

# Local Nutrition Policy - The Best Local Practices for the Benefit of Society

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**Abstract** Introduction: Identify and highlight the problems and challenges associated with the implementation of solutions aimed at combating social marginalization of adult citizens with the use of regional food policy action plans and to define best practices used in attempts at addressing the problem. Methods: For the research, quarterly report data was collected and analysed (532 quarterly reports (from 2006-2016 were included), in total: 191 828 data). The reports were focused on the realisation of the 'State-Funded Food Aid Programme' in 2006-2016 in 14 cities from the Upper Silesia Metropolis. For the sake of benchmarking, the following proprietary indices were specially created and calculated: eligibility (E), non-eligibility (NE), receiving various forms of aid, i.e. free daily meal (M), monetary food benefit (MFB) and food benefit in kind (FBK) per 1,000 citizens for all citizens covered by the Food Aid Programme and per 1,000 adult citizens for all adult citizens covered by the Programme. Results: The number of hot meal recipients was directly proportionate to the unemployment rate ( $r=0,29$ ,  $p=0,31$ ) and inversely proportionate to a given city's expenditure per one citizen ( $r=-0,36$ ,  $p=0,2$ ). In cities with an unemployment rate below 10%,  $M < 3$ , whilst in cities with an unemployment rate  $>10\%$ ,  $M$  ranged from 0 to 25.9. Conclusions: Based on the benchmarking, guidelines have been created which should be taken under consideration during implementation and realisation of public health interventions.

**Keywords:** local nutrition policy, benchmarking, nutrition program, poverty, social exclusion

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## 1. Introduction

The food policy constitutes a component of a country's socio-economic policy. By forming the volume, quality, and availability of food products it has an impact on satisfying the society's food related needs (thus health related ones as well) [1]. Harmonizing the undertaken actions and implemented policies has two main purposes: socio-economic (consisting in ensuring food security) and health oriented (consisting in educating the society in terms of conscious consumer choices) [2].

Scientific papers list such main factors conditioning the manner of nutrition as: genetic conditions (non-modifiable), physiological learning, personal and interpersonal factors, as well as social, political, and economic conditions which impact individual food choices the most [1]. These conditions constitute the base for nutrition models and creating their cultural and social context, but also stand at the base of the idea to form and create food policies in reference to the entire population as well as specific social groups [3].

The transformation and post-transformation period constituted a great chance to improve the economic status of many households, but also a risk for the current existence of many families [4]. That is because during the

period of significant economic changes, the free market mechanism (along with all of its advantages - including a broader volume of available goods) has been introduced, at the simultaneous occurrence of so far not existing risks: joblessness, reduction of employment, and limiting the state's protective functions [4].

In the course of multiple debates and discussions it has been determined that the state is not completely free of interventions in the scope of the society's standard of living. However, superior interventions concerning fighting social inequalities and market failure have been excluded because such phenomena were regarded as occurring naturally within a market economy [5].

Disconcert was caused by new social phenomena (such as growing joblessness or an escalation of social inequalities), and the resultant of positive and negative outcomes resulted in social fragmentation on the base of material status and consumption level. The occurring polarization of incomes resulted in the development of poverty within Poland [4].

The spreading poverty became one of the main challenges. Due to the "Social Welfare Act" and retirement benefits for people fired from denationalized enterprises, efforts were made to mitigate the social outcomes of economic changes, at the same time developing the institutional frames of a social policy [6]. Apart from the unemployment benefit, support was also

granted in the form of nutrition - a free meal given out to the poor residents of Warsaw [7]. Relations and correlations between poverty and nutrition are well known for ages [8].

A measure which allows determining the relation between consumer choices and amount of income consists in the income elasticity of demand (consumption) coefficient [8]. Researchers conducted in these terms indicate that within groups with a lower material status the nutrition needs of people are not fully satisfied, which becomes the reason for malnutrition resulting from the worse quality of selected products [9].

It has been determined that poverty implies malnutrition [10]. In households with a lower economic status the nutrition needs are met as following ones in the hierarchy (after paying for rent, electricity, etc.) [11]. Although in Poland hunger does not occur in the literal sense, malnutrition due to an unbalanced diet is present. The daily food ration includes insufficient energy, protein, vitamins, and minerals [11]. As it is shown in researches concerning the dependency between a household's income and selecting food products, significant changes in terms of consumer choices take place as the income increases [12].

It has been determined that in households with lower incomes the diet is richer in products including a lot of animal fats and simple carbohydrates (included in white bread, flour, and potatoes), as well as milk and margarine [8]. Furthermore, poorer households often choose between the price and quality of a product. During the Social Diagnosis 2011 in many households of pensioners and people living off non-profit-making sources it has been declared that during the previous year they were unable to meet their nutrition needs for financial reasons [13]. That is why it is very important to improve the quality of inexpensive food bought by poor people, who due to their material condition take advantage of a diet less rich in nutrients and more monotonous (as a result more hazardous for the health) [2].

The problem of perceiving poverty is strongly conditioned by politics and opportunism. During the 90s of the 20th century, when Poland carried out the process of transformation relatively fast, a poor person was regarded as a unit not participating in working out the gross domestic product, meaning a person remaining jobless [4]. Because, in simple understanding, it has been assumed that a person who works will take advantage of the effects of work [4]. At the turn of the 20th and 21st century an economic slowdown took place at a simultaneous acceleration of economic and social reforms which resulted in a significant increase of the number of people living at the threshold of poverty or in poverty. That is also when the country decided to carry out actions having the character of direct interventions [4].

When undertaking systemic actions a debate broke out concerning the manner in which the policy of supporting the poor should be carried out so that it reaches people actually in need of support and so that the support is sufficient. At the same time, so that people taking advantage of it would not become dependent on the support system - which might instigate an internalization of a restitutionary and claimant attitude [4]. A different problem consists in decentralizing the state's responsibility

and conveying tasks concerning nutrition to local government units as those which are located closest to the citizens in need [14]. A golden mean in these terms consists in the essence of the subsidiary principle: "As much society as possible, as much state as necessary" [15].

The problem of determining poverty measures is very difficult from a methodological point of view because: poor people reluctantly admit their material situation, the measure of poverty is subjective as well as perceived on the base of a social or cultural reference, and therefore it is also strongly relative.

Although, in the Silesian voivodeship the level of poverty is one of the lowest in the country. In 2014, 5% of its residents (215 thousand people) lived below the minimal living wage, whereas in the Warmian-Masurian voivodeship it was 15% (almost 214 thousand people). The main reason for Silesia's poverty consists in the lack of work as well as working on low positions, numerousness, low education, disability, as well as a large number of people at old age who receive low pensions.

The problem of joblessness in Silesia is heavily impacted by the economic changes of the turn of the 20th and 21st century. During the period of real socialism Silesia remained the country's industrial background. It was there that vast numbers of work positions were available in mines, power plants, and steelworks. Since the 80s of the 20th century up until 1995 the Katowice voivodeship was leading when it came to GDP production. In the 90s of the 20th century this trend was completely reversed due to restructuring the regional economy and space. Restructuring was related to ending heavy industry which translated directly into terminating workplaces. It has to be remembered that at the beginning of the 90s, the heavy industry employed 55.2% of the working people.

Despite reparative programs and mitigating the results of restructuring actions, a great Silesian problem at the beginning of the 21st century consisted in joblessness, which often deprived entire families of financial resources. It was best seen in the worker's neighborhoods of Bytom (Bobrek, Karb, Miechowice), Chorzow (Chorzów Stary, Chorzów Batory), and Katowice (Szopienice, Dąbrówka Mała, Janów). Direct results of joblessness consist in poverty, frustration, and social marginalization.

Wanting to counteract the negative phenomena, 14 cities from the Silesia-Dąbrowa region formed the Metropolitan Association of Upper Silesia (Górnośląski Związek Metropolitalny [GZM]) in 2007. It included: Bytom, Chorzów, Gliwice, Katowice, Mysłowice, Jaworzno (a member of GZM since 2016), Piekary Śląskie, Ruda Śląska, Siemianowice Śląskie, Świętochłowice, Tychy, Zabrze, as well as Dąbrowa Górnicza and Sosnowiec.

The main goal of GZM was to create a dynamic, large-city complex able to compete with other metropolitan centers in the country and Europe. That goal was supposed to be achieved by determining a mutual strategy for the development of the cities - members, as well as creating a fixed positive image of the Metropolis. Primarily, the main reason for the integration consisted in economic issues - GZM as a large stakeholder was supposed to acquire resources from national, European, and global funds to execute shared undertakings. The expected effects of GZM's operation consisted in improving the

efficiency of managing the agglomeration, increasing the economic power and competitiveness of member cities, as well as promotional activities and ones emphasizing the values and meaning of the entire region. Currently circa 2.3 million people live in GZM, who collectively work out approximately 8% of the GDP. On July 1st 2017 GZM has been transformed into the Silesia-Zagłębie Metropolis which was made possible by the Upper Silesia Metropolis (USM) act of March 9th 2017.

The long-standing State-Funded Food Aid Programme (hereinafter referred to as the SFFAP) is executed since 2006 until now. Its first edition was executed between 2006 and 2013 (divided into two stages: 2006-2009 and 2010-2013, because a change was made in an act related to executing budget expenses). The following edition began in 2014 and is planned until 2020 [16,17,18].

The superior objective of SFFAP is to support communes in executing own tasks of a mandatory character concerning providing a hot meal (or an equivalent) for those who need it, especially taking into consideration people from rural areas and regions including a high rate of joblessness. Additionally the decision to provide support in terms of SFFAP should be made based on verifying documents presented by people in need, respecting their dignity and privacy [16,17].

At the same time, the provided support intends to improve the standard of living for people and families with a low income, as well as their health condition. The goals include also the formation of proper eating habits [18,19]. During its first edition (2006-2013) attention has also been directed at the need to develop the feeding base, but this goal is not continued during the current SFFAP [18,19].

The estimated forms of support are identical in both editions of SFFAP and include: providing a meal, designated benefit for purchasing a meal or food, or a benefit in kind in the form of food products. However, as it was emphasized in the contents of the act forming SFFAP, its principle consists in providing a meal, with the possibility to provide the benefit in a different form only in justified cases [19].

In the act bringing to life the second edition of SFFAP for the years 2014-2020, it has been emphasized that the main measure for the efficiency of SFFAP will consist in the number of its recipients. It is estimated that circa 2 million people should be provided support, including 1.1 million children and 0.9 million adults [19].

Benchmarking, originally used in levelling, has become a very broad term, crucial in strategic management. It consists in learning from the best through the identification of the most effective methods of a given organization's or enterprise's functioning, selected based on their efficiency (achieved results) and comparison [20]. From the point of view of social policies, benchmarking also allows to effectively seek and identify the 'best practices' [21]. Importantly, its goal is not mere imitation of practices, but identifying factors which have an impact on the final outcomes of actions taken [22].

Benchmarking has been applied in the public sector and recommended as a method to be implemented at all engagement levels: global (e.g. EU), national and local (its universal primary goal is to aid policy- or strategy-making) [23]. An example of benchmarking used at the

international level in the social domain is 'an open method of coordination based on the benchmarking of national initiatives' adopted at the meeting of the European Council in Lisbon in 2000. This is aimed at 'learning by all', to facilitate the development of knowledge-based economy, whilst ensuring greater social coherence and integrity and a high employment rate [24]. The first area where the open method of coordination was implemented was the combat against poverty and social exclusion, with national action plans developed for counteracting these problems (in 2000 in Nice, the European Council obligated the member states to develop relevant documents based on jointly agreed goals and measures) [25]. So far, however, there has been a lack of reports on the use of benchmarking in the implemented nutrition policy.

Policy benchmarking is a complex process. It is a mechanism in which all stakeholders learn from one another by creating a platform for the exchange of opinions, attitudes and experiences (throughout the entire action process, from its implementation to evaluation), between decision makers, experts and stakeholders [26].

Policy benchmarking should be aimed at actively searching for best practices, not as mere models for imitation, but as guidelines for taking adequate actions aimed at providing effective assistance to the large numbers of the most deprived or socially marginalised citizens.

Social exclusion affects people in various life circumstances, including the homeless, unemployed, poorly educated, chronically ill or disabled. In Poland, the provision of necessary aid in such cases is the responsibility of social aid centres run and financed by local authorities, and it includes e.g. the provision of one hot meal daily or its financial equivalent to those unable to provide for themselves.

Special attention should be paid therefore to the quality of such forms of aid to ensure their role as a well-planned investment in the wellbeing of its recipients rather than being reduced to mere compliance with statutory obligations imposed by the state on local authorities .

Thus, an important objective was to use benchmarking for the evaluation of the state's food policy for those socially marginalised due to poverty.

## 2. Methods

To obtain necessary data, a study was performed to investigate the needs of socially marginalised citizens. The benchmarking procedure was applied to the sole existing country-wide action plan, titled 'State-Funded Food Aid Programme', implemented e.g. in the Upper Silesia Metropolis (USM) (14 municipalities). The statistics covering the entire period since the Programme's launch in 2006 until 2016 were analysed, allowing for a thorough analysis and evaluation of the measures implemented.

Data included in quarterly reports (38 quarterly reports for each of the municipalities, 532 reports in total) were collected and analysed, regarding the execution of the State-Funded Food Aid Programme (hereinafter referred to as the SFFAP) (only reports for the 4<sup>th</sup> quarter are currently available for 2006 and 2007, as the remaining data have already been archived).

**Table 1. Population in the analysed period in the municipalities covered by the study**

	2006	2007	2008	2009	2010	2011	2012	201	2014	2015	2016
A	186 540	184 765	183 829	182 749	177 266	176 106	174 724	173 439	172 306	170 761	169 617
B	113 978	113 678	113 314	113 007	111 843	111 536	111 168	110 761	110 337	109 757	109 398
C	129 559	128 795	128 315	127 686	126 079	125 475	124 701	123 994	123 376	122 712	121 802
D	198 499	197 393	196 669	196 167	187 830	186 868	186 210	185 450	184 415	183 392	182 156
E	95 771	95 520	95 228	95 036	94 831	94 580	94 305	93 708	93 331	92 847	92 473
F	314 500	312 201	309 621	308 548	311 421	309 304	307 233	304 362	301 834	299 910	298 111
G	75 063	74 912	74 998	74 893	75 501	75 428	75 305	75 129	75 037	74 851	74 592
H	59 338	59 061	58 832	58 519	58 022	57 745	57 502	57 148	56 755	56 374	55 954
I	145 471	144 584	143 930	143 394	143 566	143 024	142 346	141 521	140 669	139 844	139 125
J	72 247	71 621	71 118	70 712	70 296	69 992	69 539	68 844	68 634	68 231	67 905
K	224 244	222 586	221 259	219 300	216 961	215 262	213 513	211 275	209 274	207 381	205 873
L	54 938	54 525	54 360	54 091	53 304	52 813	52 372	51 824	51 494	50 970	50 644
M	130 492	129 776	129 475	129 449	129 507	129 322	129 112	128 799	128 621	128 444	128 351
N	190 110	189 062	188 401	187 674	181 399	180 332	179 452	178 357	177 188	176 327	175 459

Table 1 shows the number of citizens in the studied municipalities in the analysed period. Names of towns/cities have been coded with successive alphabet letters.

The reports provided cumulative data. To obtain quarterly data, the differences between the successive quarters in a given year were calculated. The data were compared for adult citizens and all aid recipients overall.

Based on the quarterly data, mean values were calculated for the each year. Absolute values of the analysed variables and the percentages for given municipalities and accounting periods were analysed. To estimate the prevalence of given benefits provided under the SFFAP, mean annual values for each of the municipalities were calculated and joint evaluation was performed.

For the sake of benchmarking the following proprietary indices were specially created and calculated: eligibility (E), non-eligibility (NE), receiving various forms of aid, i.e. free daily meal (M), monetary food benefit (MFB) and food benefit in kind (FBK) per 1.000 citizens for all citizens covered by the SFFAP (indices marked with 'o' for 'overall') and per 1.000 adult citizens for all adult citizens covered by the SFFAP (indices marked with 'a' for 'adults').

The raw values of E, NE, M, MFB and FBK indices were calculated with the following formula:

$$index = \frac{\text{number of events}}{\text{number of citizens}} \cdot 1000$$

The amount of money spent per one citizen was calculated with the following formula:

$$amount = \frac{\text{overall cost}}{\text{number of citizens}}$$

The data regarding the number of citizens, unemployment rate and expenditure of given municipalities per 1 citizen in a given statistical year for the selected municipalities were obtained from the Local Data Bank of the Central Statistical Office of Poland in Warsaw according to the status on 31.12.2016 [27].

The statistical analyses were performed with MS Excel, MS Office 2013 and Statistica 12.0 (Stat Soft Polska) software.

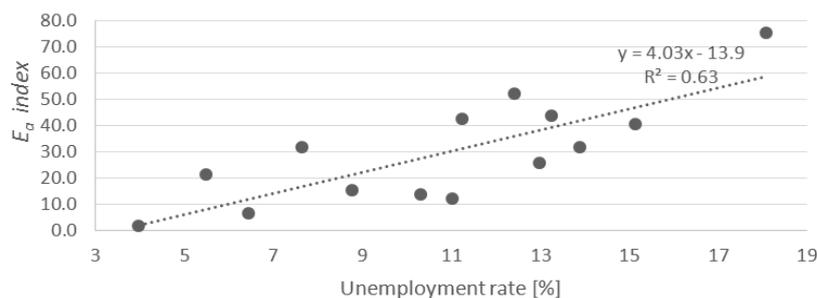
To estimate changes over time, geometric means were analysed. The trend of the studied time series was assessed with type II regression analysis. Pearson's and Spearman's correlation coefficients were used to analyse the correlations between the socioeconomic indicators such as the unemployment rate and expenditure of a given municipality per 1 citizen. Shapiro-Wilk test was used to test normal distribution. The statistical significance threshold was set at  $p < 0.05$ .

### 3. Results

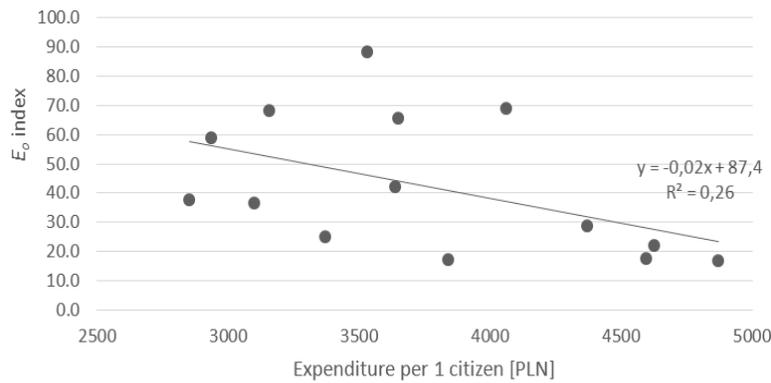
The relative overall number of citizens covered by the SFFAP (by 6.0% on average) as well as the relative number of adult citizens covered by the SFFAP (by 5.8% on average) decreased over the studied period.

Differences in the value of the  $E_o$  and  $E_a$  indices in various municipalities were noted. The values of these indices were significantly higher in municipalities with higher unemployment rates.

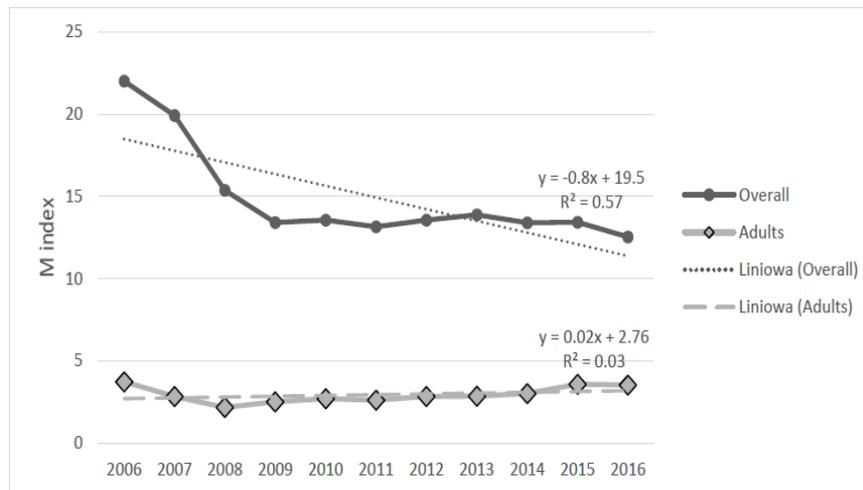
The values of  $E_a$  were directly proportionate to the unemployment rate ( $r=0.79$ ,  $p<0.01$ , Figure 1). An inversely proportionate correlation was identified between  $E_o$  and expenditures of given municipalities ( $r=0.48$ ,  $p=0.08$ , Figure 2).



**Figure 1.** The correlation between the unemployment rate and the  $E_a$  index ( $E_a$ - benchmarking index- eligibility per 1,000 adult citizens for all adult citizens covered by the 'State-Funded Food Aid Programme')



**Figure 2.** The correlation between expenditure per 1 citizen and E<sub>o</sub> index (E<sub>o</sub>- benchmarking index- eligibility per 1,000 citizens for all citizens covered by the ‘State-Funded Food Aid Programme’)



**Figure 3.** M<sub>o</sub> and M<sub>a</sub> index (N/1000 citizens) (M index- benchmarking index- free daily meal; M<sub>o</sub> - per 1,000 citizens for all citizens covered by the ‘State-Funded Food Aid Programme’; M<sub>a</sub> - per 1,000 adult citizens for all adult citizens covered by the ‘State-Funded Food Aid Programme’)

NE<sub>o</sub> and NE<sub>a</sub> varied. M<sub>o</sub> was found to decrease (by 5.3% on a yearly average), whilst M<sub>a</sub> index remained stable (Figure 3).

The values of M<sub>o</sub> and M<sub>a</sub> were found to be significantly higher in municipalities with higher unemployment rates. M<sub>a</sub> index was directly proportionate to the unemployment rate ( $r=0.29$ ,  $p=0.31$ ). An inversely proportionate correlation was identified between M<sub>o</sub> and expenditure per 1 citizen ( $r=-0.36$ ,  $p=0.2$ ).

Significant differences were identified in the cost of 1 meal in given municipalities. The highest price of 1 meal for an adult person was 4.38 times higher than the price of the respective meal in the municipality which complied with the minimal cost of the meal.

A strong statistical correlation was identified between the overall number of citizens receiving a daily hot meal and its cost (Table II). The higher cost of a single meal was associated with the higher number of citizens receiving all-day food plan or full lunch. Where a given municipality more frequently provided aid in the form of one hot meal or ‘milk and sandwich’ package, the cost of a single meal was lower.

The overall number of citizens receiving a monetary food benefit (by 5.8% on yearly average) was found to have decreased over the studied period. The same trend was also demonstrated for adult citizens (by 6.3% on yearly average).

**Table 2.** The correlation between the cost of aid spent on the execution of the SFFAP and the number of citizens receiving a meal, including the type of the meal [PLN] (p value less than 0.05 is significant)

Cost of a single meal [PLN] vs	Correlation coefficient R	p-value
<b>Overall</b>		
Meal - overall	0.25	0.38
All-day food plan	0.50	0.08
Full lunch	0.34	0.24
Hot meal	-0.27	0.35
‘Milk and sandwich’ package	-0.30	0.30
<b>Adults</b>		
Meal - overall	-0.41	0.15
All-day food plan	0.30	0.29
Full lunch	0.16	0.59
Hot meal	-0.53	0.05
‘Milk and sandwich’ package	-0.22	0.44

MFB<sub>o</sub> and MFB<sub>a</sub> were significantly higher in municipalities with higher unemployment rates.

MFB<sub>o</sub> was directly proportionate to the unemployment rate ( $r=0.78$ ,  $p<0.01$ ). Also, an inversely proportionate correlation was noted between MFB<sub>o</sub> and the expenditure of a given municipality per citizens ( $r=-0.49$ ,  $p=0.08$ ).

MFB is supposed to be the monetary or cash equivalent of a single daily hot meal. The study showed significant

differences between the amounts of money paid out by different cities as MFB to the eligible citizens. The amount of money paid out as the equivalent of a daily hot meal by the city which provided the highest amount of monetary food benefit was as much as 24 times higher than the relevant amount of money paid out by the city which provided the lowest amount.

Over the studied period, an increase in the mean annual amount paid out as MFB was noted, by 5.9% on yearly average.

The overall number of recipients of MFB was found to have decreases (by 24.0% on yearly average), as did the number of adult citizens provided with this benefit (by 25.9% on yearly average). Differences in FBK were noted. Only 4 municipalities provided this type of aid, and only in two municipalities such measures were executed on a regular basis. A similar tendency was shown considering the population of adult citizens only.

Over the studied period, the amount of money spent per 1 citizen covered by the SFFAP increased (by 0.8% on yearly average). The overall cost of the SFFAP was found to have correlated with the number SFFAP recipients ( $r=0.86$ ,  $p<0.001$ ).

The amounts of money spent per 1 citizen were shown to differ between given municipalities. Significantly higher relative amounts were spent by municipalities where the unemployment rate  $>10\%$ .

The values of the relative amount spent on the SFFAP were directly proportionate to the unemployment rate ( $r=0.47$ ,  $p=0.09$ ). An inversely proportionate correlation was identified between the value of the relative amount and a given municipality's expenditure per one citizen ( $r=-0.41$ ,  $p=0.14$ ).

## 4. Discussion

Benchmarking has so far been utilised in health and employment policies. Our study has been an attempt to employ it for the comprehensive evaluation of state-funded food policy for the socially excluded or marginalised citizens, as no data regarding its use for shaping food policy have been found in the literature. Persons socially marginalised are a particularly sensitive citizen group due to their poverty, in need of quality aid. In terms of food policy, the aid is provided in the form of the sole country-wide State-Funded Food Aid Programme. Our study has used benchmarking to evaluate the SFFAP and identify the most effective practices.

One of the first and most important steps in benchmarking involves the selection of relevant benchmarks or indices allowing to identify and define the best practices used. In social policies, the selection of benchmarks is particularly challenging, as frequently it is qualitative variables, difficult to measure, that prove to be the key factors [28].

Proprietary benchmarks have been specially created for this study, i.e. the raw values of eligibility (E) and non-eligibility (NE) indices, as well as receiving various forms of aid, such as meal (M), monetary food benefit (MNF) and food benefit in kind (FBK). The indices were additionally marked as 'o' for the overall number of citizens and calculated per 1.000 citizens, and as 'a' for

adult citizens and calculated per 1.000 adult citizens, respectively.

The benchmarks created in this way allowed to compare the collected data and evaluate the implementation of food policy addressing the most deprived citizens.

As a result, it has been found that the number of the adult recipients of the SFFAP is directly proportionate to the unemployment rate and inversely proportionate to the expenditure of a given municipality per 1 citizen. Hence, while planning future interventions of a similar kind, the unemployment rate and each city's budget should be considered.

The initial step is to define the recipients group. The selection of the target group to be covered by any food aid programme is a highly complex issue [29]. The SFFAP covers also adult citizens. In our study, eligibility (E) and non-eligibility (NE) indices were applied (both calculated per 1.000 citizens for the overall number of citizens covered by the SFFAP) and compared with the unemployment rate and a given municipality's expenditure per 1 citizen. The exact number of citizens who should be covered by the programme (the extent of the intervention needed) is hard to determine. The key objective is to extend the aid to all those in actual need and ensure that adequate aid is in fact provided.

The study has demonstrated the correlation of the number of food aid recipients with the unemployment rate. Higher E values were noted in the municipalities where the unemployment rate  $>10\%$ . The highest E value was noted in 2006, i.e. 116 eligible adult citizens per 1.000 adult citizens, compared with the lowest E value in the same period of time of 2:1.000 adult citizens.

Based on E values in the studied municipalities, it may be assumed that the decreasing unemployment rate results with an improvement of citizens' financial situation, eliminating their need for such forms of assistance. Also a report by the Supreme Audit Office stated the improvement of the financial situation of some families, no longer the income test, as the reason behind the reduced number of the programme's recipients [30]. It is hard to define an improvement in the citizens' standard of living, hence municipalities find it difficult to estimate the number of citizens in need of assistance, as well as estimating the extent of the necessary aid [31]. Nonetheless, as stressed by the Supreme Audit Office, the decline in the number of the programme's recipients is not merely associated with an improving social situation, but, sadly, is in many instances due to a number of other reasons. These include the lack of adequate collaboration of local and school authorities (in respect of food aid for children that may be provided under special circumstances without a need for a relevant administrative decision), failure on the part of social aid centres to initiate ex officio administrative proceedings aimed at granting relevant aid (waiting instead for a relevant application to be submitted by the person in question) and failure on the part of local authorities to apply the amended income test (whereby the former statutory eligibility criterion regarding the maximum income per person in the family has been raised to 150%) when granting relevant aid [32]. Also, the number of aid recipients is decreasing due to the fact that local authorities fail to identify the actual needs in that

respect accurately [31]. Another problem is a lack of relevant information for the potential recipients of the aid in question who remain unaware of the available forms of assistance [33]. The challenge is to develop an effective system of aid provision without compromising the dignity of those affected by food insecurity, implementing transparent procedures enabling help that is both discreet and efficient.

The next step in developing nutrition policy is deciding the form of aid to be provided. It should be stressed here, that the SFFAP has been the sole existing programme facilitating the provision of aid not only in cash (in the form of the monetary food benefit) as was frequently the case prior to its implementation, or in-kind assistance (as offered under the programme run by the Fund for European Aid to the Most Deprived, FEAD, formerly known as PEAD), but also in the form of a daily hot meal.

To facilitate comparisons between the studied municipalities, other proprietary indices in this study included the number of citizens provided with a meal (M), the number of citizens provided with a monetary food benefit (MFB) and the number of citizens provided with a food benefit in kind (FBK), all respectively calculated per 1.000 citizens or 1.000 adult citizens.

As demonstrated in our study, the number of citizens receiving aid in the form of a daily hot meal was directly proportionate to the unemployment rate and inversely proportionate to the given municipality's expenditure. In the municipalities with an unemployment rate below 10%,  $M_a \leq 3$ , whilst in the municipalities with an unemployment rate over 10% in the period of 2006-2016,  $M_a$  ranged from 0 to 25.9.

The provision of a hot meal (on average 79% of all adult recipients of aid) was the most popular form of aid for adult citizens in the municipalities covered by our study. Full lunch was provided to approx. 16% of adult aid recipients, whilst all-day food plan – to 5%.

It has been found that the cost of the hot meal provided by local authorities differed depending on a given municipality (even in the case of neighbouring towns/cities). The price of the meal, as demonstrated by the results of our study, is the result of multiple factors, including the requirements set out in public procurements and the capability of the executing entities. The differences in the price of the meal provided even though accounted for, hardly seem justifiable.

The analysis of the obtained results has confirmed that in the municipalities currently forming the Upper Silesia Metropolis the monetary food benefit was significantly more frequently provided than other forms of aid. MFB<sub>a</sub> in municipalities with an unemployment rate of 10% ranged from 7.4 to 114.4, which is significantly higher than the value of  $M_a$ .

Both monetary benefits and benefits in kind were found to be inadequate and as such to fail to serve their purpose [33,34]. It is not only the bodies supervising the execution of the SFFAP, such as the Supreme Audit Office, but also the executing entities themselves that see its numerous shortcomings. Social services employees have pointed out that aid paid out in cash falls short of the actual needs and is based on a falsely pragmatic approach. In their opinion,

despite the existence of a multitude of relevant regulations, there is a lack of comprehensive support for those affected by poverty and food insecurity [35].

In our study, in-kind aid has also been demonstrated to be extremely sporadic, with as few as 4 municipalities having pursued this form of aid provision. The FBK<sub>a</sub> index created for the sake of benchmarking in this study ranged from 0 to 1.8 in the period of 2006-2016. Similar conclusions may be found in the reports issued by the Supreme Audit Office [30-34]. Ironically, this may be due to the overlapping of food aid programmes. Deprived citizens may receive aid in the form of food products under the FEAD programme provided through the Food Banks network, thus their needs are often considered to have been met. On the other hand, it must be stressed that municipalities do not have the storage facilities necessary to offer this type of help and the arrangements concerning the purchase of the relevant food products and their distribution are also perceived as problematic. The food benefit in kind offered under the SFFAP is in fact provided in the form of food vouchers to be used in designated stores, which seems to be a convenient solution for the local authorities and the recipients of the programme alike.

The costs of the programme's execution account for a substantial portion of the costs of the state's social welfare policy (25% in 2006-2009, with the SFFAP being the most common initiative executed under the social welfare policy) [36].

Even though, as demonstrated in our study, the number of the recipients of aid provided under the SFFAP decreased systematically, the costs of the programme's execution increased.

Also the evaluation of the programme's effectiveness seems less than satisfactory, as reports concerning its execution contain evident mistakes, undermining the value of the evaluation in general (both over time and at a national level) [32].

The indices created for the sake of benchmarking in our study have, on the other hand, facilitated a comparative analysis of the execution of food aid policy by the municipalities implementing the SFFAP in the Upper Silesia Metropolis.

## 5. Conclusions

Based on the analyses performed for this study, the following conclusions may be offered:

1. The applied benchmarking procedure and the indices created for the in-depth analysis have allowed to compare the execution of the State-Funded Food Aid Programme by the municipalities of the Upper Silesia Metropolis and to identify the existing problems and shortcomings, such as difficulties in estimating the actual number of citizens in need of aid, finding relevant executing entities, etc.
2. Benchmarking and the suggested indices have proven an effective tool for the assessment of this type of public health interventions, warranting further implementation in nutrition policy.

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