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Modern Management Methods in the Area of Public Housing Resources in the Community

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Abstract: Real estate management is a complex process that consists of making or indicating decisions of both a tactical and strategic character. To ensure the realization of the tasks, real property owners need to adjust their services to respond to technological pressure, a dynamically changing market, and the demands of the customer, thus resulting in various innovations introduced by the owners in the process of the public housing management. A review of the subject literature was the source of the theoretical motivation to conduct the empirical research on the innovations implemented by property owners. The main objective of said research was to ascertain which innovations have been implemented by the entities that were owners of public property in the Częstochowa City Commune and how were they evaluated by the residents. A questionnaire survey was used to verify the hypotheses. Statistical analyses were also carried out using the IBM SPSS Statistics 26 package, which was used to analyze basic descriptive statistics, including the Shapiro–Wilk test, the Student's *t*-test for independent samples, Spearman's rho correlation analysis, Pearson's r correlation analysis, and linear regression analysis. The research presented in this paper was conducted in the Q3 and Q4 of 2020 among the residents of the public housing in Częstochowa, Silesian Voivodeship, Poland. The measurement tool used was a survey form. The survey itself was submitted by 444 respondents (n = 444). The results of the research made it possible to determine which innovations were implemented by the municipality in question and to what extent they were important or for the residents. The main finding of the survey is that residents of the municipal housing stock consider the innovations implemented by the municipality to be important.

Keywords: innovations; management; public resource; real estate

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1. Introduction

One of the main tasks of local self-government units on a communal level is meeting the housing demands of the local community. It is thus a given that communes should strive to implement correct housing policy, including the efficient and effective management of new and already owned housing resources, i.e., public housing resources [1]. Activities taken in the process of the public housing resource management include, by definition, administrative and bookkeeping tasks, such as preparation of (drawing) the agreements of tenancy, ensuring the delivery of utilities, calculating and collecting rent and bills independent of the tenants or the collection of the past due liabilities, specifically including overdue payment notices, and then followed by submitting the applications to money collection or eviction to a local court [2]. Thus, having all the above in mind, communes and administrators, acting in their names, should implement various innovations in the process of public housing resource management [3].

The result of the literature review has found a research gap in the current state of knowledge resulting from empirical research. Our research shows that, in Poland, there is

a lack of studies presenting innovative solutions in the management of the housing stock. There is also a lack of commercialization of already implemented solutions to support housing management in the municipality. The above issues are discussed only in general terms. An analysis of the literature dedicated to innovations led the authors to the conclusion that it focuses on various aspects of the public housing resource management, specifically on the management models used therein [4]. It lacks, primarily, references to the issue of innovation in the sphere of the public housing resource management, which include, first and foremost, the types of such innovations, the process of their implementation, and the influence of the implementation on the living conditions of the resource residents. Although it is possible to find materials dedicated to innovations implemented in the area of city management [5], they cover areas such as public transport [6], environmental protection [7,8] and urban revitalization [9]. The subject literature chiefly presents innovations related to the development of the real estate market [10,11], the models and process of the management of such a market [12,13], new construction technologies [14,15] and new construction materials [16,17]. Ecological innovations in the waste management sector are included as part of the implementation of the municipality's economic strategy for sustainable development [18,19].

The management of municipal public housing stock is an issue of great importance today, as the topic of housing policy, and, in particular, the decreasing availability of housing, not only in Poland, but in various countries, as well as the minimal chances for young people to buy their own homes due to rising housing prices [20] or due to the lower availability of mortgage financing [21], significantly affects the need for innovative solutions in this area. Such an important area cannot be overlooked, as municipalities depend on the housing policy of the state. They also face numerous problems for their inhabitants, which are caused mainly by difficult situations of a personal [22,23], material and financial nature [24–26]. The lack of an effective housing policy and an efficient housing management system leads to deprivation in the long term and results, for example, in unemployment and poverty [27–29], as well as consequent social exclusion. An analysis of possible ways to meet the housing needs of the poor and evicted is also presented, and examples of the Polish investment program with the housing exchange program and the issue of compensation are cited as innovative solutions [30,31]. This is why it is important to include social innovations in public resource management [32,33]. Social innovations are identified in the subject literature in reference to the general, pressing social problems, such as inadequate education, poverty, hunger, diseases, or social injustice [34,35]; whether the design of communal spaces in residential buildings affects good neighborliness and loneliness for residents [33,36]; the methods, ideas, and processes aimed at the alleviation of said problems [37,38]; and the identification of areas theoretical reflection and empirical research on real estate management, as well as the identification of scientific concepts that are particularly important for solving real estate management problems in public entities [39]. The latter are analyzed in the context of the problems faced by a substantial part of the population, and are not the specific practices of a housing administrator [3], e.g., improvement of living conditions, an ability to end rental debt [2,40], or directions for the relocation of municipal housing tenants in order to improve the rational management of the municipality's housing stock [41].

To fill the research gap in the area of innovation implemented in the process of public housing resource management, research has been conducted that was related to the innovation implemented by the Częstochowa City Commune. Częstochowa is a city with county rights in the Silesian Voivodeship in Poland (Figure 1).

Figure 1. Geographical location of Częstochowa (Geographical coordinates: 50°49′04″ N 19°08′18″ E). Source: https://upload.wikimedia.org/wikipedia/commons/b/b1/Cz%C4%99stochowa_na_mapie_Polski.png, accessed on 28 April 2023).

The vision of Częstochowa presented in the Strategy of City Development 2030+, accepted with a Resolution of the 1 December 2016, consists of several parts. The city is to be resident-friendly (e.g., in the material aspect of the living conditions); competitive at the supraregional scale; socially, economically, and spatially coherent; efficiently administrated; and be proud of its openness and hospitality tradition, as with the city of Jasna Góra [42].

Diagnosed problems included such issues as, e.g., the progressing process of urban population ageing, problems related to the job market threat posed by low wages, and living conditions, such as the technical condition of the buildings administrated by the city, their inadequate numbers, and the necessity to issue housing bonuses on a large scale. The Strategy of City Development stressed that, within the last 25 years, the construction rate of the number of multi-apartment buildings significantly decreased, and the rent value set at the level allowing the maintenance of the buildings (repair fund) poses a material problem for a portion of residents. To satisfy the basic housing needs for the less affluent Częstochowa resident, it is planned to build approx. 5000 rental apartments and approx. 1000 public apartments [43].

According to the city, another problem is the debt of the tenants and increasing domestic violence. In the strategy, such problems were only mentioned, without any plans to prevent or solve them. The authors of the manuscript hope that the considerations presented in this paper will broaden the knowledge of how innovation can be implemented in public housing to improve the quality of life of tenants. In this regard, the goal of the research was to determine which innovations were implemented by the Częstochowa City Commune in the area of public real estate, how the implementation process was implemented, and what were the repercussions of their implementation. In order to detail the research problem and to confirm or reject the hypotheses adopted, dependent and independent variables were defined. It was assumed that the independent variable was the participation of residents in the management of municipal resources, while the dependent variable was the perception of the implemented innovations by residents. It was assumed that the implementation of innovations in the municipal resource management process translated into an improved quality of life for residents and a higher level of acceptance of the introduced solutions.

The article potentially enhances the subject literature by presenting a process of the operation of public resources in the implementation of the innovations and thus presenting key innovations implemented using public resources and the consequences of their implementation. Despite the powerful theoretical background presenting an analysis of municipal resource management methods and stakeholder roles, the results presented are fragmented and do not take into account specific examples of innovations, their impacts on improving the quality of life of resource residents, or the perceptions of implemented activities by residents. As mentioned above, the work fills the scientific gaps in this area by analyzing the innovations implemented using municipal resources with a concrete example and diagnosing the residents' attitudes towards these innovations. The presented case study can be considered for its originality of the presented material. The results of the conducted research and the assumptions made in relation to them can have significant practical applications. The research presented in this paper were conducted in Q3 and Q4 of 2020 among the residents of the public housing in the Częstochowa City Commune, Silesian Voivodeship. The research used the survey method, with the measurement tool consisting of a specific survey form.

The paper potentially extends the literature by suggesting opportunities for implementing new approaches in municipal housing stock management. In this article, we present key arguments for best practices in implementing innovations in housing stock management with positive outcomes. We suggest, using a selected example, innovative approaches to management systems that translate into an improved quality of life for tenants.

The article has been prepared using the literature study in the area of management, organization, planning, domestic and European documents related to this subject, analysis of the conducted research, and an already existing data. The results of the conducted research and the findings made in the article can have significant practical applications. They can be used by communes and communal public housing administrators to verify the justification of the implementation of various innovations in resource management by said administrators, including the assessment of the influence of said implementation on the improvement of the residents' living conditions.

2. Materials and Methods

2.1. Research Background—Innowacje w Zarządzaniu Nieruchomościami Mieszkalnymi

The subject literature indicates that real estate management is a complex process [44–46] that consists of making or indicating decisions of both a tactical and strategic character related to real estate [47–49], but also relates to the area of the administration, exploitation, and investment that will be aimed at the objectives of the owner [50,51]. It should be noted, however, that in an attempt to achieve these objectives, property owners must pay attention to the related limitations (mandatory and prohibited actions) resulting from the applicable laws [52]. Pursuant to art. 148b of the Real Estate Administration Act, tasks that need to be realized by the property owner include making decisions and taking actions aimed at the rational governance of the property, specifically [53–55]:

(1) Proper economical and financial management of the property;
(2) Safe usage and proper exploitation of the property;
(3) Proper energy management as per applicable regulations of energy law;
(4) Current administration of the property;
(5) Keeping the property in a not diminished state, in accordance with its intended use;
(6) Justified investment in the property.

It should be stressed that the real estate resource of the communes is created to enable the performance of the statutory public service tasks. In the case of public real estate, the basic objective of this resource is meeting the housing demands of specific members of the self-government community [4]. To ensure the performance of the aforementioned tasks, real estate administrators need to adjust their services to respond to technological pressures, a dynamically changing market, and the demands of the customer. This is why they implement various innovations in the public resource management process. Presently,

the communes, as the owners of the real estate, take more and more actions aimed to develop and implement innovations. Innovative solutions are used in relation to the many aspects of residential property management. As already mentioned in the introduction, the literature primarily mentions the innovations encompassing real estate management or new methods of production and new merchandise, i.e., new construction technologies and methods aimed at the creation of the product that is a modern object building. Thanks to the implementation of such innovations, such an object should meet all the quality, practical, environmental, or energy standards. It should be stressed that the innovative solutions should not only be applied to the activities consisting of construction of new building property or modernization and repairs of the existing real estate. Innovations implemented in the public resource need to be realized in accordance with the idea of sustainable development [46] and ensure or increase safety of the residents of said property, as well as their comfort and quality of life.

Housing resource of Częstochowa City Commune is formed by the housing apartments located in the buildings owned or co-owned by the Commune, in the buildings of housing cooperatives, and in the buildings of undetermined legal status in an autonomous possession. The housing offer of the Commune is supplemented by the apartments built as a part of TBS scheme (Towarzystwa Budownictwa Społecznego, Social Construction Associations) that are a property of the Zakład Gospodarki Mieszkaniowej Towarzystwa Budownictwa Społecznego communal limited liability company, registered in Częstochowa (location: silesia voivodship, Poland), and hereinafter called ZGM "TBS" Sp. z o.o., that maintains apartments of a local area equal to 26,353.19 m^2 in 12 housing buildings [46]. As of 31 May 2020, housing resources owned by the Commune consisted of 7879 housing apartments, with a total area off 346,339.80 m^2, located in 641 buildings. Among the 640 buildings owned by the commune in 2021, 428 were in good technical condition, and 52 were in bad condition. It is assumed that, in 2025, 433 buildings will be in good technical condition. Urban housing resources of the Częstochowa City Commune consist of 7879 public apartments, including 7511 housing apartments, 339 apartments with public rent, and 29 temporary housing apartments. In the resource of the commune, 5496 apartments are equipped with central heating systems, 7321 have toilets, and 6426 have bathrooms. As of 1 January 2017, within the entire resources of the Commune, there were 3274 apartments that were indebted to a total of PLN 10,410,201.67, while, as of 1 December 2021, there were 3277 apartments indebted to a total of PLN 13,263,980.36. A total of 142 buildings qualified for the lowest quality group. A total of 32 buildings were equipped with an outdoor toilet, while common sanitary units were located in 31 buildings [56]. Management of the housing cooperative property and public resource requires responsibility, and making tough, yet necessary, decisions on a daily basis. The commune, according to the tasks set by itself in the area of public resource management, attempts to use all circumstances that might allow improvement and rationalization of the management of the apartments [57]. Częstochowa City Commune wants to reduce social problems and attempts to increase quality of life of its residents by supporting the process of increasing the creativity and innovation level of the city, thereby creating an adequate labor market and promoting innovations and enterprises among the residents, as well as managing an innovative housing policy [58]. Actions taken by the city have been a significant challenge in the times marked by pandemic and the war in Ukraine. Nevertheless, struggles with poverty and social exclusion are an absolute priority for the city of Częstochowa, primarily because it is clearly described in the strategy and development programs of the city. It is assumed that innovative pro-social activities, especially those undertaken in the area of the public resource management by the Częstochowa City Commune, will contribute to reduction of helplessness and poverty, and thus support combating disfunctions in family and society.

At the moment, it should be stressed that the presented problems cannot be considered comprehensive, because this is a multi-aspect and interdisciplinary research area. In addition, the indicated data are incomplete, and there is missing information concerning the situation of the tenants using public resources, which incentivizes further research.

2.2. Statistical Analysis Methods

The objective of the research was to determine what innovations were implemented by the Częstochowa City Commune, what was the process of their realization, and what results have this implementation had. In the latter issue, the crucial factors are the influence of the introduced innovations on the living conditions of the resource inhabitants, as well as on the substance of the particular real estate that constitutes said resources. The basis for developing the research concept and research hypotheses was, firstly, the research carried out by the City Hall of Częstochowa, for the purpose of developing the city's development strategy, in the form of a strategic workshop defining through an open debate: this included development potentials, challenges, development visions, goals, and directions of the municipality's activities that took into account all problems, including housing problems.

The workshops were attended by 150 representatives of different social groups in the city. On average, about 40–50 people attended each workshop. After each workshop, comprehensive material containing the conclusions of the discussions was prepared. After the workshops, the first version of the Development Strategy of the City of Częstochowa 2030+ was prepared. It was presented for public consultation in late July/August 2016. The draft was also made public to give every resident the opportunity to contribute their own comments and conclusions [59]. The research carried out by the municipality highlighted areas of urban governance in need of improvement in the areas of society, culture, economy, space, infrastructure, environment. From the survey results, the challenges facing the authorities were identified. The main problems identified by respondents were the weakening of the city's residents' relationships, the unsatisfactory level of involvement of residents in the development of the local community, the insufficient number of activities undertaken to improve the quality of life of residents in the spheres of family functionality, exclusion, and public housing.

Both the research carried out by the Częstochowa City Hall, which made it possible to obtain, among other things, data on the expectations of residents towards the municipality in the sphere of improving the quality of life, and the analysis of the literature on the subject, made is possible to notice a clear gap in the empirical research concerning the implementation process, innovations in the municipal resource, and the impact of their implementation on the living conditions of the resource's residents influenced the development of directional, causal research hypotheses.

In view of the above, the authors assumed that:

Hypothesis 1 (H1). *Innovations improve the process of the public housing resource in the communes.*

Hypothesis 2 (H2). *Implemented innovations are considered important by the residents of a public resource.*

The course of the conducted research is presented on the Figure 2.

Research process has been started from the analysis of the webpages of the Częstochowa City Commune. This analysis made it possible to establish the innovations implemented in the management of that resource. Analysis of the Internet sources, namely from the Internet issues of the local press, also played an important role, as these sources allowed us to gather knowledge concerning the implemented initiatives.

An important element of the diagnosis of the innovations introduced in practice by the Częstochowa City was also the information about Resolution n. 2008.12017 of 8 September 2017 approved by the Mayor of Częstochowa concerning the support of the repayment of debt accrued by the people in difficult material situations due to the usage of the housing apartments belonging to the housing resource of the commune (with further amendments) [60]. We also need to mention Resolution no. 511/XXVIII/2012 of the Częstochowa City Council, introduced on 22 November 2012, which regulated the manner of operation and management of the housing resource of the commune [61].

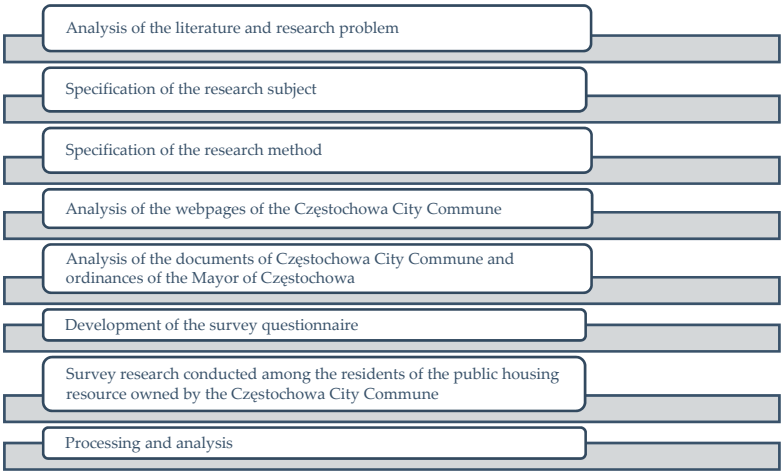

Figure 2. Graphical representation of the research course.

The assessment of the veracity of the hypotheses was subjected to empirical testing.

The primary research tool specified in the manuscript was a questionnaire. The survey research was conducted using an individual questionnaire. The measurement tool took the form of a structured questionnaire developed by the authors of this article. To provide answers to the hypotheses that the introduction of the innovations is accepted and contributes to the improvement of the quality of life, the frequency of the answer to particular questions from the questionnaire was analyzed. Statistical analyses were performed using IBM SPSS Statistics 26 package to verify the hypotheses. It was used to analyze basic descriptive statistics together with the Shapiro–Wilk test for normality of distributions of quantitative variables; the Student's *t*-test was used for independent samples comparing two equilateral groups in terms of dependent variables whose distributions were normal distributions; Pearson's r correlation analysis was used for relationships between quantitative variables whose distributions were normal distributions; and Spearman's rho correlation analysis was used for relationships between other variables and quantitative variables and linear regression analysis to predict the severity of quantitative dependent variables from multiple predictor variables. The dependent variables included in the analyses were satisfaction with the housing, satisfaction with the quality of the space, cooperation, local responsibility, type of action, and type of expected effects. The variables indicated represented the mean value of the responses to the individual questions in the authors' questionnaire covering the study area. The exceptions were the variables satisfaction with the housing and satisfaction with the quality of the space, which were a direct reflection of the questionnaire questions on satisfaction with the housing and quality of the space. The independent variables were gender, age, and education. The materiality level for this chapter was $\alpha = 0.05$.

In order to verify the reliability of the applied research tool, the Cronbach alpha coefficient was calculated for individual areas of activity of Częstochowa City Commune. The analysis showed that all areas had very good internal compatibility ($\alpha > 0.80$). Employer responsibility was the highest ($\alpha = 0.957$), while cooperation was the lowest ($\alpha = 0.885$).

In total, 444 responses have been analyzed. The survey consisted of 7 pages. The first contained a preamble specifically indicating the subject of the survey, the objective of the research, and the instruction for the survey. At the same time, the respondents were informed regarding the anonymity of the research and the intent to analyze the results of the research as a collective statistical dataset. It was also mentioned that the research results would be used to commercialize the addressed problem and would be used in the published academic article. Based on the subject literature review, 35 questions were developed. Questions were related to the innovative activities of the Częstochowa City Commune (the most important innovations implemented by the Commune have been discussed in detail in the 'Results' chapter). In the course of research, the following topics were addressed:

- Requirements of the innovations in the public resource management;
- Perceiving of the innovative activities by the residents;
- Meaning the implemented innovations have for the residents.

A total of 26 items of the questionnaire were closed questions, with respondents being able to choose one of several available answers. In the case of the remaining 5 questions, it was possible to choose more than one answer. In the 4th question, a scale was enforced, and the respondent was asked to indicate a clearly defined category on a scale, without an ability to voice their opinion. The respondents were tasked with presenting their stances on the presented answer and picking the degree to which they agreed with them. Intensity of the respondent's attitude was measured with a bipolar, five-point ordinal scale, with each point being assigned a numerical value and a description. The numerical values ranged from, e.g., 1 to 5, with the increase in number corresponding to the increase of the intensity of the defined characteristic. Namely, a Likert's scale was used, where 5 means 'definitely important', 4—'important', 3—'not important', 2—'definitely not important', 1—'no opinion'.

The questions were formulated unambiguously, so that everyone could understand them. The questionnaire was designed in such a way that allowed one question to refer to one and only one issue. No specialist terms, industry jargon, or foreign loanwords were used. Due to the characteristics of the respondent population, the research is considered a survey of the consumers' opinions.

The last element of the survey was a label containing the respondent's personal data, such as gender, age, and education. The research presented here was conducted in Q3 and Q4 of 2020.

The survey was provided to 500 people living in the public housing apartments owned by the Częstochowa City Commune. Eventually, 444 completely filled forms, i.e., forms with all responses entered correctly, were returned to the research team (88.8%). The housing resource of the Częstochowa City Commune consists of almost 8000 apartments with close to 21,000 tenants. By calculating the minimal (required) number of people in the sample (in the research using a sample of the population), a confidence interval of 95% was assumed, with fraction size equal to 0.5 and the maximum error margin equal to 5%. In accordance with the assumed values, it was estimated that the required population size was 377 individuals. The participants in the survey were residents of the housing stock of the Municipality of Częstochowa. This research can be described as incidental, random community research, as the respondents were not selected according to a purposive scheme; they just had to be residents of the municipality's resources. Respondents were guaranteed confidentiality, due to which it is impossible to identify a particular participant. Questionnaire contained full description of the objective of the conducted research and pointed out that the survey is fully anonymous. The number of obtained forms made it possible to treat the covered sample as representative.

2.3. Characteristics of the Research Sample

Survey research was conducted among the residents of the housing resource of the Częstochowa Urban Comumune, and can be considered an example of the research of the incidental (random) communities, as respondents were not intentionally selected in accordance with pre-existing criteria, and the only requirement of inclusion was residence in the public housing resource owned by Częstochowa City Commune. The surveys were freely accessible in the Customer Service Centers. They were also divided into the main part and the data card. In this research, we took into account such variables as gender, age, and education (Tables 1 and 2); primary sources of income (Table 2); and period of use of municipally owned premises (Table 3).

Table 1. Characteristics of respondents.

Characteristics of Respondents		
Gender	Women	49.1%
	Men	50.90%
Age	18–24	3.15%
	25–39	27.13%
	40–59	41.54%
	60 and over	28.18%
Education	Higher	31.0%
	Secondary/technical	37.0%
	Basic vocational	27.0%
	Primary, junior high school	7.0%

n = 444.

There were 444 participants in the research (n = 444), including 218 women and 226 men. Thus, men formed 51% of the respondents, with the remaining 49% being women.

The largest subgroup of the research participants was formed by people aged 40 to 59. This age bracket applied to 186 respondents. In turn, 129 of the respondents were 60 or older, while 138 respondents belonged to the group aged 25–39. The smallest group consisted of people aged 18–24.

In taking the education level of the respondents, it needs to be pointed out that the largest group of the research participants was formed by the people with secondary/technical education.

Approximately 31% of respondents were college graduates, while 25% had secondary vocational education. The smallest group of the research participants was formed by people with primary education (grammar school or junior high school).

Table 2. Sources of income.

What Is Your Primary Source of Income?	**Employment Contract (Full-Time or Part-Time)**	**53.80%**
	agriculture	0.80%
	student	2.30%
	self-employed/own business	13.45%
	contract work	8.40%
	retiree/pensioner	10.15%
	casual work	4.35%
	unemployed	3.20%
	other	3.55%
Total		100.00%

n = 444.

Table 3. Length of use of municipally owned premises.

How Long Have You Been Using the Residential Premises Comprising the Resources Managed by Częstochowa?	**Period of Use of the Premises Up to 5 Years**	**94**	**21.17%**
	period of use of the premises 6–10 years	108	24.32%
	period of use of the premises 11–20 years	118	26.58%
	period of use of the premises over 20 years	124	27.93%
Total		4444	100.00%

n = 444.

The most frequently indicated primary income source was an employment contract. Moreover, 13.45% of the respondents ran their own business, 8.4% performed contract work, 10.15% lived on a pension, and 4.35% of people lived on casual work. There were nine respondents without employment who constituted 3.20% of the respondents.

Among the respondents, the largest group were those who had been using a dwelling owned by the municipality for more than 20 years; they accounted for 27.93% of the respondents (124 people). A large group of respondents had been using the premises for 6 to 10 years—26.58%. A total of 108 people lived in municipal housing stock for 6 to 10 years. The fewest respondents lived in a communal stock dwelling for up to 5 years—94 people—which amounted to 21.17%.

3. Results

3.1. Innovations Introduced by Częstochowa City Commune, Poland

In the purview of the research and analyses conducted, it was agreed that the innovations included new enterprises, actions, and solutions, including those of organizational character. In addition, it was assumed that the enterprises, actions, and solutions were characterized by novelty in the cases when they were implemented no later than five years prior to the research. It was also assumed that they were characterized by novelty when they were new in the framework of the activity of the Częstochowa City Commune in the scope of public housing resource management. Innovations implemented by the Częstochowa City Commune were aimed at the improvement of the comfort and quality of life of the people inhabiting the public housing resource. Based on all the assumptions presented above, it was determined that the most important innovations related to public housing resource management by Częstochowa City Commune were:

1. An apartment exchange digital browser;
2. An electronic housing exchange finder;
3. A "Work for rent" program;
4. Actions increasing the safety of the youth and elderly;
5. The installation of carbon monoxide and natural gas detectors in the apartments located in multi-family buildings;
6. The establishment of green spaces on the property surrounding multi-family buildings;
7. The organization of so-called Neighbor Days, holiday events, and other activities for children living in the resource;
8. The participation of the tenants in the management of the Commune's housing resource.

An apartment exchange program was introduced by the Ordinance of the Mayor of Częstochowa to facilitate the repayment of debt resulting from the use of the apartments belonging to the public housing resource of the Commune. The program was aimed at people in a difficult material situation who were potentially facing eviction. It included an opportunity to swap the apartment used by the debtor if the said apartment was not adequately suited to their needs, namely, if it had an excessively large area. This way, debtor could exchange the apartment they currently used for one of a smaller area, which, as a rule, resulted in the decrease of the rent and other utility bills, thereby allowing the adjustments of such burdens to the financial capabilities of the debtor. It should also be mentioned that the other party (often a family including several people) also benefitted from this program by obtaining a larger apartment that was better suited to the larger number of tenants. After the program was met with success, the Commune implemented a digital apartment exchange browser application (available at the address: http://mieszkania.zgm-tbs.czest.pl/ accessed on 28 April 2023). This application allows people interested in such an exchange to find an apartment matching their need by using such search criteria as: living area, number of rooms, floor, or type of heating.

The aforementioned Ordinance issued by the Major of Częstochowa [46] also allowed for the settlement of the debt resulting from the use of the apartment in the form of in-kind benefit. This form of benefit consisted of the repayment of the specified part of debt. This program was named "Work for rent". People interested in this sort of benefit contacted the

administrator of the properties owned by the Częstochowa City Commune to determine the possibility of working the debt off. When the criteria of the program participation were met, a participant was assigned specific works to complete, such as the delivery of correspondence sent by the administrator to other tenants, janitorial tasks, the supervision of the designated properties, or small repairs made in the buildings belonging to the housing resource of the City of Częstochowa, such as, e.g., interior painting. Participant were not remunerated for such tasks, and the total amount of 'earned' remuneration was deducted from the participant's debt. It needs to be mentioned, however, that this program was addressed to people in a difficult financial situation.

In the recent years, the Częstochowa City Commune also undertook numerous actions dedicated to the safety of young and elderly people. These actions specifically included information campaigns related to protection against criminal activities, including obtaining financial resources under false pretenses, which often use the 'grandson in need' or 'helpful policeman' confidence methods. Importantly, such actions also included issues related to the cybersecurity of children, adolescents, and seniors. Campaigns primarily consisted of the publication of informational brochures and the creation and dissemination of short movie clips. It should also be noted that the security of the residents of the resource belonging to the Częstochowa City Commune was a subject of academic conferences organized in cooperation with academic circles, including scientists from the Częstochowa University of Technology and various other institutions, including, but not limited to, police or charity funds and associations. For example, during the conference organized in 2019, the following subjects were discussed: "Selected threats to popular operational systems and devices" by Kaspersky Poland, "How to speak to children about cybersecurity, so the will listen", and "I say stop cyberbullying". The subject of security was also touched upon during a cycle of conferences organized by the City of Częstochowa in cooperation with the academic community and other institutions under the name "Smart City". In the course of such conferences, other topics were brought up related not only to security, but also to public real estate resource management, including, e.g., financial instruments needed to conduct operations involving real estate, such as repairs and modernizations. Actions aimed at the improvement of security and safety also helped to support the health and life of the residents, such the case of the installation of carbon monoxide and natural gas sensors in the apartments located in multi-family buildings.

The commune introduced innovations in the area of the spatial development of the areas managed by the commune itself, and it took numerous actions aimed at the increase in the green areas surrounding the residential buildings by creating greenery piazzas equipped with various devices and garden furniture that residents could use for recreation.

There were also other innovative activities taken in relation to the technical state of the managed buildings, especially to maintain them, which translated to increased safety for the resource's residents. In relation to this scope, it is necessary to mention that the company used various innovative construction materials and technologies. In this context, we also need to mention that the company made attempts to provide its employees with professional knowledge concerning the innovative solutions in the field of construction. To achieve this, the manager, with cooperation from the Częstochowa University of Technology, commissioned the latter to organize the postgraduate studies "Exploitation and modernization of the residential buildings with Building Information Modeling elements" (BMI—companies involved in the design, construction, and management of a building work on a single project model. They had continuous access to information about the project, its costs, and schedules. BMI allowed various variants and schemes to be tested in the virtual world in order to select the optimal one. This made it possible to increase efficiency and reduce errors that arose throughout the building process. Digital design data, combined with innovative parametric information modeling technology, offers significant advantages over traditional design and construction methods.) The knowledge obtained by the employees in the course of studies included, e.g., the parameters of the energy efficiency of the buildings, the implementation of sustainable construction principles, the

deep thermal refurbishment of the buildings, the systemic management of the energy in the real estate, and the implementation of anti-smog programs.

In discussing the innovations implemented by the City of Częstochowa, we would also need to highlight actions aimed at the reinforcement of the social ties and the promotion of the social integration, including the integration of the elderly with other residents of a given real estate or neighboring buildings. These actions consisted chiefly of the organization of events such as the 'Neighbour Day' addressed at the residents of the commune. It is also important that the participants of these actions are not only the residents of the public housing, but also the members of the housing cooperatives. Thus, the owners of the private apartments (separate) located in the buildings where the Częstochowa City Commune owns public apartments in also participated. Thus, the events organized were aimed at the integration of the tenants of the public apartments with the people owning the apartments in the same buildings. Other special or vacation events were also organized and addressed to the children inhabiting the resource belonging to the commune, e.g., visits of Santa Claus who delivered holiday gifts. In discussing the innovative solutions implemented by the Częstochowa City Commune, it is necessary to stress the activities that strived to facilitate the participation of the residents in the process of public resource management. Częstochowa implements various forms allowing residents to exert their influence on the process of management of the real estates they inhabit, including the decision-making process. An example of such forms are social consultancy and discussions with the residents concerning the issues related to resource management.

3.2. Assessment of the Influence of the Innovations Implemented by the Management of the Housing Resource of the City of Częstochowa on the Improvements in the Quality of Life of the Residents

The respondents were first asked whether the digital apartment exchange browser positively influenced the living conditions of the city of Częstochowa. The analysis indicated that the residents largely agreed that the launch of the digital apartment exchange browser positively influenced their living conditions or responded that they did not have any opinion related to that topic. The percentage distributions of the response are presented in Figure 3.

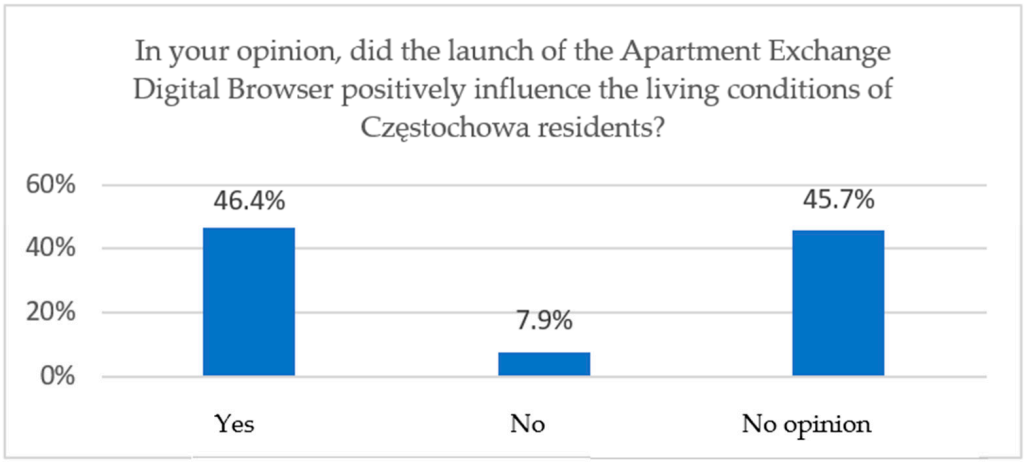

Figure 3. Percentage distribution of the responses to a question whether the launch of the apartment exchange digital browser positively influenced the living conditions of the residents of Częstochowa.

Residents of Częstochowa indicated that the introduction of the apartment exchange digital browser was a significant event. A total of 46.4% (204 individuals) approved the positive influence of the browser on the improvement of the quality of life. Then, to explore the issues related to the apartment exchange digital browser, respondents were asked which of the aforementioned aspects of the launch of the apartment exchange digital browser were evaluated best. Analysis indicated that the most commonly indicated aspects were the adjustment of the apartment living area to the requirements of the tenant, the adjustment

of the rent payments to the tenants' abilities, the facilitation of the repayments of rent debt, and the lack of opinion on the scope of the subject, with the least common being the counteraction to social exclusion and other aspects. Percentage distributions of the responses are shown in Figure 4.

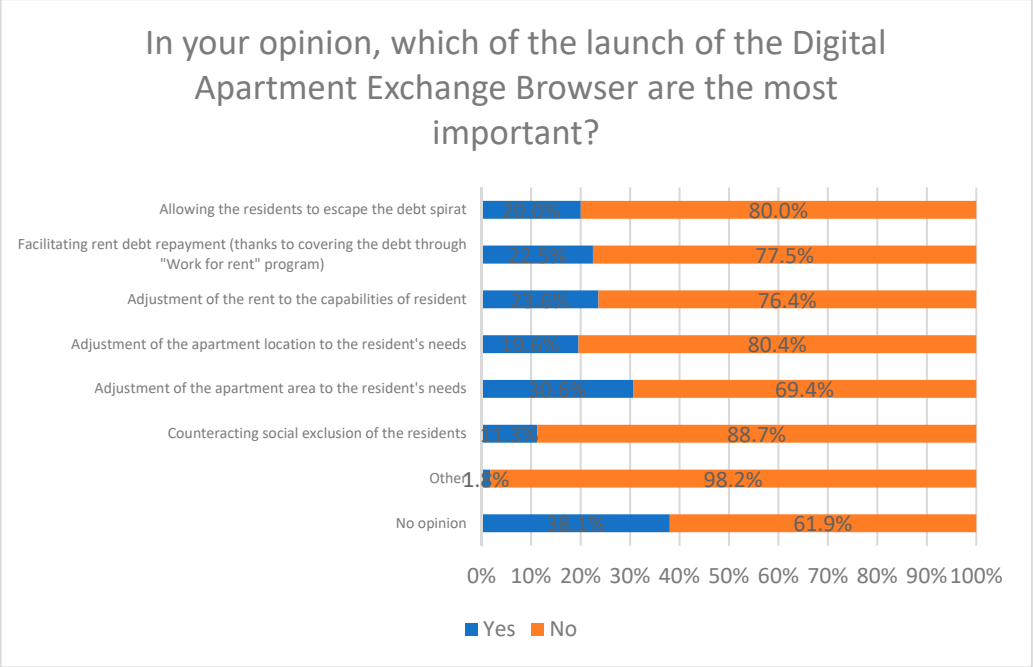

Figure 4. Percentage distributions of the responses to the question concerning the most important aspects of the launch of the apartment exchange digital browser.

The next question was related to the issue of whether the implementation of the "Work for rent" program positively influenced the life conditions of the residents of Częstochowa. Analysis of the results showed that, for the majority of respondents, the implementation of the "Work for rent" program positively influenced their living conditions. Percentage distributions of the responses are shown in Figure 5.

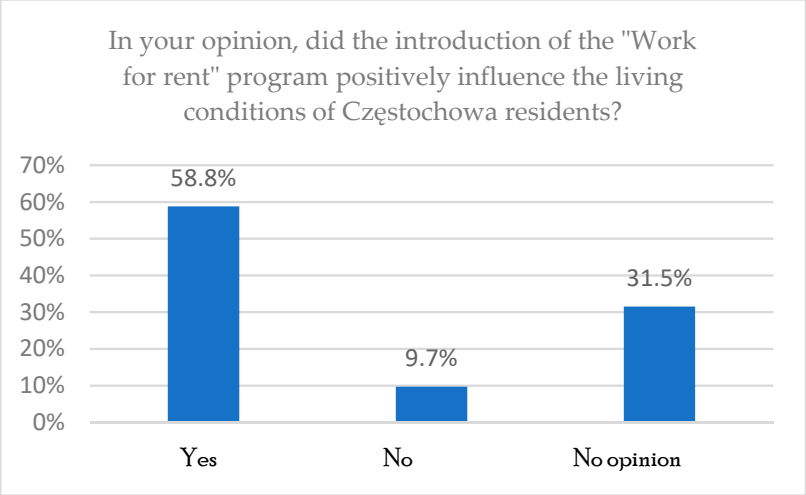

Figure 5. Percentage distributions of the responses to the question as to whether the introduction of the "Work for rent" positively influenced the life conditions of the residents of Częstochowa.

Verification of the research results indicated that the residents of the resource considered the "Work for rent" program as the most important innovative solution. It was named

so by 261 respondents, i.e., 58.8% of all 444 respondents. This result was analyzed in depth by asking the residents which aspects of the "Work for rent" program were, according to them, the most important. The responses indicated by the respondents suggested that the most important aspects of the said program were the facilitation of the repayment of rent debt through the in-kind benefits (work) and the ability to get out of the debt spiral. The least frequent responses pointed to the professional activation of the residents and other aspects. Percentage distributions of the responses are shown in Figure 6.

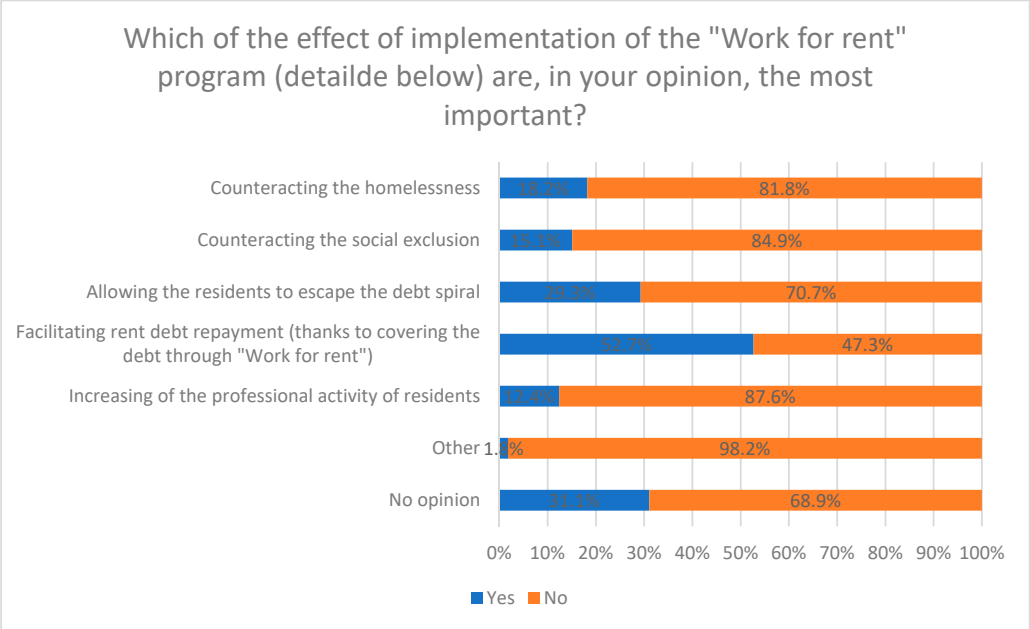

Figure 6. Percentage distributions of the responses to the question about which aspects of the "Work for rent" program were considered best.

The next question concerned the implementation of the actions aimed at the increased safety of the elderly and whether these positively influenced the life conditions of the residents. The results showed that the majority of the respondents (51.6%) agreed that introduction of such actions positively influenced their life conditions. Percentage distributions of the responses are shown in Figure 7.

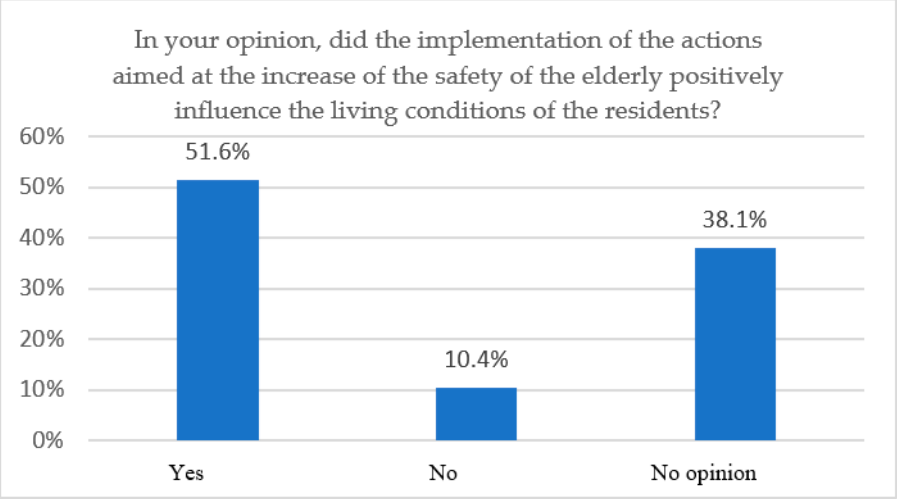

Figure 7. Percentage distributions of the responses to the question as to whether the implementation of the actions aimed at the increased safety of the elderly positively influenced the life conditions of the residents of Częstochowa.

The subsequent question concerned whether the implementation of the actions aimed at the increased safety of children and adolescents positively influenced the life conditions of the residents. The results showed that the majority of the respondents (52.5%) agreed that introduction of such actions positively influenced their life conditions. Percentage distributions of the responses are shown in Figure 8.

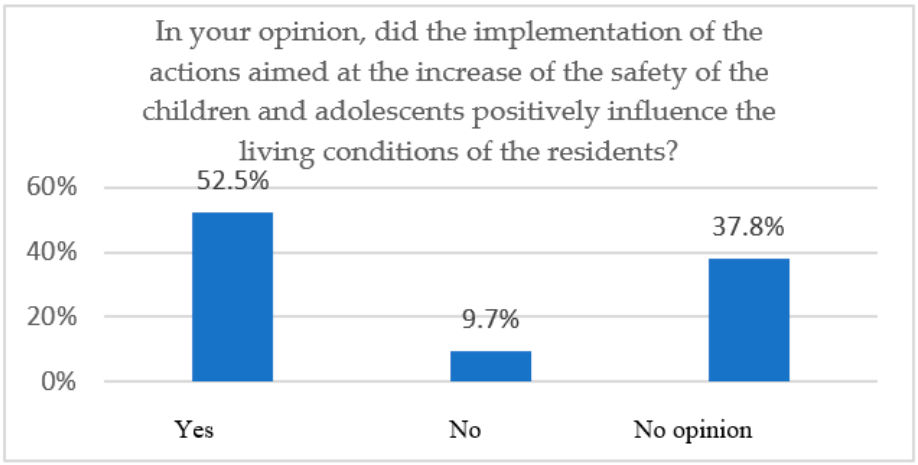

Figure 8. Percentage distributions of the responses to the question as to whether the implementation of the actions aimed at the increased safety of children and adolescents positively influenced the life conditions of the residents of Częstochowa.

In the next question, the research participants were asked whether the installation of carbon monoxide detectors and natural gas detectors in the public housing positively influenced the life conditions of the residents. The analysis of the responses indicated that the majority of the respondents (69.8%) agreed that introduction of such actions positively influenced their life conditions. Percentage distributions of the responses are shown in Figure 9.

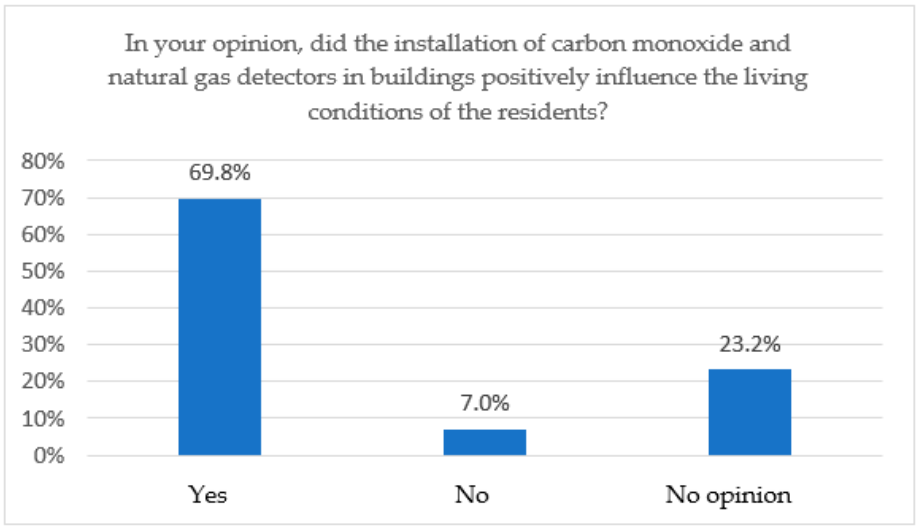

Figure 9. Percentage distributions of the responses to the question as to whether the installation of carbon monoxide and natural gas detectors in the public housing positively influenced the life conditions of the residents of Częstochowa.

The subsequent question asked whether the implementation of the actions aimed at the establishment of the green spaces in the area surrounding the public residential buildings positively influenced the life conditions of the residents. The responses showed that the

majority of the respondents reported that the establishment of green spaces surrounding their public residential buildings positively influenced their life conditions. Percentage distributions of the responses are shown in Figure 10.

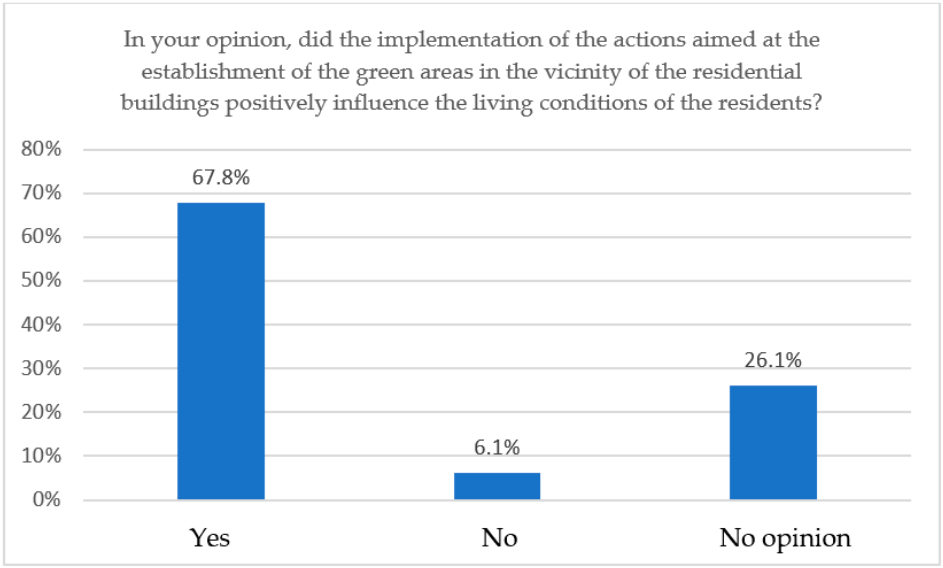

Figure 10. Percentage distributions as to whether the establishment of green spaces in the area surrounding the public residential buildings positively influenced the life conditions of the residents of Częstochowa.

The next question that was analyzed was whether the implementation of actions aimed at the organization of holidays and festivities for children living in the housing resource positively influenced the life conditions of the residents. The responses showed that the majority of the respondents (56.1%) said that such actions positively influenced their life conditions, 9.2% stated that such actions did not influence their conditions, and 34.7% did not have an opinion concerning that matter. Percentage distributions of the responses are shown in Figure 11.

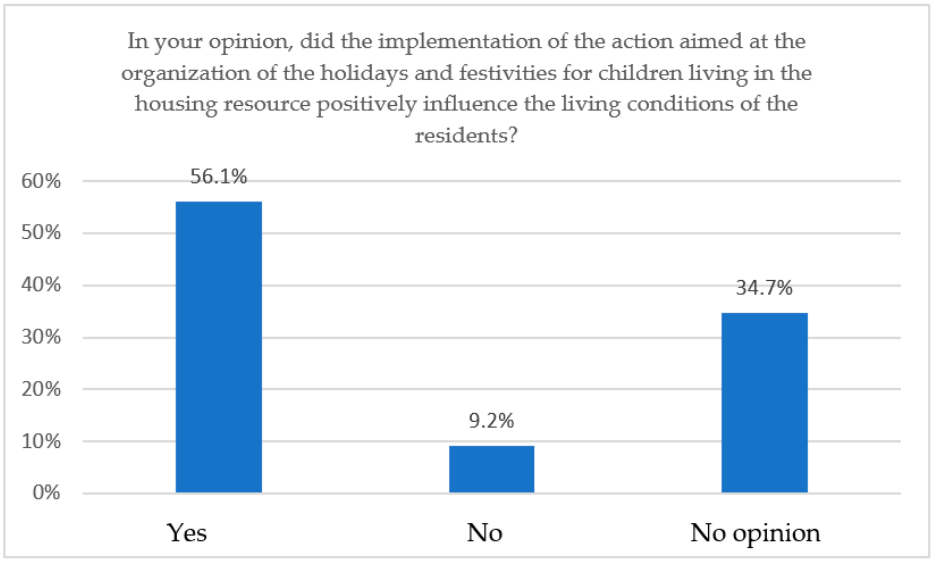

Figure 11. Percentage distributions of the responses to the question whether organization of the holidays and festivities for children living in the housing resource positively influenced the life conditions of the residents of Częstochowa.

The following question asked the participants whether organization of the so-called "Neighbour Days" positively influenced the life conditions of the residents. As it turned out, half of the respondents said that this action positively influenced their life conditions. Percentage distributions of the responses are shown in Figure 12.

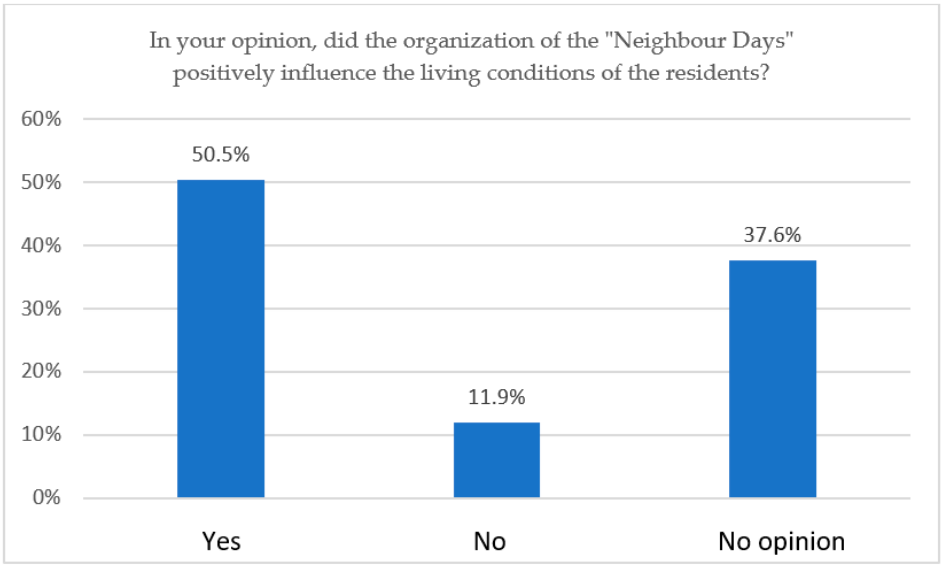

Figure 12. Percentage distributions of the responses to the question whether organization of "Neighbour Days" positively influenced the life conditions of the residents of Częstochowa.

The next question to analyze was the one about whether, according to the respondents, the implementation of the Tenants' Social Participation program positively influenced the life conditions of the residents. Returned responses allowed us to determine that similarly large groups of respondents said that this action positively influenced their life conditions or that they had no opinion on that matter. Percentage distributions of the responses are shown in Figure 13.

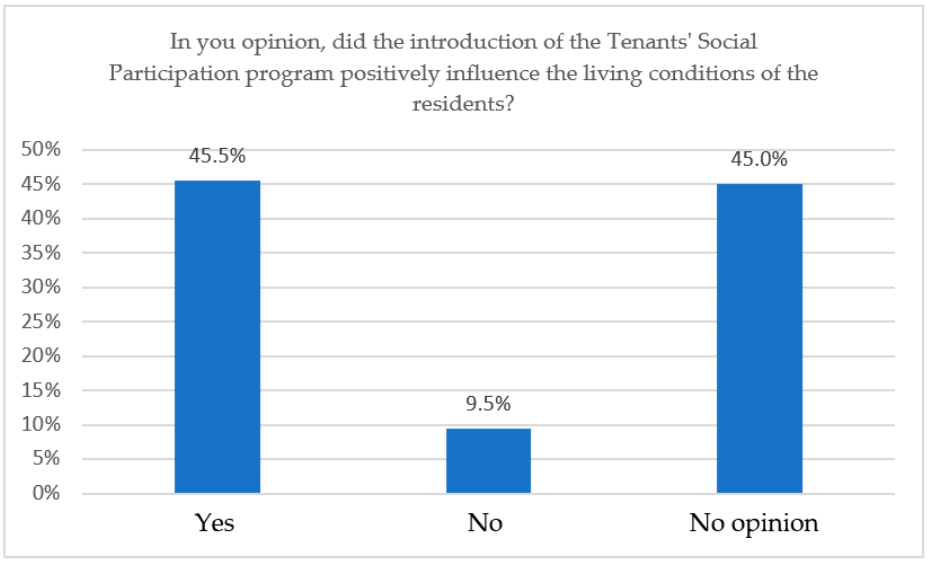

Figure 13. Percentage distribution of the responses to the question whether the implementation of the Tenants' Social Participation program positively influenced the life conditions of the residents of Częstochowa.

The next question that was analyzed was which of the innovative solutions introduced by Czestochowa influenced the improvement of the residents' living conditions to the largest degree. Analysis of the responses showed that the most commonly indicated solutions were the "Work for rent" program, the installation of carbon monoxide and natural gas detectors in the public housing apartments, and the apartment exchange digital browser. The program of Tenant's Social Participation in the management of the commune's housing resource and organization of the holidays or festivities for children were selected least often (Figure 14).

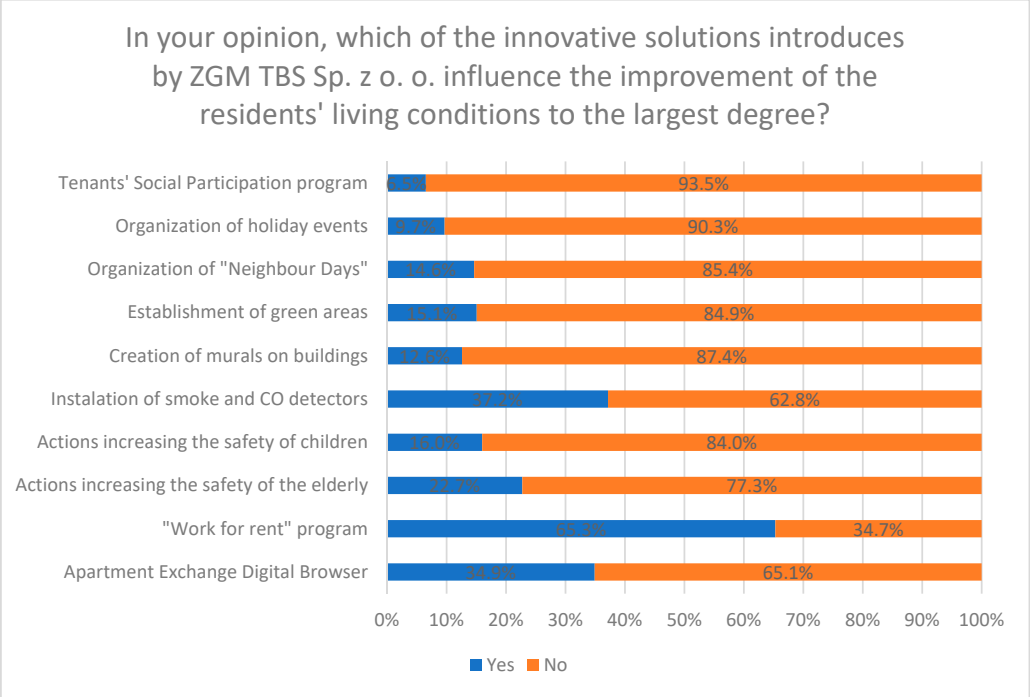

Figure 14. Percentage distributions of the responses about which of the innovative solutions introduced by Czestochowa influenced the improvement of the residents' living conditions to the largest degree.

Then, it was checked in which area of housing resource management, according to the residents, should the Częstochowa City Commune develop solutions that have already been implemented and introduce new innovations. Analysis of the responses showed that the areas of safety and security and the calculation and collection of liabilities were most commonly indicated, while participation and integration of the residents were the areas that wer selected least often. Percentage distributions of the responses are shown in Figure 15.

One of the last questions asked was whether, in the area surrounding the respondents' place of residence, there were green areas with garden equipment that allowed residents to spend leisure time there. Analysis of the responses indicated that a small majority of the residents had such areas in the vicinity of their place of residence. Percentage distributions of the responses are shown in Figure 16.

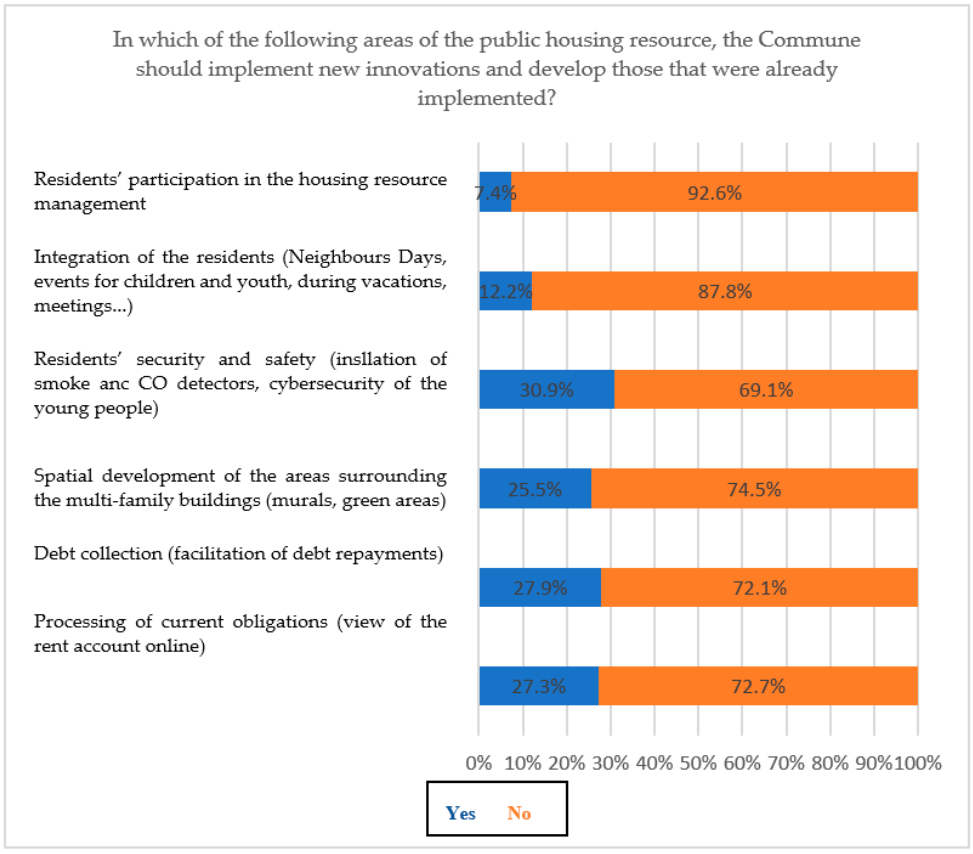

Figure 15. Percentage distributions of the responses about which of the areas of the public housing resource management should develop further.

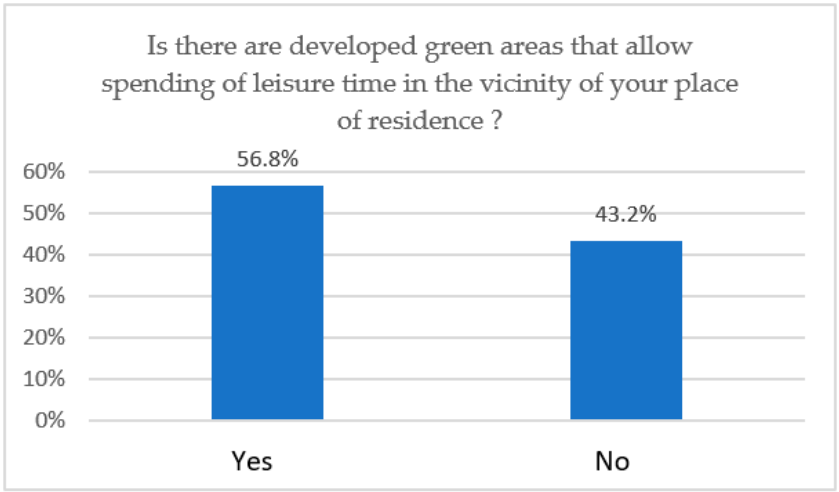

Figure 16. Percentage distributions of the responses to a question whether the respondents had developed green areas in the vicinity of their place of residence.

An additional analysis related to the three innovations considered to be the most important by the residents, i.e., being recognized as such by the highest number of survey participants—namely, the "Work for rent" program, the installation of the carbon monoxide and natural gas detectors in multi-family residential buildings, and the apartment exchange digital browser— showed that the "Work for rent" program was considered important by a similar percentage of respondents in each age group.

As for the age groups of the respondents who considered the installation of the carbon monoxide and natural gas detectors in multi-family residential buildings as important, this

was recognized by the respondents in the following age groups: 18–24 years, 25–39 years, and 40–59 years (between 31% and 36% of the respondents in the respective groups). Additionally, this particular action was recognized as important by a much larger portion of the age group of people over 60, where it was indicated by 47% of respondents.

When it comes to the apartment exchange digital browser, it needs to be pointed out that this innovation was recognized as important. In the age group of 18–24 years, more than 50% of respondents stated that this innovation was important and significantly improved living conditions of the public housing resources. In turn, survey participants aged 60 and more stated that the browser was not that important, as approx. 25% of respondents aged 60 and more did not see the need to use the apartment exchange digital browser. The smallest percentage of the people considering the latter innovation can be seen in the age groups of 60 and older. Among 115 respondents belonging to this group, only 24.35% considered said the innovation was necessary and able to improve their lives. In addition, in this particular age group, a large percentage of respondents considered their skills related to computer and mobile devices as low or very low.

Since older people consider their digital competences to be substandard, they did not use the discussed application. In reference to the education of the respondents, the "Work for rent" program and the installation of the carbon monoxide and natural gas detectors were especially recognized by people with secondary and technical education (36%/37%). The apartment exchange digital browser was considered important among people with a tertiary education (39%).

The data analysis also included the distribution of the quantitative variables. Do to so, basic descriptive statistics were calculated, along with the Shapiro–Wilk test to check the normality of the distribution. The results of the analysis are presented in Table 4.

Table 4. Basic descriptive statistics of the variables, complete with Shapiro–Wilk test.

Dependent Variable	M	Me	SD	Sk.	Kurt.	Min.	Max.	W	*p*
Satisfaction with apartment	2.91	4.00	1.67	−0.78	−0.78	0.00	5.00	0.81	<0.001
Satisfaction with quality of space	3.52	3.50	0.80	−0.04	−0.17	1.00	5.00	0.86	<0.001
Cooperation	3.89	4.00	0.78	−1.35	3.14	1.00	5.00	0.89	<0.001
Type of expected results	4.08	4.13	0.76	−1.79	4.92	1.00	5.00	0.84	<0.001

The results of the Shapiro–Wilk test in the case of all entered variables was proven to be statistically significant, which means that their distributions significantly deviated from normal distributions. It should be noted, however, that the skewness of the distribution for these variables did not exceed the absolute value of two, which means that their distributions were asymmetric, albeit very slightly so. Thus, it is rational to conduct the analysis based on the parametric tests, as long as all their specifications are met. The next step of the analysis was checking whether there was a relation between the socio-demographic variables, i.e., gender, age and education, and the satisfaction of the respondents with the apartment and their opinions concerning the areas of activity of the Częstochowa City Commune. To achieve that, a Student's *t*-test for the independent samples was conducted. The results of the test are presented in the Table 5.

Table 5. Comparison of men and women from the perspective of satisfaction with the apartment and opinion concerning the areas of activity of the municipality.

	Women (n = 218)		Men (n = 226)				95% CI		
Dependent Variable	**M**	**SD**	**M**	**SD**	***t***	***p***	**LL**	**UL**	**Cohen's d**
Satisfaction with apartment	2.75	1.84	3.07	1.48	−1.98	0.048	−0.63	0.00	0.19
Satisfaction with quality of space	3.52	0.80	3.51	0.80	0.19	0.852	−0.13	0.16	0.02
Cooperation	3.66	0.97	3.46	1.11	2.02	0.044	0.00	0.39	0.19
Type of expected results	4.17	0.68	3.99	0.82	2.55	0.011	0.04	0.32	0.24

Analysis showed a statistically significant gender difference in the area of the satisfaction with the apartment, quality of space, type of action, and type of the expected results. It was observed that women expressed significantly lower levels of satisfaction with the apartment and statistically better opinions of the type of action and type of expected results in comparison to men.

It was further examined whether there was a relationship between the age and education of the respondents and the study variables. For this purpose, a Spearman's rho correlation analysis was performed. The results are shown in Table 6.

Table 6. Correlation of age and education with satisfaction with housing and opinion on areas of municipal activity.

Variable		Age	Education
Satisfaction with the apartment	rho Spearmana	<0.01	−0.06
	relevance	0.916	0.202
Satisfaction with quality of space	rho Spearmana	−0.07	0.15
	relevance	0.154	0.002
Cooperation	rho Spearmana	<0.01	0.23
	relevance	0.863	<0.001
Local responsibility	rho Spearmana	0.01	0.07
	relevance	0.776	0.147
Type of action	rho Spearmana	−0.02	0.10
	relevance	0.687	0.043
Type of expected outcome	rho Spearmana	0.07	0.21
	istotność	0.124	<0.001

The analysis showed statistically significant positive relationships between education and satisfaction with the quality of space, opinion on undertaking cooperation, type of action, and type of expected effects. This means that, as the education of the respondents increased, their satisfaction with the quality of space increased, as well as their evaluation of undertaking cooperation, type of action, and type of expected effects on the municipality's activities. In addition, there was no significant relationship between the age of the respondents and the variables studied.

The next stage of the analysis was to see if there was a relationship between satisfaction with housing and satisfaction with the quality of the space and the undertaking of cooperation, local responsibility, type of action, type of expected outcomes. For this purpose, a Pearson's r correlation analysis was performed. The results are shown in Table 7.

Table 7. Correlation of satisfaction with housing and satisfaction with quality of space with undertaking cooperation, local responsibility, type of action, and type of expected outcomes.

Variable		Satisfaction with the Apartment	Satisfaction with Quality of Space
Cooperation	r Pearsona	0.04	0.25
	relevance	0.348	<0.001
Local responsibility	r Pearsona	0.13	0.31
	relevance	0.007	<0.001
Type of action	r Pearsona	0.08	0.28
	relevance	0.088	<0.001
Type of expected outcome	r Pearsona	0.15	0.22
	relevance	0.002	<0.001

The results obtained indicated statistically significant positive relationships between satisfaction with the quality of space and the evaluation of all areas of the municipality's activities, as well as between satisfaction with the dwelling and the opinion on local responsibility and type of expected effects. This means that, as satisfaction with the dwelling

increased, the evaluation of the municipality's activities in the area of local responsibility and the type of expected effects increased, and the evaluation of the municipality's activities in all its areas increased as satisfaction with the quality of space increased.

Next, it was examined whether there were relationships between the areas of municipal activity in the dimensions of undertaking cooperation, local responsibility, type of action, and type of expected effects. For this purpose, a Pearson's r correlation analysis was performed. The results are shown in Table 8.

Table 8. Correlation of undertaking cooperation, local responsibility, type of action, and type of results expected.

Variable		Cooperation	Local Responsibility	Type of Action	Type of Expected Outcome
Cooperation	r Pearsona relevance				
Local responsibility	r Pearsona relevance	0.64 <0.001			
Type of action	r Pearsona relevance	0.55 <0.001	0.66 <0.001		
Type of expected outcome	r Pearsona relevance	0.57 <0.001	0.69 <0.001	0.60 <0.001	

Performed analysis showed statistically significant, positive relationships between all analyzed variable pairs. It became evident that, with the increasing assessment of one aspect of the action of the municipality, the assessment of other analyzed aspects of action of the municipality also increased. It is also worth noting that all observed relations were strong ($r > 0.5$).

The final stage of the analysis was to test whether satisfaction with housing and space quality could be predicted on the basis of knowledge of the assessment of undertaking cooperation, local responsibility, type of action, and type of expected outcomes. For this purpose, two linear regression analyses were performed, where, in the first one, the explained variable was the level of satisfaction with housing, while, in the second one, the explained variable was the level of satisfaction with space quality. The results of the analyses are presented in Table 9.

Table 9. Regression models predicting satisfaction with housing and satisfaction with quality of space.

Explained Variable	Predicators	B	SE	Beta	*t*	*p*	R^2	F	*p*
Satisfaction with housing	(Constant)	1.64	0.49		3.39	0.001	0.03	3.12	0.015
	Cooperation	−0.19	0.14	−0.09	1.37	0.173			
	Local responsibility	0.22	0.17	0.10	1.31	0.192			
	Type of action	−0.03	0.11	−0.02	−0.30	0.768			
	Type of expected outcome	0.31	0.15	0.14	2.04	0.042			
Satisfaction with quality of space	(Constant)	2.23	0.22		10.05	<0.001	0.11	13.18	<0.001
	Cooperation	0.06	0.06	0.06	0.98	0.329			
	Local responsibility	0.21	0.08	0.20	2.77	0.006			
	Type of action	0.10	0.05	0.14	2.15	0.032			
	Type of expected outcome	−0.04	0.07	−0.04	−0.54	0.592			

The analysis showed that both tested models were statistically significant. It turned out that the model for satisfaction with housing predicted 4% of the variance, while the model for satisfaction with space quality explained 11% of the variance in this variable.

In the case of the model predicting satisfaction with the dwelling, a statistically significant predictor turned out to be the assessment of the type of effects expected. The

value of the standardized Beta coefficient indicated that satisfaction with the dwelling increased as the rating of expected outcomes increased.

For the model predicting satisfaction with quality of space, the statistically significant predictors turned out to be ratings of local responsibility and type of activity. The standardized Beta coefficient values indicated that, as the level of the indicated predictors increased, the satisfaction with space quality increased.

In summary of the performed analyses, it could be observed that the introduction of innovations is accepted by the residents and is perceived by them as contributing to the quality of life. It has also been noted that the largest number of research participants indicated that the implementation of the actions aimed at the creation of green areas surrounding the multi-family residential buildings and the "Work for rent" program influenced their life in a positive way. Residents of the public resources owned by Częstochowa City Commune are satisfied with their apartments, quality of space, and the effect actions taken by the Commune.

4. Discussion

The introduction of the innovation in the area of apartment management is a subject that has not yet been comprehensively discussed in the literature. Thus, there is a research gap in this area. The subject presented in this paper is a result of a review of the literature focusing on other aspects of public resource management. As mentioned earlier, academic papers discuss the management process in general terms, specifically focusing on real estate management [62], changing standards in building regulations [63], and housing insecurity through serial eviction requests [64] while omitting the process of the innovation implementation itself. There is also a lack of studies that would relate to the entire spectrum of social issues. This is why the authors of this paper attempted to present the practice of the implementation of innovations in public resource management and the resource residents' approval of such innovations.

The undertaken actions ensured that the public real estate was kept in adequate technical conditions and also positively influenced the safety of the resource's residents, thereby counteracting the possibility of carbon monoxide poisoning (installation of proper detectors). Innovative solutions influence the safety of the resource's residents, thus protecting the latter against criminal acts (with the elderly being especially vulnerable). Information campaigns, including radio announcements and published brochures, increase residents' awareness regarding the dangers they can meet in public places, while using public services, or even in their own apartments (e.g., 'grandson in need' or 'helpful policeman' confidence tricks). With regard to the contacts between the residents and the management of the public housing, it needs to be pointed out that the implemented innovative solutions facilitate such contacts, which is beneficial to both parties, as they allow all cases to be proceeded more quickly. It should be stressed that the residents can initiate contact with the authorities of the Commune and its employees during meetings with the residents of the resource on an occasion of, e.g., "Neighbour's Day". During such meetings, the residents can initiate a dialogue with the representatives of the company and present specific initiatives or a petition to disclose certain information. When it comes to the revenues resulting from the payments issued for the usage of the residential apartments, it should be noted that the introduced innovations influenced the punctuality and correctness of the payments. This influence was definitely positive, as it increased said punctuality and caused the payments to be issued in a correct amount and to a correct bank account. Such actions allowed the residents to pay their dues related to their subject obligations not only by direct payment, because they also could, after meeting specified conditions, work the overdue payments off in the framework of the aforementioned "Work for rent" program. Consequently, innovations related to the collection of payments related to apartment use allow people in disadvantageous financial, personal, or medical situations to leave the debt spiral, thus preventing social exclusion and even decreasing the number of people facing the risk of homelessness. All these factors result also in the decreased prevalence

of the debt recovery attempts made by the property managers in relation to the indebted residents, including the court proceedings resulting in debt collection and eviction, as well as the follow-up enforcement proceedings. In addition, these innovations result in a reduction of the financial resources managers need to allocate to debt collection activities, while allowing indebted residents to avoid the need to cover the court expenses, as the latter need to be covered by the party losing the court case. This way, abstaining from court execution proceeding on the property manager's part also allows the debtor to leave the debt spiral and counteracts their social exclusion and homelessness. Innovative actions implemented by real estate managers result in the adjustment of the apartments to the needs, as well as to the capabilities, of a specific resident or residents forming a homestead. This is because residents can switch apartments with other residents to adequately meet their need for living space or their financial capabilities. Consequently, the residents have an apartment they can actually afford and that is suited to their actual needs and expectations. Innovations implemented by the Commune also allowed the integration of the residents of the managed housing resource. This integration specifically involved older people living in public housing, who often suffer from loneliness and social exclusion. Thanks to events such as 'Neighbour's Day', the residents could integrate not only with the residents of the same building, but also with the local community, including the members of the housing cooperatives. Having all the above in mind, it goes without saying that the innovations implemented in public housing resource management increase the comfort and quality of life in the managed resource. This, in turn, improves the assessment of the actions taken by the managing entity as a part of its professional duties.

The activities of the Municipality of the City of Częstochowa include many initiatives of a local nature relating to investment, safety, the shaping of facilities for residents, and the organization of events to integrate tenants. The city's positive image and its sustainability depend first and foremost on constant innovative action. Internal projects, such as the shaping of residents' living conditions or the construction of an identity, have a long-term effect. Research has shown that, through consistent action in the area of local responsibility, residents' satisfaction with the quality of their space and their satisfaction with their homes increases.

Innovations introduced by the Częstochowa City Commune are related to many different aspects of the management of this resource. They include, e.g., ensuring the proper condition of the real estate, the adjustment of the real estate to environmental requirements, ensuring the energy efficiency of the buildings, or the utilization of uninhabited buildings and apartments. They are also related to the organizational aspects that include, e.g., contacts between the resident and administrator, the collection of rent, and debt recovery. Furthermore, the innovations implemented by Częstochowa include the issue of security of the residents of the managed real estate. In addition, the Commune's initiatives of an innovative character are more and more often related to the integration of the residents, including intergenerational integration. Consequently, the influence of innovations significantly influence the management of the public housing resource, from the perspective of both residents of the resource and the owner of the latter.

5. Conclusions and Implications

The analysis of the survey research results leads to conclusion that utilization of innovations in the public resource management make the management process more efficient. Analysis of the documents, Internet sources, and survey results make it possible to unambiguously state that the innovations increase the efficiency of public housing resource management. First and foremost, they allow for more effective utilization of the resource by, e.g., improvement of the substance and condition of the buildings. They also facilitate the process of contact between the resident and administrators via, e.g., e-mail. Implemented innovations are accepted and considered important by the residents of the public resource. All innovations were assessed by the survey participants as important. Respondents see the reason for the implementation of the innovations by the Częstochowa

City Commune that aim at the improvement of the quality of life of the residents of the public resource. Conducted empirical research provided a statistical confirmation of the presented hypotheses.

The results of the conducted research, as well as the determinations made in this paper, can have significant practical applications. They can be used by the administrators of public housing resources to verify the justifiability of the implementation of various innovations in the process of resource management, including the assessment of the influence of their implementation on the residents' living conditions. The above results cannot be considered exhaustive. The main limitations of this study are that the article deals with a specific case of public housing in Poland, which may not be of interest to a larger international audience [65]. Hence, it is necessary to carry out a broader diagnosis of the problem in question, including comparative analyses of housing policies applicable in various countries [66] while taking into account innovative forms of support for both the supply and demand sides of the social housing market [67].

It needs to be stressed that, in the future, it is also appropriate to conduct further research dedicated to the innovations that will be implemented in the process of public housing resource management. Taking into account the changes occurring in the resource, as well as the development of IT methods and technologies, and, due to demographic changes, increasing expectations, needs, and requirements of the residents, innovations should be systematically developed and introduced. This is why it is completely justified to systematically perform an analysis of this subject and assessing the influence of such innovation on the living conditions of the residents of the resource.

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