martinović et al., 2017).

However, as in our survey, the material area was the least important factor in the quality assessment concerning the need for modern equipment in public utility facilities or appropriate dress codes (H₄). In our study, empathy was a relatively unimportant component of service quality. Therefore, it appears that this dimension may be important for selected types of services. This is indicated, for example, by surveys of citizen satisfaction with the transport services offered by the regional provider (Department of Transport and Communications of the Regional Unit of Kavala) in Greece. The authors of this research showed that while the quality of services in all dimensions of the SERVQUAL model does not translate into dissatisfaction among citizens, it certainly does not produce satisfaction, and that empathy is a key factor in satisfaction (Thomai et al., 2018).

Our research further indicated that the impediments associated with the pandemic period exacerbated all weaknesses (declared by respondents) of services. The component of the reliability dimension, representing the continuity of operations and short time should be noted. These are essential functions for meeting the needs of the recipients of communal services. Providing these services is a fundamental obligation of local government units. Unfortunately, even in the pre-pandemic

period, the assessment of these key areas was low. During the pandemic period, the perceptions worsened in these two dimensions. This is a very worrying phenomenon because it shows that local governments may not fulfill the tasks assigned to them. Furthermore, low scores on the reliability and trust dimensions were also given to office staff. Thus, the pandemic period demonstrated that local governments had significant problems with providing services on an ongoing basis. This means that the current objectives of changes must include reorganization in this area so that the local government can meet its obligations in a timely manner during periods of increased risk. Thus, the area of reliability seems to be crucial for local governments as it requires in particular the development of the digitalization of the services offered, faster service delivery, and the improvement of the knowledge of front-office employees. Failure to take action in these areas could even cripple customer service in the local government sector during times of increased risk.

Although the results obtained may contribute to the knowledge about the expectations of customers of local government units, when interpreting the results, one should take into account the limitations which emerged during the survey. First of all, one should remember that satisfaction which is a reaction to a service received is subjective in nature. Therefore, two persons answering the same question may have extreme opinions on a given issue. Moreover, it should be noted that the research concerns only a small percentage of people using the <https://www.swpanel.pl> portal or <https://www.survio.com/pl/>. The sample size focused only on people with access to the above-mentioned platform, so generalizing the results should be done with caution. Therefore, we should consider repeating the research on a larger percentage of the population.

5. Conclusions

Based on the present research, it can be concluded that the quality of the services provided in the area of reliability and trust in terms of all the elements mentioned was assessed negatively by the respondents. The mean arithmetic differences do not exceed 1. However, the entities surveyed should strive for a value of around 0, which is evidenced by the high weights assigned to these areas. The respondents' perception of reliability was worse. To prevent this, local governments should implement corrective actions. The results of the Kruskal-Wallis test show that the COVID-19 pandemic negatively affected the dimensions of reliability and trust that make up the quality of customer service in local government units. This is evidenced by the results which show the deterioration of the quality of customer service during the pandemic. The current situation exacerbates the negative trend resulting from the gap between the perception of the services provided and the actual requirements of the respondents.

Authors Contributions

The author/authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

Conflict of Interest Statement

The authors declare no conflict of interest.

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