

Local initiatives for green space using Poland's Village Fund: evidence from Lodzkie voivodeship

Marcin Feltynowski

University of Łódź, Faculty of Economics and Sociology, POW Street 3/5, Łódź, Poland, e-mail: marcin.feltynowski@uni.lodz.pl,
<https://orcid.org/0000-0003-4919-2851>

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Abstract. Poland's Village Fund (Fundusz Sołecki) is an instrument operating at the level of the so-called sołectwo, into which local-administration units known as gminas may be further sub-divided. These are therefore auxiliary administrative units in rural areas whose receipt of means from the Fund in question allows for the activation of local communities. Against that background, the research detailed here sought to examine Village Fund by reference to the greenspace-related projects pursued using it in the rural gminas of Łódzkie Voivodeship. Additional aspects are the classification of the tasks carried out, presentation of the statistical analysis applied, and consideration of the breakdown obtained for indicators relating to the share of funds allocated to green areas – by reference to the properties of the normal distribution curve.

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1. Introduction

Local development is to be understood as the purposeful management of resources with a view to the quality of life of inhabitants being raised (Neil and Tykkyläinen, 1998; OECD, 2001). A major fundament of this process is provided by bottom-up initiatives pursued under the supervision of local authorities. A solution of this kind applied in Poland is Fundusz Sołecki – here translated as “the Village Fund” – providing for action in the name of a local community that is developed and then taken by that community. Initiatives arising out of the Village Fund fall within the definition of local development as applied by the OECD (2001), wherein emphasis is placed on the strengthened participation of local people, by way of bottom-up initiatives in particular (Bernaciak, Rzeńca and Sobol, 2017). The espousal of this kind of approach gains further confirmation in the subject literature, with authors noting the need to bring local people into the process by which development takes place in the different areas of operation of units of local-government administration (Rorat and Tabor, 2014; Mickiewicz and Mickiewicz, 2016; Zajda et al., 2017; Karampela and Kizos, 2018). In the Polish case, such units – of which there are 2478 – are known as gminas.

The community-led local development approach began to gain implementation in practice in the early 1990s when the European Union brought in its LEADER Programme – as followed by later initiatives of a similar kind. Thanks to this, the inclusion of communities resident in different auxiliary units of administration, into actions mounted at the local level, allowed for inhabitants’ integration; while the projects pursued encouraged a better understanding of processes linking up with local development (Zhang and Liao, 2011; Bernaciak and Kopczyński, 2019; Park and Krueger, 2019; Lesniewska-Napierala and Napierala, 2020). In Poland, the activity of the kind under consideration here is also provided for by tasks coming within the framework of Poland’s Village Fund, which takes in undertakings categorised strategically as “gmina-own”. The Fund has as its overriding objective the achievement of improvement in inhabitants’ quality of life.

Work to study the behaviour of the inhabitants of Poland’s rural gminas as they utilise the Village

Fund remains in its infancy, given that the subject matter of local communities being activated using this kind of instrument is only available for analysis from 2009 onwards. Research that has been or is being carried out matches the topic of participatory budgeting, which has undoubtedly been appearing in both the Polish and foreign subject literature (Szescilo, 2015; Gilman, 2016; Bernaciak, Rzeńca and Sobol, 2017, 2018).

The work underpinning the present article has been a wide-ranging data search through spending engaged in by the rural gminas within the Polish province-region centred around the centrally-located city of Łódź, otherwise known as Łódzkie Voivodeship. Specifically, the search was narrowed down to the spending of means from the Village Fund on activities related more or less closely with rural green space. In a further part of the work, an attempt was made at the mathematical and statistical assessment of how funds at the level of the auxiliary administrative sub-unit known as the sołectwo (village) were committed, in pursuit of the aforementioned greenspace- (and recreational area-related) tasks. The result of that was a classification of the territorial units under study.

In the present article, the researcher address the above issues by investigating greenspace-related tasks in the Village Fund of Łódzkie Voivodeship gminas’. The main goal of this article is to present the typology of villages using the metrics of the share of greenspace-related tasks in Village Fund using the properties of the normal distribution curve. Given that the article shows how small projects in the Village Fund are connected with public participation in the local development of green areas of rural gminas.

2. Theoretical background

2.1. The Village Fund as an instrument allowing green space to be established and maintained

The Village Fund may be regarded as a form of participatory budgeting operating at the level of the auxiliary unit known as the sołectwo, which may be

present within the local-tier administrative divisions known as *gminas*. This is a form of funding public tasks that have been in place in Poland since 2009, given the adoption at that time of a relevant Village Fund Act dated February 20th. That Act's place was taken by an Act of the same name dating from February 21st 2014, and remaining in force through to the present time. In principle, action taken within the framework of the Fund involves rural areas, though it is in fact also possible to identify units at the *sołectwo* level that are present within towns and cities. However, these are cases few in number that does not distort the overall way in which means are redistributed for the purpose of supporting *sołectwo*-own tasks.

As indicated above, an activity engaged in under the Village Fund involves a redistribution of funding. Subsequent reimbursement of means from the central budget takes places but depends on the level of wealth characterising the *gmina* seeking to be repaid. Under the provisions of the Village Fund Act, 20, 30 or 40% of funds spent may be subject to reimbursement. The assumption is naturally that the poorest *gminas* will obtain the largest sums in relative terms.

A further principle underpinning utilisation of the Village Fund is the non-time-limited nature of the Resolution seeking its implementation. This is to say that a Resolution of this kind adopted by a *Gmina* Council shall have application in consecutive fiscal years following the one in which adoption took place. A consequence of this statutory provision is that a local community is assured of continuity when it comes to the solutions in the *gmina* being brought into effect in this way.

Information of importance for Village Fund activity concerns the status of the *sołectwo* in Poland's legal system. In line with the assumptions of the Act of March 8th 1990 on *gmina* self-government,

the authority involved in the adoption and supervision of measures may decide to establish a subsidiary auxiliary unit. In Polish law provides could either a *sołectwo*, or a *dzielnica* (district of an urban area), or an *osiedla* (lowest district of an urban area). In the case of rural *gminas*, inclusion into the structure involves the repeated establishment of something that also operated in Poland prior to the country's systemic change post-1989 (Matyjaszczyk, 2011).

The important information associated with the Village Fund is that its full cycle of task implementation lasts three years. This takes in the planning of a new development in the *sołectwo*, the actual pursuit of whatever undertakings are involved, and – in the last year of the three – the reimbursement of funds (Fig. 1). Despite the need for funds of the *gmina* to be allocated, and effectively frozen until refund takes place, more and more *gminas* are deciding to make use of the Village Fund. Data from Statistics Poland and the Ministry of Internal Affairs and Administration make it clear that, in 2018, more than 73% of the *gminas* further subdivided into units at the *sołectwo* level did decide to deploy the Fund.

As a specific form of participatory budgeting, the Village Fund offers a way in which inhabitants can be incorporated into the decision-making processes made at the level of the *gmina* (Nowacka, 2010). A further key element introduced with the 2014 provisions is the possibility for *sołectwo*-level units to cooperate in pursuit of a common task. Thanks to this approach, it is possible for projects of more significant impact to gain implementation, with a far greater number of *gmina* inhabitants being served – and potentially involved – in this way.

That said, efforts to deploy Village Fund means have been inclined to raise specific questions as to whether social justice is being achieved at the same

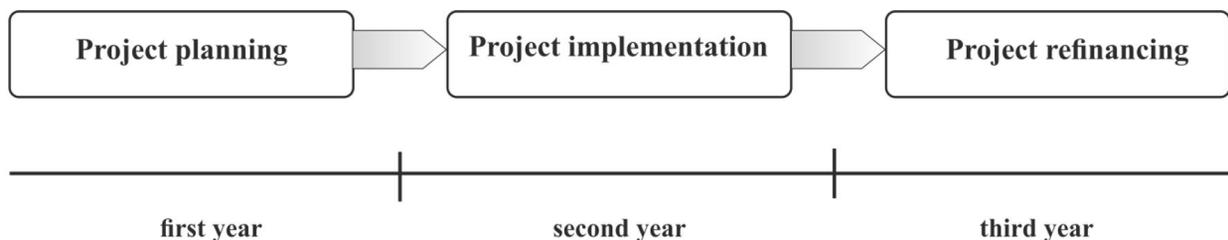


Fig. 1. The cycle of implementation relating to the Village Fund

Source: author's own work.

time. This reflects statutory provisions under which voting on announced projects takes place in the context of a village meeting that is more than once seen to involve what may be regarded as a non-representative group of inhabitants of the sołectwo. The point here is that this tier of administration is characterised by statutes allowing matters to be voted on by small numbers of inhabitants via the village meeting of the so-called second term – convened as and when a first-term meeting fails to attract a sufficient number of eligible persons. While such measures do allow for efficient decision-making in local communities, they bypass the voices and votes of the many residents who play no part at meetings. Indeed, low turnouts for meetings of this kind are a feature emphasised by both practitioners and theoreticians, encouraging a search for new means by which to keep local people informed about village meetings (Kamiński, Lewandowski and Olszewski, 2013).

Tasks that commit Village Fund means to green space and areas set aside for recreation are among those described as “gmina-own”. The funding of this kind of activity should thus be a natural aim for inhabitants of any given sołectwo, when it comes to the primary objective or desire that quality of life can always be improved. Where the classification of green space is concerned, the simplest means is that used by Statistics Poland as it is now known. In line with this, the green space in a gmina may be in the form of parks categorised as suitable for strolling and rest or recreation, smaller greens of various kinds, street greenery, and green areas on housing estates, as well as cemeteries and local authority-owned woodland. These categories have gained frequent use in the “analysis” (as conceived broadly) that is present in the subject literature, given the ease of access to data (Świercz, 2011; Szymańska, Lewandowska and Rogatka, 2015; Krzyżaniak et al., 2018).

However, scientific circles have in this way become acquainted with the imperfections of these datasets, noting that green infrastructure actually encompasses a far greater resource than would be the case were considerations to be confined to the data made available in statistical publications (Kabisch and Haase, 2013; Feltynowski et al., 2018; Papageorgiou and Gemenetzi, 2018). Where the countryside is concerned, a great potential source

of development for green infrastructure is provided by areas used or formerly used in agriculture, which do represent green space in reality but are not taken direct account of by any of the official, statistical categories. It should also be stressed that – in the case, rural areas – some land is not subject to classification as green space at the official reporting stage, given its status rather as unmanaged land within a given sołectwo.

A similar approach needs to be taken to investments in green space and recreational areas within rural gminas, as many activities do not actually find reflection in the official statistics. Inhabitants perceive a need for small new developments to be pursued – in order to raise the quality of public space in a sołectwo, and in this way allow for new functions to appear and new services for inhabitants to be rendered, or else for an increase in the quality of hitherto-functional space.

The classification of tasks pursued within the Village Fund context becomes a challenge also noted when it comes to other activities engaged in by gminas. This reflects the way in which undertakings at the subsidiary and auxiliary level of the sołectwo are arranged in a different way. In the face of this, it emerges that one of the easiest ways to arrive at a typology involves the assignment of projects to the gmina budget classification. This approach also facilitates the data search run using Annexes to official Financial Plans at gmina level.

2.2. Materials and methods

The work entailed a search for data included in the budgets of gminas with the region (Voivodeship) of Łódź in 2017. The availability of data in Polish conditions is above all dictated by local-authority reporting, as therefore inevitably characterised by a two-year delay with accessing statistical data. Furthermore, available data refer solely to units enjoying the status of rural gminas from the point of view of administrative law.

The analysis of a gmina budget took place via a number of stages. Preliminary work was based on the identification of rural gminas operating to put the Village Fund idea into effect in 2017. That step was followed by work to identify the categories of spending of means from the Fund, by reference to

Divisions and Chapters of the budget classification (Jurga, 2017). It was accepted that the best way to achieve the research objective would be for the consecutive stages of analysis to use data assigned to categories included within Division 900 – as related to municipal management and the protection of the environment. It was then further assumed that, from within that Division, the Chapters researched would be those included in Table 1.

The justification for selecting these three Chapters in the budget classification reflects their status as areas linking directly with the possibility of green space in gminas being created, or else maintained. Besides, the Chapters referred to allow for the secondary identification of auxiliary units within gminas in which implementation via the Village Fund involved tasks capable of being classified as activity in the name of green space. That required a far-reaching data-search among gmina budgets, in respect of functions implemented using the Village Fund – hence the need for a further final stage to the data-gathering procedure (Fig. 2).

Data made preliminarily ready in the course of the search allowed for quantitative analysis of sums (and shares of all spending) accounted for by spending on green space. It was also possible to determine the titles of undertakings, secondarily allowing for the development of a gmina-and-sołectwo classification based on particular projects implemented.

Quantitative analysis used, not only statistical measures but also a technique by which a set may be divided up in line with values for the arithmetic mean (\bar{x}) and standard deviation (S_x). The basis for the relevant calculations was provided by properties of the curve depicting the normal distribution (Parysek and Wojtasiewicz, 1979; Runge, 2006; Feltynowski, 2009). By this method, the limits of different intervals dividing the whole set into three

groups are decided upon using formula (1), as follows:

$$\bar{x} \pm \frac{1}{2} S_x, \tag{1}$$

where:

\bar{x} is the mean,

S_x is the standard deviation of variable x .

The division into three groups made it possible to indicate those gminas in which the units at sołectwo level had assigned the greatest shares of funding to activity associated with gmina green space, as well as those only characterised by a relatively low value for the indices under consideration.

3. Results of study

The first stage of the research revealed that – from among the 133 rural gminas located in Łódzkie Voivodeship – just 42.9% had become involved with Village Fund activity in 2017. Analysis of the allocation of financial resources under the Fund in turn supports the contention that – from among the proposed Chapters in the budget classification – the only one relevant to the gminas under study related to the maintenance of green space (i.e. 90004). The basis for any further drawing of conclusions was therefore narrowed down appropriately. Stage two of the research in turn yielded the information that, within the framework of the Fund, just 11 of Łódzkie’s rural gminas were identified with tasks of relevance to the establishment and maintenance of green space. On this basis, it can be seen that just under 8.3% of the communities studied are pursuing tasks of this kind. These account for 19.3% of

Table 1. Divisions of budget classification used in the study

Division no.	Division description
90004	Maintenance of green areas in cities and gminas
90005	Protection of air and climate
90006	Protection of soil and groundwater

Source: author’s own work based on <https://www.gov.pl/web/finanse> [20-07-2019].

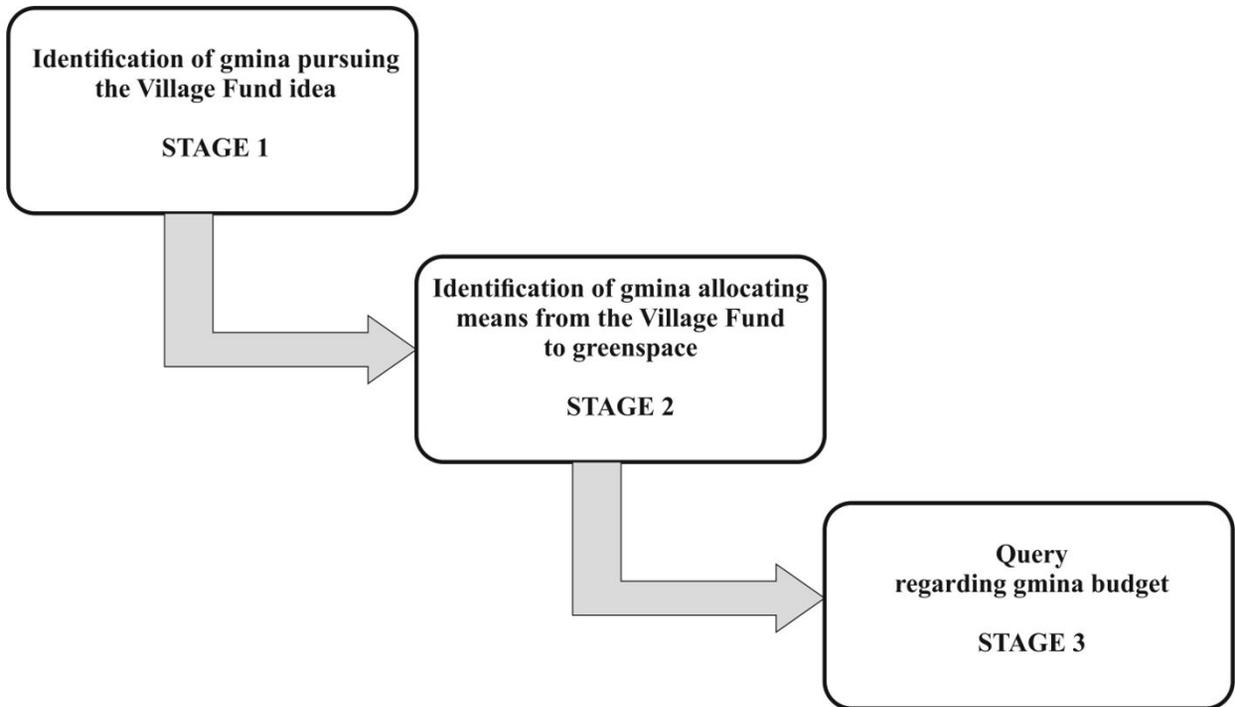


Fig. 2. Stages of research as regards data collection
Source: author's own work.

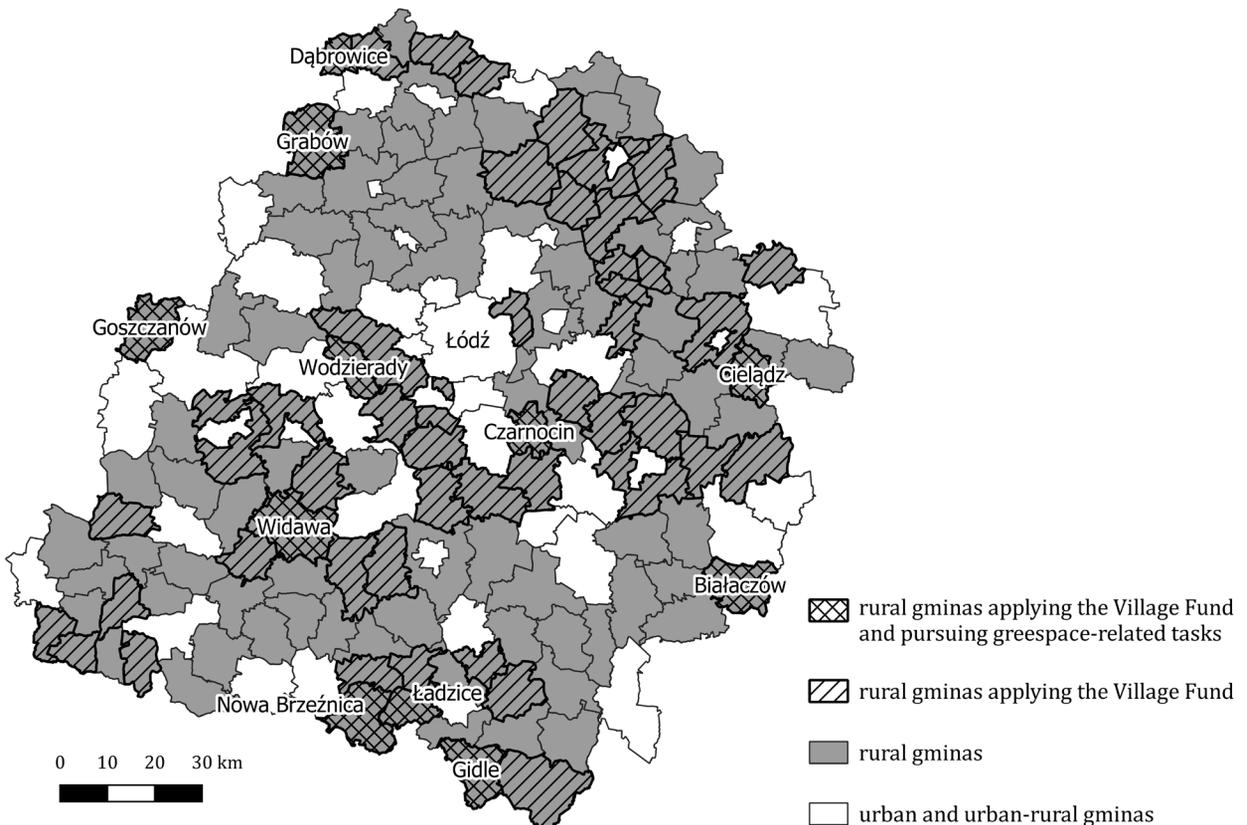


Fig. 3. The Village Fund in Lodzkie Voivodeship
Source: author's own work based on financial data from the Ministry of Finance and spatial data from the Head Office of Geodesy and Cartography.

the gminas in possession of Village Fund funding (Fig. 3).

It was further possible to indicate how many administrative units at the level of the sołectwo had pursued tasks associated with green space. Thus, the group of 11 gminas included 234 of these auxiliary territorial units, among which 61 (i.e. 26.1%) had been implementing the tasks in question. Research further shows that more than two tasks had actually been pursued in two of the gminas, while in two others it had rather been “financial montage” that had taken place, with this involved in the implementation of a single task involving Village Fund money in several units within the given gmina. In the gmina of Widawa, each sołectwo had in fact pursued a task associated with the maintenance of green space, by way of the purchase of further equipment in the form of a tractor and trailer. In turn, in the case of the gmina of Cielądz, the “financial montage” allowed for more-effective implementation of green space maintenance tasks at 9 different localities.

A third stage to the research allowed for the identification of sums and types of task implemented at the level of the individual sołectwo, with these data serving as the basis for both statistical and qualitative analyses. In qualitative terms, tasks gaining implementation within the auxiliary territorial units could be divided into categories as follows:

- the laying-out of new green space (C1);
- the maintenance or renewal of existing green space (C2);
- the purchase of equipment allowing green space to be tended (C3);
- other (C4).

In line with this classification, the greatest number of cases from among the 13 relevant undertakings being pursued by 11 rural gminas related to activity by which new green space was actually founded (category C1), as well as to the maintenance of existing green space (C2). Each category included five developments of the given kind. Two C3 cases involving the purchase of equipment allowing green space to be tended were noted, as was a single undertaking suitable for inclusion under the “other” category (C4).

Basic statistical analysis then allowed for the indication of shares accounted for by greenspace-related tasks, within the Village Fund funding assigned

to different localities. In line with this assumption, the smallest share to be noted in 2017 concerned the gmina of Białaczów, within which tasks relating to the maintenance of green space accounted for less than 0.5% of the Village Fund funding present in the auxiliary territorial unit of Miedzna Drewniana. At the other extreme was the gmina of Nowa Brzeźnica, within which the locality of Łązek was allocating its entire Village Fund allocation to the purchase of equipment with which its green space could be attended to more effectively.

In the analysis concerning the share of the entire Village Fund allocation for 2017 spent in a gmina, the lowest percentage was again that characterising the gmina of Białaczów. The highest value was in turn that noted for Dąbrowice, in which the two units at sołectwo level named Dąbrowice I and Dąbrowice II spent almost 16.5% of all gmina financial resources (Table 2).

The index involving the individual share of funds allocated to greenspace-related objectives within the overall Village Fund in the given auxiliary unit offered a basis for an identification of intervals on the basis of the formula in (1), with the result that three groups were defined. The intervals obtained from the calculation process were as follows, beginning with the group having lowest values for the percentage index:

- class-I village – $(56.07; \infty)$;
- class-II village – $< 23.11; 56.07 >$;
- class-III village – $(-\infty; 23.11)$.

In this way, the set of 11 gminas was divided up into auxiliary units with the highest level of allocation of Village Fund funding to greenspace-related objectives, with these found to include sołectwo-level units in the gminas of Nowa Brzeźnica, Dąbrowice, Grabów and Ładzice. Class II in turn comprised units within the gminas of Wodzierady and Gidle. Remaining units were assigned to the class characterised by the lowest values for the index relating to the role played by greenspace-related tasks under Village Fund. The auxiliary units falling within this category were in the gminas of Czarnocin, Goszczanów, Widawa, Cielądz and Białaczów.

By taking the same approach to the other index – involving the share of resources earmarked for greenspace-related tasks among Village Fund means present at gmina level – it proved possible to identify classes as follows:

Table 2. Greenspace-related tasks in Łódzkie Voivodeship involving the Village Fund

Gmina	No. of villages	No. of villages with greenspace-related tasks	Share of money allocated to greenspace-related tasks in the Village Fund budget of villages carrying out these tasks	Share of money allocated to greenspace-related tasks in the whole Village Fund budget
Gidle	21	1	26.61	2.78
Nowa Brzeźnica	15	1	100.00	4.02
Grabów	40	1	73.29	1.44
Białaczów	14	1	0.43	0.04
Czarnocin	14	1	16.52	0.81
Ładzice	12	2	56.41	7.43
Dąbrowice	11	2	74.07	16.46
Goszczańów	28	1	14.80	0.59
Widawa	41	41	11.47	11.47
Wodzierady	20	1	51.18	4.83
Cielądz	18	9	10.68	6.12
Sum	234	61	18.52	4.88

Source: author's own work based on <https://www.gov.pl/web/finanse> [20-07-2019].

class-I gmina – $(7.64; \infty)$;

class-II gmina – $< 2.54; 7.64 >$;

class-III gmina – $(-\infty; 2.54)$.

In this case, the highest class took in the gminas of Dąbrowice and Widawa, while class II comprised Ładzice, Cielądz, Wodzierady, Nowa Brzeźnica and Gidle; and class III Grabów, Czarnocin, Goszczańów and Białaczów. The correlation pertaining between the two hierarchies obtained had a coefficient of 0.257, i.e. a weak one, in line with the scale proposed by Guilford (1956).

4. Discussion

In the event, much work was required to analyse data collected on the establishment and maintenance of rural green space, given that the data in question have not been brought together in cohesive bases in a national statistics context. Particularly la-

bour-intensive was the classification process relating to the tasks being implemented within the Village Fund framework, the reason for this being the verification at gmina level – by local authorities – of the catalogue of tasks capable of being pursued. In essence, gminas lack organised cataloguing of their own tasks by category.

Furthermore, Village Fund tasks prove to be of a somewhat ad hoc nature, given the limited funding put at the disposal of auxiliary administrative units at the level of the sołectwo. Village Fund tasks relating to green space, in turn, represent just a small part of the overall picture, in terms of both finance and the structure of the tasks gaining implementation. It must be conceded, that – from the viewpoint of a gmina located in the countryside, the need to improve inhabitants' quality of life by way of green space and areas for recreation does not loom particularly large – as it would obviously do in the case of the urban areas. Indeed, research confirms that this is so (e.g. Czembrowski, Kronenberg and Czeplie-

wicz, 2016; Xiao, Li and Webster, 2016). Thus, where rural areas are concerned, matters of the above kind need to be gone into in more detail, with the aim of trying to categorise different units of administration in line with the dominant functions pursued, which then translate into tasks implemented under the Village Fund, and in turn, give an indication as to gmina inhabitants' key preferences.

In line with a requirement that they are congruent with a gmina's development strategy, tasks undertaken within the Village Fund framework should constitute an element by which objectives set are achieved. At the same time, an attempt is being made to educate local communities as to the kinds of tasks whose pursuit enjoys priority status. The cited examples of gminas within Łódzkie Voivodeship show that rural communities are not ignorant of initiatives entailing cooperation between administrative entities at the level of the sołectwo, with a view to the same task being implemented and followed through. In the case of our study, 2 out of 11 gminas were seen to have become involved in this kind of activity, which the analysis of results suggests proved successful. So this kind of approach allows scale-related impact to be achieved from the point of view of each actor involved in development processes at the level of the gmina.

An aspect characterising public-greenspace-related tasks pursued under the Village Fund relates to a desire to raise the level of attractiveness of the "mini-homeland" from the point of view of both inhabitants and visitors to the given gmina. Furthermore, green space in rural areas is capable of constituting a kind of factor often underlined in the subject literature, which has the effect of raising the value of the property – both economically and socially (Woolley, 2003).

A further result of bottom-up initiatives is greater care extended to newly-established areas of green space, as well as greater interest among inhabitants in the utilisation of such areas for both rest and recreation. In this case, there is no direct linkage with the sizes of sums designated for establishment and maintenance. Areas connected with the rural landscape provide for a change of perception; and it was precisely for this reason that the Village Fund was set up, with small projects managed by inhabitants potentially being in a position to raise the value of specific features of the rural landscape.

Public participation via the Village Fund should thus be regarded as essential to the proper functioning and development of a given territorial unit. This is also connected directly with the principle of subsidiarity and attests to openness on the part of local authorities (Abbott, 1995). In addition, the Village Fund is becoming an instrument by which to define and shape communities' active participation in top-down decision-making processes provided for in law.

5. Conclusions

Spatial analysis of the locations of gminas carrying out Chapter 90004 tasks within the framework of the Village Fund allows it to be claimed that, within Łódzkie Voivodeship, this is a phenomenon of incidental significance. An exhaustive search of examples of the Village Fund in use allowed for the categorisation of the tasks being implemented and pursued to meet the needs of particular rural communities where the establishment and maintenance of green space were concerned. This allowed for the development of research-based on the categories adopted.

A general conclusion to be drawn from the result is that the Village Fund serves, not only in the incorporation of local people into the management of part of an investment process but also in the integration of the community present in the given sub-local unit of administration that is the sołectwo, as well as between such units. This gains confirmation in the numerous initiatives entailing funding from several villages on this tier of administration (or indeed all of them in the case of the gmina of Widawa). An approach based around "financial montage" should be regarded as a local-authority task that ought to and mostly does denote inhabitants' involvement in cooperation to achieve the objectives of projects of larger scale in terms of both impact and the allocation of funding.

When set against each other, this study's two key indices – relating to the shares accounted for by greenspace-associated tasks in the Village Fund at the level of a single sołectwo (village), as well as in a gmina as a whole – show how the properties of a normal distribution curve and the division of

overall sets of data into three classes yield results that do not coincide. This is in particular dictated by the level of funding assigned to the Village Fund, both in the auxiliary units and from the perspective of the full pool of resources earmarked for Village Fund from the gmina budget. This research allowed to connect the participatory budgeting with local development in rural gminas.

In the case of the sołectwo in Nowa Brzeźnica gmina, inhabitants decided on the allocation of the entire Village Fund to an objective linked to the purchase of equipment assisting with the tending and upkeep of green space. This shows that the inhabitants of selected units are able to support initiatives related to the maintaining of greenery in rural areas, to say nothing of the spending of Village Fund resources on other objectives.

Nevertheless, the results do not evoke too much optimism, given the way that only a few administrative units of sołectwo level within a given gmina decided on implementing Village Fund tasks associated with green space. However, the work presented here is only a pilot study, given its confinement to Łódzkie Voivodeship and the single year 2017. An expansion of the research might help fuller, more meaningful, conclusions to be drawn in regard to the establishment and maintenance of green space. Alternatively, the work might be expanded to include other areas of involvement for Poland's Village Fund. Beyond that, the activation of rural communities achievable through funding at the level of the sołectwo so close to the citizens would have to be seen as an interesting research domain, given the possibilities for a multi-aspect approach to be taken to the question of co-decision over local development at this lowest administrative level, as well as that of the gmina representing the local-authority tier in Poland.

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