Quality Management and Sustainable Development in Local Communes – Evidence from Poland

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Abstract

Sustainable development is usually investigated from a global or national rather than a regional or local perspective. However, it is local communes that decide on the directions and dynamics of local development and on achieving the sustainable development goals. In the article, new insights are provided into how sustainable development can be further embedded into regional development practices by improving the management quality of local government units and through a contemporary approach to sustainable local development. The study attempts to show the relationship between the implementation of quality management methods by local governments, commune characteristics and sustainable development.

Keywords Quality management methods · Local government · Sustainable development · Rural communes

Introduction

The sustainable development of local communes can be analysed in various ways (Kitchen & Marsden, 2011; Scarlett Epstein & Jezeph, 2001; Woods, 2012). On the one hand, it is possible to focus on the direct implementation of global sustainable development goals (SDGs) at the local level, without taking account of institutional factors under which they are to be developed locally (Wheeler, 2002). On the other hand, one can focus on the idea of sustainable development, taking into account the

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life quality of inhabitants and on meeting human needs by the use of institutions managed by local governments (Satterthwaite, 2010).

Quality management in local government is an ongoing, holistic process of improvement that influences all aspects of these authorities' work, rather than specific solutions for selected public services. In theory, it directly affects the quality of the services for citizens and entities on its territory, and indirectly on the quality of these entities' work (Ariely, 2013). The main motivation of our paper is thus to check whether this quality management in local government has a significant impact on the sustainable development of these communes. This role has so far not been particularly analysed in research into the local government level.

Our paper fills a literature gap, as most studies and analyses on quality management in public administration focus mainly on the implementation of pro-quality governance solutions and reporting aspects (Dediu et al., 2019; Kaziliūnas, 2008; Kaziliūnas, 2008; Melkers & Willoughby, 2005; Montesinos & Brusca, 2009; Poister & Streib, 1999), but they do not cover the context of sustainable development. Literature on the issue of sustainable development usually omits the aspect of management methods and institutional solutions in local governments (Echebarria et al., 2018; Guha & Chakrabarti, 2019; Tomor et al., 2019). The research that combines these two elements concentrates on a general, theoretical (Reed et al., 2000) or national (Loorbach, 2010) perspective that omits local government or addresses a case studies of a specific type of the local government services, mainly infrastructural ones such as water (Zhang et al., 2014) and wastewater management (Corcoran, 2010) or the perspective of individual local institutions such as a hospital (Gareis et al., 2013). The main objective of this article is therefore to assess the so far unexplored correlation between local government quality management methods (QMM), commune characteristics and sustainable development.

The paper's contribution to scientific literature lies first of all in conducting such an analysis based on two different, large-scale, nationwide researches that were developed and combined: research on quality methods in Polish local government units, and Rural Development Monitoring – research on the development and structure of the socio-economic features of Polish rural areas and rural communes. These studies, realised by scientific institutions represented by the article's authors, cover all of the nearly 2,200 municipalities in rural areas in Poland and are very cross-sectional, based on many data sources and using various research methods, which have been also used to assess local development in Poland by the OECD. Second, the correlation between QMM and sustainable development confirmed in the course of the research encouraged the authors to formulate a question not only for further international comparative research on the issue but for a reformulation of the perception on the purpose of implementation of QMM in local governments.

The paper is structured as follows. The second section provides a background to the role and importance of quality management methods in local governments, clarifies the relationships and influence of local authorities on sustainable development based on a literature review and international rules and regulations. The third section explains the research context, methods and data applied in the analysis as well as addressing the objectives, main assumptions and research questions. The fourth section presents the results and discussions, separately for each of the three research

hypotheses. Section five concludes the paper, detailing the implications of our findings and considering the pathways for further research.

Background

Quality Management Methods in Local Government

According to the Musgrave principle of reciprocity – of the basic allocative rule by the theory of fiscal federalism – it is beneficial for the area providing public services to overlap with the jurisdiction of the administrative unit that provides them; compliance with this principle ensures Pareto-efficient outcomes (Blindenbacher 2003, 373–382). Most everyday public goods and services are provided at local government level (Gunning, 2003), whose overriding goal is to meet residents' collective needs. Thus the quality of management should translated directly and indirectly into the quality of public goods and services provided.

Looking at the economic dimension of local development, the institutional framework – and thus both the provisions, legal regulations and the manner of enforcing them – has important conditions for shaping development processes (Olsson 2009; Kowalski et al., 2010; Sierak, 2016). In this approach, the actors shaping the institutional framework influence the conditions for sustainable development. At the local level, the main factor influencing the legal framework and its execution is the administration of local governments (Ladner et al., 2019; Lyons, 2007). Hence the statement that the quality of local government offices' work translates into sustainable development at a local level. The implementation of quality management methods (QMM) affects the quality of services, but also the way the institutional framework is shaped (Olsson 2009).

Sustainability and Local Governments

The importance of the institutional factor, including governance at the local level, for the implementation of the idea of sustainable development was strongly expressed in the UN resolution adopted by the General Assembly on 27 July 2012 ("A/RES/66/288 – Institutional Framework for Sustainable Development", s.a.). The effectiveness of public sector governance has been recognised as one of the pillars of development and prosperity and it was declared as a priority in the United Nations' Programme of Reinventing Government under the aegis of Millennium Development Goals, e.g.: "moving towards decentralized local governance is the most effective mechanism for achieving sustainable improvements in service delivery" (Ghaus, 2007, 26–29).

The SDG goal 16.6 emphasises strengthening public institutions in order to infuse new thinking, strategy and action towards building effective and accountable public institutions (Chams & García-Blandón, 2019), including local governments. The international organisation United Cities and Local Governments (UCLG) (UCLG: The sustainable development goals: What local governments need to know

2020), explains precisely that the sustainable development goals matter to local governments (The Sustainable Development Goals: What Local Governments Need to Know 2015).

Local governments are policy-makers, catalysts of change and the level of government best-placed to link the global goals with local communities. Explicitly acknowledging that the institutional umbrella and the appropriate quality of local institutions' work is thus crucial for the implementation of SDGs (Güney, 2017). Following UCLG guidelines, sustainable development of local communities can be seen as essential to their inhabitants' quality of life (Satterthwaite, 2010) by involving the development of three types of capital that ensure fair living conditions, i.e.: (1) natural capital, (2) material and financial capital, as well as (3) social and human capital. To pursue this type of development is to ensure a durable improvement in the quality of life realised by local authorities and local institutions through integrating and determining appropriate proportions in the three types of capital in question (Stanny & Czarnecki, 2010).

Filling the Gaps in the Current State of Research in the Field

There are few publications dedicated to the issue of relations between management quality and sustainable development in local government, especially in rural and urban–rural communes. The vast majority of publications that combine quality management and sustainability focus on them as systems approaches to management and analyse them from a business perspective (Gorman & Krehbiel, 1997; Kuei and Lu 2013). Analysing material from other journals (Siva et al., 2016), a limited amount of literature in the area in question was found, and this did not include substantial proofs to demonstrate an actual correlation between these two aspects (Baker, 2012; Beeri et al., 2019; Isaksson, 2009; Zeemering, 2018). Publications devoted to the issue of quality management focus mainly on the implementation of quality governance solutions and reporting aspects, but they do not cover the context of sustainable development (Beeri et al., 2019). On the other hand, publications dedicated to the issue of sustainable development usually omit the aspect of management methods and institutional solutions in local governments.

On this basis, it can be concluded that, although the issues of quality management and sustainable development are related and this is reflected in the literature to date, this phenomenon is mainly the subject of research in the context of enterprises or economic sectors (Barbaritano et al., 2019; Nguyen et al., 2018). Even if those articles address the matter of quality management as support to environmental management-system implementation and to managing sustainability, they do not focus on the topic of local governments and they rather concentrate on the theory, and models then on the analyses of large-scale quantitative data (Siva et al., 2016). Local government appears mainly in the background, as a secondary issue or as a case study for qualitative research. This is a large and important gap to be filled, as our research proves that there is a significant correlation between the quality of management within local government and the level of its sustainable development.

Regardless of social, economic and environmental issues, institutional matters are crucial for studies of sustainable development – both laws, regulations and the way they are enforced. In this approach, actors shaping the institutional framework are a key element influencing and shaping the conditions for sustainable development. The paper seeks to partially fill this gap, analysing the example of Polish communes. Given the fact that most European local governments are somewhat similar due ratification of the European Charter of Local Self-Government,¹ the above conditions are also true for local governments in other European countries. An important factor, which is the research value of the Polish case, is the fact that the Polish system of local self-government is relatively young, as it was established in the early 1990s. Its modern history spans just three decades, so it has been evolving relatively quickly. Thus it is an area of rapid change and specific testing of new institutional and development concepts. In the 1990s, it shifted from the Weberian bureaucracy paradigm to the new public management, despite the lack of a heritage of independent local government administration. The quality management concepts were implemented in it at the same time as in Western Europe (Ćwiklicki et al., 2019). From an institutional perspective, this is an extraordinary case in terms of the pace of change.

Research Methods

Research Context

The changing environment and development conditions force local government into an endless adaptation process, which includes both the scope public services and the way they are provided (Farnham et al., 2005, 3–24). In Poland it is particularly visible at commune level in the process of ongoing modifications of the Act on Municipality Self-Government. A consequence of this process is the increasingly noticeable need for cooperation and consolidation of the activities both of the administration of local government and the activities of citizens for the benefit of the local community (Bovaird & Löffler, 2002, 16; Ladner et al., 2019, 19–20). However, this approach requires a departure from the classically understood Weberian, hierarchical administration. To this end, it is necessary to implement new management solutions in administration where, according to the concept of Total Quality Management, the emphasis is not on measurement and control, but on trust, cooperation and improvement of the process (Farnham et al., 2005, 16; Żabiński, 2012, 61–63).

In local government units such as communes, it is necessary to pay attention to the dual role of this institution. In a narrow sense it may be considered as an organisation, a commune office. All changes in the functioning of the commune office relate not only to its internal structure, i.e. the office per se, but also affect its surroundings, understood holistically as the entire community – the local government unit in a broad sense. Thus changes in management processes in the local

¹ https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/122/signatures?p_auth=exUzLENZ (accesses: 17.01.2021).

administration may translate into the effect of the work of all entities in a given local government unit (Bovaird & Löffler, 2002). Moreover, the quality of management in the office influences the quality of services provided by the administration.

However, as highlighted above, local governments require flexibility; they must adapt to changing conditions, in particular small communes, which usually have very limited personnel resources, which necessitates flexibility in terms of employee responsibilities (Ćwiklicki et al., 2019).

Description of the Study on QMM Used by Polish Local Governments

The article is based on the study conducted by the University of Economics in Krakow² in 2015, which covered the issues of quality management in local government administration in the 2000–2015 period. To date, this is the broadest and most comprehensive study of the use of QMM by local governments in Poland. The participants in the interviews were secretaries of communes or plenipotentiaries for quality management in communes. The survey consisted of 14 questions of varying complexity. The questions referred both to the fact of using QMM – the broad topic of the QMM used and the possible reasons for not using such solutions – as well as to factors affecting the use of QMM in the unit and to the issue of assessing the level of use of methods by local government units. As part of the CAWI survey, a questionnaire was sent to all local government units in Poland (2,792 units), and 2,150 units responded, including 1,914 communes (77%) and 236 counties (75%). Of the 2,150 units surveyed, 543 reported the implementation of some QMM (about 25%) (Żabiński, 2016). A total of 1699 rural and rural–urban communes took part in this study. Of these, 233 units reported the implementation of the CAF method, 250 units ISO 9001, 35 units PRI methods, and 13 reported the implementation of others, including proprietary pro-quality solutions.

The QMM study in Polish local governments allows the authors identify entities using QMM on a national scale, but only imposing this layer on the map of local governments based on the MROW survey makes it possible to formulate questions and analyse the situation in terms of the relations between QMM and sustainable development in local government. Thus the MROW study is the basis for going to greater depth, and the QMM study is only a key enabling the analysis of the situation in the context of the relationship between these phenomena.

Rural development monitoring in Poland

For several years, research on the level of socio-economic development of rural areas has been conducted in Poland on regular, biannual basis. The results have been presented in the Rural Development Monitoring reports (Rosner & Stanny, 2014, 2016; Rosner et al., 2018). The MROW methodology has been recognised and used by the OECD to prepare its own development reports (OECD, 2018). The research

² By Bober, J. and Żabiński, M. from the Department of Economics and Public Administration.

on the development and structure of the socio-economic features of Polish rural areas is carried out at the level of Local Administrative Units (LAUs) (Glossary: Local administrative unit (LAU) 2020) and covers all 2,173 communes (rural communes and rural areas of rural–urban communes) (Rosner et al., 2018).

The MROW studies are developed according to the authors' methodology, specifying eleven components of local development in rural and rural–urban communes (Rosner & Stanny, 2017). These components are synthetic in the sense of requiring further operationalisation, i.e. conversion into empirical indicators and defining their relationships. These are the characteristics of social and economic phenomena with the greatest significance for rural areas: spatial accessibility, deagrarianisation of the local economy, social and economic situation, and the quality-of-life indicator. The research approach makes it possible to create a scale of the level of individual communes' development. The results of the eleven components of socio-economic development form the basis for the definition of the synthetic scale, which uses one value to characterise the features determined as the synthetic level of development. The measure obtained by this method provides no information about the level of development in absolute terms but specifies the relationship between the units analysed in terms of their defining features. It means that the scale of development is relative, which means reflecting the "equal" and "greater" relationship between the LAUs analysed. However, the numeric values of the measurement cannot be interpreted in a way that would go beyond these relations (one cannot ask "how much bigger" or smaller the result is for one commune in comparison to another).

The research indicates that Polish communes may be classified according to their level of socio-economic development. The authors decided to divide the set into five equal subsets, starting from 20% of the least-developed to 20% of the best-developed communes in rural areas. The commune-development-level quintiles are as follows: very low, low, average, high, very high, and were prepared based on the synthetic scale of the development level, which implies creating a specific map of spatial diversity of the communes presented in Fig. 1 (white spots on the map are urban areas not included in the research).

The methodology developed also made it possible to create a typology of communes in accordance with the structure of elements of socio-economic development. The authors of the MROW decided to distinguish seven types of commune in Poland depending on the role played by each of the 11 components and structural characteristics for their development (Fig. 2):

- **Type 1:** dominance of traditional agriculture; 474 communes – 22% of all rural and urban–rural communes, inhabited by only 12% of the country's rural population; in this type of commune, the deagrarianisation of the economy is much less advanced than the average for the country's rural areas. The only component with a slightly above-average evaluation in Type 1 communes is the agricultural sector. In these territories, agriculture is a family business.
- **Type 2:** dominance of large-scale agriculture; 381 communes – 18% of all rural and urban–rural communes, inhabited by 14% of the rural population. In communes of this type, agriculture accounts for a large proportion of the economy, but the demographic structure (especially in terms of age and sex) is much more

Fig. 1 Spatial diversity of the communes by the level of development. Source: (Rosner et al., 2018) (p. 219)

favourable than in Type 1 communes. There is a relatively high share of large farms, which emerged as a result of the restructuring of the previously state-owned farms.

- **Type 3:** prevalence of agricultural functions – resembles Type 1 but differs both in terms of greater spatial accessibility and a greater degree of deagrarianisation of the local economy; 449 communes – 21% of all rural and urban–rural communes, inhabited by 17% of the rural population.
- **Type 4:** multi-income, fragmented agricultural structure; 161 communes – 7% of all rural and urban–rural communes, inhabited by almost 10% of the country's rural population. The area is relatively densely populated, but the farming structure is highly fragmented – the average farmstead is around 3 ha, four times smaller than the average Polish farm. It is common for the inhabitants

Fig. 2 Typology of communes according to the structure of the components of socio-economic development. Source: (Rosner et al., 2018) (p. 230)

of these areas to commute to work in the city and treat their farm as a supplementary source of income.

- **Type 5:** multifunctional with balanced sectors of the economy; 433 communes – 20% of all rural and urban–rural communes, inhabited by 23% of the country’s rural population. There is a relatively high and harmonious development of both agricultural and non-agricultural functions and it is well balanced between the agricultural and non-agricultural sector.
- **Type 6:** urbanised, reduced agricultural functions; 227 communes – 10% of all rural and urban–rural communes, inhabited by 19% of the rural population. The communes are situated in the second circle around large cities and in the first circle around medium-sized cities. The area is relatively well connected to the central city, which serves as a labour market for inhabitants. The agri-

cultural functions have been reduced and the level of development is closely connected to the location of communes in relation to urban centres.

- **Type 7:** highly urbanised; 48 communes – 2% of all rural and urban–rural communes, inhabited by 5% of the rural population. In Type 7 the agricultural function is disappearing or turning into market gardening services for the city. The Type 7 areas vary in terms of the degree of change towards urbanisation.

Objectives, Main Assumptions and Research Questions

The main objective of this article is to assess the correlation between the implementation of a QMM in local government and the level of sustainable development of rural and urban–rural communes in Poland. By verifying, assessing and describing statistical regularities between the specificities of communes or the level of their development, and the inclination of local authorities to implement the QMM, the article aims to determine the research space for further studies and analyses. Its purpose is not to describe rural development processes that would result from implementing QMM in rural or urban–rural communes. The article used a study by one of the co-authors on the use of solutions in the field of quality management in Polish local governments as well as the research results (see point 2.1) and data collected for the Rural Development Monitoring reports (Polish acronym: MROW – see point 2.2). There was an *a priori* assumption that the methodology used by the authors of the MROW is properly suited to Polish realities and local development conditions, and its assumptions and proposed indicators were not discussed. The objective formulated above arises from the research questions advanced by the authors, which assume that:

Research Question 1 (RQ 1) Quality-management methods in local governments are implemented mainly by communes that are characterised by a very high or high level of socio-economic development (according to MROW methodology – see point 2.2.).

It has been assumed that well- and very well-developed communes should have adapted management and institutional rules allowing for efficient management of local resources and for their proper developmental use (Ćwiklicki et al., 2019). Not wanting to prejudge whether a high level of commune development is an effect or a reason for introducing QMM, the goal was to verify the occurrence of dependencies: the higher the level of development, the higher the percentage of communes with QMM implemented.

Research Question 2 (RQ 2) Quality-management methods in local governments are mainly implemented by multifunctional as well as urbanised and highly urbanised communes (according to MROW methodology).

Multifunctional, urbanised and highly urbanised communes are among the best-developed in Poland. Almost all of them (apart from 10% of less-developed multifunctional communes) are in the group of highly or very highly developed – this is the result of the balanced use of almost all components affecting the level of

socio-economic development. According to the theory of complex organisations (Patino-Ortiz et al., 2006), the level of complexity in local government depends on the number of the element counts such as interest groups, areas of interest, tasks, number of services provided and the relationships between these elements. It was therefore presumed that multifunctional as well as urbanised and highly urbanised communes are local government units with a greater need for QMM. Due to the above-average development of such communes, it has been assumed that awareness of the benefits of implementing QMM in these local entities was high and that it is reflected in the above-average use of QMM by local governments on a national scale.

Research Question 3 (RQ 3) The least-developed communes (40% of communes with very low and low level of development) that decided to implement QMM advanced on average above the other communes on the scale of socio-economic development.

It has been assumed that, compared to more developed communes, underdeveloped communes have relatively less obvious and easily used resources supporting local development. Better organisation of communes and higher quality governance by local authorities can help in their use, thus facilitating development. Hence, there is a correlation between QMM implementation and promotion of the communes on the scale of development (according to the MROW methodology).

Results and Discussion

There are 2,477 communes in Poland, of which 1,914 decided to participate in the study on the implementation of QMM. Of these 1,914 communes, 1,697 were rural and urban–rural communes (there are 2,175 rural and urban–rural communes in Poland). The research results indicate that 451 rural and urban–rural communes implemented QMM from 2000 to 2015 (Fig. 3).

Comparing the regions' universality of using pro-quality-management solutions in rural and urban–rural communes, a similar saturation level can be seen for the whole country, with the exception of two regions. These exceptions are the Małopolska and Podkarpacie regions, located in the south-east. This article does not deal with this issue, but based on the authors' professional experience and knowledge of Polish realities, it can be presumed that the proximity of entities implementing management solutions under EU projects is a factor in the greater number of implementations in these regions.³

Based on these study as well as on developed databases and methodology used in the MROW, the three hypotheses presented in the article were verified. The pivot charts and tables method based on data sets from rural and urban–rural communes

³ For example, projects co-financed by the European Social Fund: Support for implementing good governance rules and methods in local governments: Priority V – good governance for period 2007–2013 (extended to 2015) (*Regulation Of The Minister Of Infrastructure And Development of November 10, 2015 amending the regulation on granting public aid under the Human Capital Operational Program. 2015*).

Fig. 3 QMM implementation in rural and urban–rural communes. Source: author's own research

was used in order to compare the results in the level of sustainable development using solutions in the field of quality management in communes. The comparison included searching for correlations between individual types of commune according to the MROW methodology. Due to the very broad range of both databases, it was possible to make comparisons and look for dependencies in the study area for the whole country, forming the basis for a reliable picture of Polish rural and urban–rural communes.

Results and Discussion on RQ 1

Research Question 1 (RQ 1) Quality management methods in local governments are implemented mainly by communes characterised by a very high or high level of socio-economic development (Table 1).

Based on the data sets analysed, it is seen that QMM are relatively more frequent in rural and urban–rural communes with a very high or high level of

Table 1 Implementation of QMM in rural and urban–rural communes by the level of development

Level of Development (MROW 2018)	Response (%)	QMM implemented (%)	QMM not implemented (%)
very low	77.5	19.2	80.8
low	79.6	27.7	72.3
medium	82.1	26.3	73.7
high	80.9	27.9	72.1
very high	71.7	32.7	67.3
Total	78.4	26.7	73.3

development (according to the MROW classification). This the first of the research questions. But it should be also noted that while communes with a very high level of development have a higher level of QMM implementation (32.7%) than in other groups, the percentage of highly developed communes with QMM (27.9%) is similar to that in communes with medium (26.3%) and low (27.7%) levels of development. There is a clearly lower percentage of implementation in communes with a very low level of development (19.2%). The relationship based on the fact that the more developed the communes are the higher is the QMM implementation rate is apparent at almost all five levels of the development of rural and urban–rural communes. The exception is the 20% of communes with medium levels of development. However, this may be related to the fact that the level of responses in the QMM implementation survey ranged from 67.3% for very highly developed communes to 80.8% communes with very low levels of development.

The implementation of QMM means *de facto* institutional change, i.e. a change in the way the organisation and its culture function. This is not only a costly process – in financial terms – but it also requires a certain level of organisational maturity. On the other hand, looking at progress or a high level of socio-economic development, it should be assumed that it is also dependent on the condition and quality of the administrative structure of a given local government. Hence, confirming the correlation between the development of management methods and a high level of sustainable development is not unexpected. This correlation may not seem particularly deep, but despite the obviousness it is no longer an unconfirmed theory – our research proves such a correlation on a large (national) scale. By doing so, this paper thus opens a question for further research in the field of mutual dependencies between these phenomena. It is an important argument or a basis for asking questions about future research in this area – studies to determine the possible vector of this correlation, i.e.: whether the implementation of QMM improves the parameters of sustainable development, or maybe whether a corresponding level of sustainable development determines the awareness and interest of local governments in improving existing management solutions.

Results and Discussion on RQ 2

Research Question 2 (RQ 2) Quality-management methods in local governments are mainly implemented by multifunctional as well as urbanised and highly urbanised communes (Table 2).

Studies shows that, according to RQ 2, the QMM were implemented primarily by highly urbanised (Type 7) and urbanised (Type 6) communes – 55.6% and 32.5% respectively. Contrary to our assumptions, in the “top 3” types of commune with the highest percentage of QMM implementation there were no multifunctional Type 5 communes (24.6%), but multi-income Type 4 communes appeared (46.7%), overtaking even urbanised communes. A certain surprise is caused by the high level of implementation of QMM solutions in Type 4 communes – multi-income, fragmented agricultural structure – which partially undermines the validity of the second research question.

On the other hand, the analysis broken down into individual regions shows the fragmentation of this phenomenon. It occurs especially in the case of two neighbouring regions where most Type 4 communes are located – Małopolska and Podkarpackie. As mentioned above, these regions are characterised by higher saturation with QMM solutions than other Polish territories. Knowing the socio-economic situation and political conditions of Polish regions, this exception should be treated as an anomaly. The authors are therefore inclined to assert that Research Question 2 has been only partially confirmed. Urbanised (Type 6) as well as highly urbanised (Type 7) communes are characterised by greater administrative complexity, and, consequently, by more highly developed management processes in their organisation (Dooley, 2002; Patino-Ortiz et al., 2006, 4). So these are the types that are predestined to use QMM.

The anomaly in the results for Type 4 communes concentrated in the two regions is surprising and requires deeper consideration. As these regions are characterised by an over-proportionally high share of communes with a

Table 2 Implementation of QMM in types of rural areas

Type of commune according to MROW	Number of communes	Response %	QMM implemented %	QMM not implemented %
dominance of traditional agriculture	474	77.4	22.3	77.7
dominance of large-scale agriculture	381	81	20.2	79.8
prevalence of agricultural functions	449	79.2	25.9	74.1
multi-income, fragmented agricultural structure	161	82	47.7	52.3
multifunctional with balanced sectors of the economy	433	80.1	24.6	75.4
urbanised, reduced agricultural functions	227	73.1	32.5	67.5
highly urbanised	48	56.2	55.6	44.4
Total	2,173	78.4	26.7	73.3

Table 3 Implementation of QMM in types of rural areas (according to the structure of development components) in 14 Polish regions

Type of commune	Number of communes (14 regions)	Response %	QMM implemented %	QMM not implemented %
dominance of traditional agriculture	447	76.7	21.0	79.0
dominance of large-scale agriculture	369	81.0	20.4	79.6
prevalence of agricultural functions	344	76.7	20.5	79.5
multi-income, fragmented agricultural structure	41	78.0	31.3	68.8
multifunctional with balanced sectors of the economy	412	80.1	24.8	75.2
urbanised, reduced agricultural functions	182	68.7	25.6	74.4
highly urbanised	46	54.3	52.0	48.0
Total	1,841	77.0	22.8	77.2

“multi-income, fragmented agricultural structure” (Type 4), the authors decided to check the situation of this type of commune against the other 6 types in 14 Polish regions (excluding the Małopolska and Podkarpacie regions) (Table 3).

Excluding the Małopolska and Podkarpacie regions, only 41 communes qualified as Type 4 communes. The analysis of the research results clearly shows that for this group of communes the percentage of local governments using QMM is very high (31.3%) compared to other types. It is higher only for “highly urbanised” communes (46%). Based on the available research and data, the authors are unable to explain this phenomenon. However, it should be emphasised that this unexpected result is very interesting and requires further study.

Results and Discussion on RQ 3

Research Question 3 (RQ 3) On average, the least developed communes (20% of communes with very low and 20% with low levels of development) that decided to implement QMM, advanced above other communes on the scale of socio-economic development (Table 4).

As shown in the table above, of the least developed group, 24.3% implemented QMM by 2016. Of the communes that fell to the lower development class in the years 2010–2016 (the period between the initial and latest MROW survey), as much as 84.4% had not implemented QMM. Of the communes that did not change their level of development in that period, the QMM implementation rate was 24.8% and was very close to the average of 24.3% for this group. It should be noted that of communes that were promoted and moved to a higher development class, 25.7% had implemented QMM, which is above the average in the group studied. Between the communes that have fallen into the lower class and those that have advanced to

Table 4 Communes with a low and very low level of development that have been promoted to a higher or downgraded to a lower development class over the years 2010–2016

Activity	% of communes without QMM	% of communes with QMM
Downgrading to a lower level of development	84.4	15.6
No change	75.2	24.8
Promotion to a higher level of development	74.3	25.7
Total	75.7	24.3

the higher class, there is a difference of more than 10 percentage points (84.4% vs. 74.3%) in favour of those who have implemented QMM. It can be concluded that the above results confirm the assumption made in the RQ3.

As for the quantitative approach, the promotion on the scale of development concerns 109 communes (28 with QMM) that in 2010 were in the classes with low or very low levels of development and that in 2010–2016 advanced at least one class higher. In the case of communes that were downgraded, there were 45 (7 with QMM), but in this case only communes were taken into account that fell from the class with a low level of development to that with a very low level of development in the period analysed. During the period analysed, 533 communes (132 with QMM) did not change their level of development.

Conclusions and Future Research

The study made it possible to confirm the research questions on the relationship between QMM implementation in local governments units and sustainable development for rural and urban–rural communes. The study shows which types of rural communes, due to their development characteristics, most often implement QMM and to what extent it is related to the wealth of these communes and the level of their development. The research also showed that among the communes that developed above average in the period analysed, there was a greater percentage of local government units that implemented QMM. Such a result implies a direct recommendation for implementation of QMM specifically for local governments as solutions for the improvement for sustainable development. Seeing a certain research gap, the authors conducted a large-scale study of one country, and due to the relatively universal nature of local government administration – on a European scale – the conclusions drawn may probably be suited for other countries. However, this study should be used as an incentive to carry out similar studies for other countries. Moreover, it is advisable to conduct further research on the links between QMM and sustainable development, taking into account both the character of the commune and its type, analogous to the research carried out under the MROW methodology.

The confirmed correlation between QMM and sustainable development encouraged the authors to formulate a question not only for further international comparative research on the issue but for reformulation of the perception on the purpose of implementation of QMM in local governments. If QMM helps to facilitate sustainable local development, there may be a new incentive for the use of such tools in local governments. The results of research presented in this paper cannot confirm such a hypothesis but are sufficient to indicate that it is an area for further study.

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Declarations

All authors read and approved the final manuscript.

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References

- A/RES/66/288 - Institutional framework for sustainable development. 2020. <https://sustainabledevelopment.un.org/index.php?page=view&type=2002&nr=31&menu=35>. Accessed 30 May.
- Ariely, G. (2013). Public administration and citizen satisfaction with democracy: Cross-national evidence. *International Review of Administrative Sciences*, 79, 747–766. <https://doi.org/10.1177/0020852313501432>.
- Baker, Susan. 2012. *Politics of Sustainable Development*. 1st ed. Routledge. <https://doi.org/10.4324/9780203992098>.
- Barbaritano, M., Bravi, L., & Savelli, E. (2019). Sustainability and Quality Management in the Italian Luxury Furniture Sector: A Circular Economy Perspective. *Sustainability*, 11, 3089. <https://doi.org/10.3390/su11113089>.

- Beeri, I., Uster, A., & Vigoda-Gadot, E. (2019). Does Performance Management Relate to Good Governance? A Study of Its Relationship with Citizens' Satisfaction with and Trust in Israeli Local Government. *Public Performance & Management Review*, 42, 241–279. <https://doi.org/10.1080/15309576.2018.1436074>.
- Blindenbacher, ed. (2003) *Federalism in a changing world: learning from each other ; scientific background, proceedings and plenary speeches of the International Conference on Federalism 2002*. Montréal: McGill-Queen's Univ. Press.
- Bovaird, T., & Löffler, E. (2002). Moving from Excellence Models of Local Service Delivery to Benchmarking 'Good Local Governance.' *International Review of Administrative Sciences*, 68, 9–24. <https://doi.org/10.1177/0020852302681001>.
- Chams, N., & García-Blandón, J. (2019). On the importance of sustainable human resource management for the adoption of sustainable development goals. *Resources, Conservation and Recycling*, 141, 109–122. <https://doi.org/10.1016/j.resconrec.2018.10.006>.
- Corcoran, E. 2010. Sick water? The central role of wastewater management in sustainable development - A rapid response assessment. *UNEP (United Nations Environment Programme), UN-HABITAT, Nairobi, Kenya*.
- Ćwiklicki, M., Pilch, K., Żabiński, M. (2019) ISO 9001 quality management systems in local government institutions in Poland: Past, present and future *International Review of Administrative Sciences* 002085231881528 <https://doi.org/10.1177/0020852318815280>.
- Dediu, Bucur Iulian, Liliana Mihaela Moga, and Stefania Cristina Mirica. 2019. An Overview of the Trends in the Evaluation System for the Public Management Performance. In *Eurasian Economic Perspectives*, ed. Mehmet Huseyin Bilgin, Hakan Danis, Ender Demir, and Ugur Can, 11/1:95–103. Eurasian Studies in Business and Economics. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-18565-7_8.
- Dooley, K. 2002. Organizational complexity. *International Encyclopedia of Business and Management*. Cengage Learning Emea.
- Echebarria, C., Barrutia, J. M., Eletxigerra, A., Hartmann, P., & Apaolaza, V. (2018). Local sustainability processes worldwide: A systematic review of the literature and research agenda. *Journal of Environmental Planning and Management*, 61, 1289–1317. <https://doi.org/10.1080/09640568.2017.1342611>.
- Farnham, D., Hondeghem, A. & Horton, S. (2005). *Staff participation and public management reform: Some international comparisons*. Palgrave Macmillan.
- Gareis, R., Huemann, M., & Martinuzzi, A. (2013). *Project management and sustainable development principles*. Project Management Institute Inc.
- Ghaus, A. (2007). *Governance for the Millennium Development Goals: Core issues and good practices*. Government Reinvention Series. United Nations, Department of Economic and Social Affairs.
- Glossary: Local administrative unit (LAU). (2020). [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Local_administrative_unit_\(LAU\)](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Local_administrative_unit_(LAU)). Accessed 30 May.
- Gorman, R. F., & Krehbiel, T. C. (1997). Quality Management and Sustainability. *Quality Management Journal*, 4, 8–15. <https://doi.org/10.1080/10686967.1998.11919143>.
- Guha, J., & Chakrabarti, B. (2019). Achieving the Sustainable Development Goals (SDGs) through decentralisation and the role of local governments: A systematic review. *Commonwealth Journal of Local Governance*. <https://doi.org/10.5130/cjlg.v0i22.6855>.
- Güney, T. (2017). Governance and sustainable development: How effective is governance? *The Journal of International Trade & Economic Development*, 26, 316–335. <https://doi.org/10.1080/09638199.2016.1249391>.
- Gunning, J. P. (2003). *Understanding democracy: An introduction to public choice*. Nomad Press.
- Isaksson, R. (2009). *Total quality management for sustainable development: Focus on processes*. LAP LAMBERT Academic Publishing.
- Kaziliūnas, A. (2008). Problems of auditing using quality management systems for sustainable development of organizations. *Technological and Economic Development of Economy*, 14, 64–75. <https://doi.org/10.3846/2029-0187.2008.14.64-75>.
- Kitchen, L., & Marsden, T. (2011). Constructing sustainable communities: A theoretical exploration of the bio-economy and eco-economy paradigms. *Local Environment*, 16, 753–769. <https://doi.org/10.1080/13549839.2011.579090>.
- Kowalski, T., Pietrzykowski, M., Heciak, S. (2010). Development of the institutional framework of local government during the transition period. In *Institutional Change in the European Transition Economies. The Case of Poland*, 240–276. Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu.

- Kuei, C.-H., & Lu, MinH. (2013). Integrating quality management principles into sustainability management. *Total Quality Management & Business Excellence*, 24, 62–78. <https://doi.org/10.1080/14783363.2012.669536>.
- Ladner, A., Keuffer, N., Baldersheim, H., Hlepas, N., Swianiewicz, P., Steyvers, K., Navarro, C. (2019). *Patterns of local autonomy in Europe*. Governance and public management. Palgrave Macmillan.
- Loorbach, D. (2010). Transition Management for Sustainable Development: A Prescriptive, Complexity-Based Governance Framework. *Governance*, 23, 161–183. <https://doi.org/10.1111/j.1468-0491.2009.01471.x>.
- Lyons, M. (2007). *Place-shaping: a shared ambition for the future of local government: final report*. Stationery Office.
- Melkers, J., & Willoughby, K. (2005). Models of Performance-Measurement Use in Local Governments: Understanding Budgeting, Communication, and Lasting Effects. *Public Administration Review*, 65, 180–190. <https://doi.org/10.1111/j.1540-6210.2005.00443.x>.
- Montesinos, V., & Brusca, I. (2009). Towards Performance, Quality and Environmental Management in Local Government: The Case of Spain. *Local Government Studies*, 35, 197–212. <https://doi.org/10.1080/03003930902742971>.
- Nguyen, M., Phan, A., & Matsui, Y. (2018). Contribution of Quality Management Practices to Sustainability Performance of Vietnamese Firms. *Sustainability*, 10, 375. <https://doi.org/10.3390/su10020375>.
- OECD 2018 OECD Rural Policy Reviews: Poland 2018 OECD <https://doi.org/10.1787/9789264289925-en>.
- Olsson, J. (2009) Sustainable development from below: Institutionalising a global idea-complex. *Local Environment* 14, 127–138. <https://doi.org/10.1080/13549830802521436>.
- Patino-Ortiz, M., Galvez, E., Tejeida-Padilla, R., Patino-Ortiz, J. (2006) Organizational Development, Complexity and Dynamics of Systems.
- Poister, T. H., & Streib, G. (1999). Performance Measurement in Municipal Government: Assessing the State of the Practice. *Public Administration Review*, 59, 325. <https://doi.org/10.2307/3110115>.
- Reed, R., Lemak, D. J., & Mero, N. P. (2000). Total quality management and sustainable competitive advantage. *Journal of Quality Management*, 5, 5–26. [https://doi.org/10.1016/S1084-8568\(00\)00010-9](https://doi.org/10.1016/S1084-8568(00)00010-9).
- Regulation of the Minister of Infrastructure and development of November 10, 2015 amending the regulation on granting public aid under the Human Capital Operational Program. 2015.
- Rosner, A., Stanny, M. (2014). *Rural Development Monitoring. Stage 1. Spatial differentiation of the level of socio-economic development of rural areas in 2010*. Instytut Rozwoju Wsi i Rolnictwa Polskiej Akademii Nauk.
- Rosner, A., Stanny, M. (2016). *Rural Development Monitoring. Stage 2. Spatial differentiation of the level of socio-economic development of rural areas 2016*. Instytut Rozwoju Wsi i Rolnictwa Polskiej Akademii Nauk.
- Rosner, A., Stanny, M. (2017). *Socio-economic development of rural areas in Poland*. Warsaw: The European Fund for the Development of Polish Villages Foundation (EFRWP) : Institute of Rural and Agricultural Development, Polish Academy of Sciences (IRWIR PAN).
- Rosner, A., Stanny, M., Łukasz Komorowski. (2018). *Rural Development Monitoring. Stage 3. Socio-economic structures, their spatial diversity and dynamics*. Instytut Rozwoju Wsi i Rolnictwa Polskiej Akademii Nauk.
- Satterthwaite, D. (2010) The role of cities in sustainable development Boston University's Frederick S. Pardee Center for the study of the longer-range future.
- Scarlett Epstein, T., & Jezeph, D. (2001). Development—There is Another Way: A Rural-Urban Partnership Development Paradigm. *World Development*, 29, 1443–1454. [https://doi.org/10.1016/S0305-750X\(01\)00046-8](https://doi.org/10.1016/S0305-750X(01)00046-8).
- Sierak, J. (2016). The role of local government in the process of stimulating the development of the local economy. *Journal of Management and Financial Sciences*: 61–82.
- Siva, V., Gremyr, I., Bergquist, B., Garvare, R., Zobel, T., & Isaksson, R. (2016). The support of Quality Management to sustainable development: A literature review. *Journal of Cleaner Production*, 138, 148–157. <https://doi.org/10.1016/j.jclepro.2016.01.020>.
- Stanny, M., Czarnecki, A. (2010). Level and determinants of sustainable rural development in the Region of Green Lungs of Poland. *Rural Areas and Development, European Rural Development Network 7*. Unknown: 1–16. <https://doi.org/10.22004/AG.ECON.139802>.

- The Sustainable Development Goals: What Local Governments Need to Know. 2015. UCLG.
- Tomor, Z., Meijer, A., Michels, A., & Geertman, S. (2019). Smart Governance For Sustainable Cities: Findings from a Systematic Literature Review. *Journal of Urban Technology*, 26, 3–27. <https://doi.org/10.1080/10630732.2019.1651178>.
- UCLG: The sustainable development goals: What local governments need to know. 2020. <https://www.worldurbancampaign.org/uclg-sustainable-development-goals-what-local-governments-need-know>. Accessed 30 May.
- Wheeler, S. (2002). Constructing Sustainable Development / Safeguarding Our Common Future: Rethinking Sustainable Development. *Journal of the American Planning Association*, 68, 110–111.
- Woods, M. (2012). New directions in rural studies? *Journal of Rural Studies*, 28, 1–4. <https://doi.org/10.1016/j.jrurstud.2011.12.002>.
- Żabiński, M. (2012). Samocena systemu zarządzania w jednostkach samorządu terytorialnego. Porównanie metody „Planowania Rozwoju Instytucjonalnego” i „Wspólnej Metody Oceny CAF”. *Zarządzanie Publiczne*: 57–76.
- Żabiński, M. (2016). The usage of quality management methods in local government. In *Contemporary concepts of public management. Public sector modernization challenges*, 379–392. Fundacja Gospodarki i Administracji Publicznej.
- Zeemering, E. S. (2018). Sustainability management, strategy and reform in local government. *Public Management Review*, 20, 136–153. <https://doi.org/10.1080/14719037.2017.1293148>.
- Zhang, N., Li, Y. P., Huang, W. W., & Liu, J. (2014). An Inexact Two-Stage Water Quality Management Model for Supporting Sustainable Development in a Rural System. *Journal of Environmental Informatics*, 24, 52–64. <https://doi.org/10.3808/jei.201400274>.

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