Stanisław Gasik

A framework for analysing differences between public-sector and other-sector projects

Abstract

Objectives: The purpose of this paper is to create a model of public-sector and other-sector projects.

Research Design & Methods: An extensive review of literature was performed. The snowball approach was applied for collecting relevant papers. Models of differences between public-sector organisations and other organisations were chosen as the reference models for building a model for project level.

Findings: There are differences between managerial processes between public-sector and other-sector projects in all project management areas (integration management, scope management, cost management, schedule management, quality management, hr management, communications management, risk management, procurement management, and stakeholder management). Hence the most adequate model for explaining these differences is the dimensional model.

Implications / Recommendations: Project managers will be able to better align their managerial methods to the sector in which project are implemented. For instance, in public-sector projects in the area of HR management motivation should be more focused on non-financial factors.

Contribution / Value Added: The proposed model is the first, original, comprehensive model describing the differences between public-sector and other-sector projects.

Keywords: Project management, public sector, dimensional model, inter-sectorial differences

Article classification: Theoretical article

JEL classification: D73, H83, O22

1. Introduction

1.1. The importance of public-sector projects

Public projects and their aggregates, programs, play an increasingly important role for the development of public administrations and economies of all countries. They are the main managerial tool for any policy and strategy implementation (Lane, 2000, p. 98; Cochran & Malone, 1995, p. 1; Connell, 2010; UK Government, 2013; and many others). When a need for an intervention in any public area arises, analysis is performed and reports are issued. On the basis of them policies describing the government's or other public organisation's intentions are formulated. The policies are converted into strategies with

Stanisław Gasik
Academy of Finance and Banking Vistula
ul. Stokłosy 3
02-787 Warszawa
sgasik@sybena.pl

measurable goals, budgets and timelines. One of the main tools for strategy implementation are projects. Projects may be grouped into portfolios (sets of projects and/or programs achieving organisation's strategic goals, PMI, 2013a) and/or programs (groups of projects managed together in order to achieve better benefits than sums of benefits of projects managed independently, PMI, 2013b). Projects and programs deliver products. Their usage causes changes consistent with the policies' intentions and with the strategic goals. Observation of the achieved effects may cause the initiation of new public initiatives.

The role of projects in policy implementation is schematically shown in Figure 1.

From the quantitative perspective, according to data from the World Bank (2016) 22% of world's $78 trillion GDP is spent on new capital formation, i.e. on projects. This would equate to about $17 trillion as the world's annual budget for projects. Public-sector projects are, by their nature, significantly larger than private ones (Kwak et al., 2014), so they account for a significant part of this budget.

However, the growth of the significance of public-sector projects has not been accompanied by adequate advancement of knowledge about their management.

1.2. Approaches to defining differences between public-sector and other-sector projects

When analysing project management literature, we may find different approaches, stated explicitly or implicitly, to the differences between public and other-sector projects.

The first group of researchers do analyse public projects, but formulate conclusions in a general way, not limiting their scope of validity to public projects (e. g. Chou & Yang, 2012; Duffield & Whitty, 2016; Fu & Ou, 2013).

Authors who do not refer at all to the sector in which projects are make up the second group, including Savelsberg et al. (2016) and Damm & Schindler (2002).

The third group of researchers conduct research on public projects. Some of them explicitly formulate their thesis of dissimilarity of public-sector projects and other projects (e.g. Tabish & Jha, 2011; Rose, 2006). The others implicitly or explicitly state that their findings are valid only for public projects,
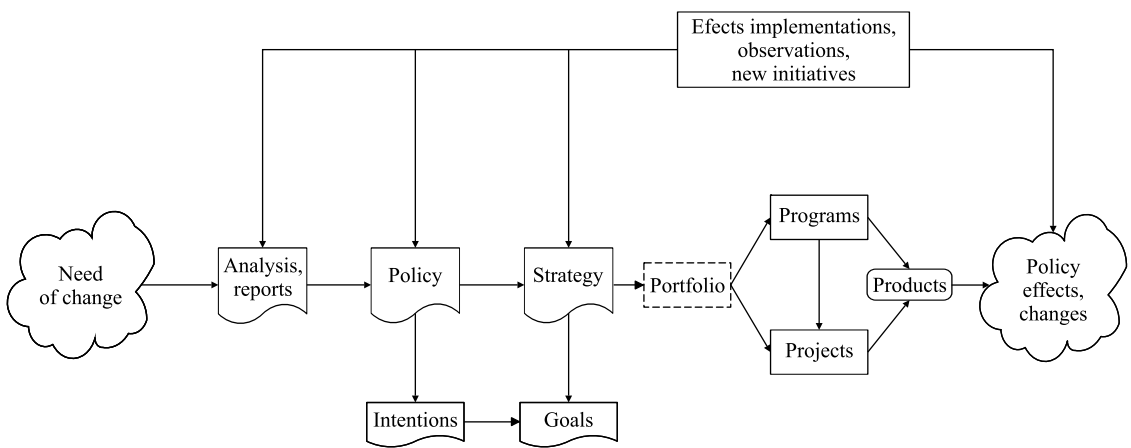

Figure 1. The lifecycle of policy implementation
Source: own work.

(e. g. Faridian, 2015; Kim & Lee, 2009; Kwak & Smith, 2009; and Skulmoski & Hartman, 2010).

The fourth group is those who, while characterising the analysed sample of projects state that both public and private projects were analysed, and then formulate proposals for the whole population of projects (e. g. Helm & Remington, 2005; Reich, 2007; Eden et al., 2005; Male et al., 2007).

The fifth group of researchers deal explicitly with differences between public-sector and other-sector projects, trying to check whether differences between these groups of projects exist. Some of these studies find such differences (e. g. Dilts & Pence, 2006; Coster & Van Wijk, 2015; Hvidman & Andersen, 2014), others do not (for example Hobbs & Aubry, 2008; Ramos et al., 2016).

From the theoretical point of view, the existence of – explicitly or implicitly formulated – five different approaches to differences between public-sector and other-sector projects shows how unstructured knowledge about public projects is, particularly with regard to differences between public and other-sector projects. What is missing from project management literature is a conceptual framework that clearly articulates the differences between public-sector and other-sector projects.

1.3. Improving public-sector project performance

The impact of management methods on the effects of public-sector projects' successes and failures is, as in each area of management, significant. From the practical point of view, the reasons for failures of public-sector projects may be the application of too general or inadequate management methods to public-sector projects.

One of the ways to improve the management of public-sector projects could be indicating differences between public-sector projects and projects of other-sectors and then, based on those differences, defining improved managerial methods adequate to public-sector projects.

This article contains a systematic attempt to organise the concepts related to differences between public-sector and other-sector projects. It may have both theoretical (systemising the knowledge about differences between public and other-sector projects) and practical (developing better ways of public-sector project management) implications.

2. The structure of inter-sectorial project management differences

2.1. Public-sector projects and their management

Public projects are those whose products are used by public and where profitability is not the main goal. Government projects are those public projects that are carried out by decisions of public-sector institutions. The narrowest concept is the public-sector project. It is a government project for which a government institution bears the full responsibility for implementation. Figure 2 shows the relationships between these three concepts.

According to one of widely accepted definitions an organisation is a group of people who work together to pursue a goal (Rainey, 2014, p. 13; George & Jones, 2012, p. 5; Daft, 2010, p. 7;
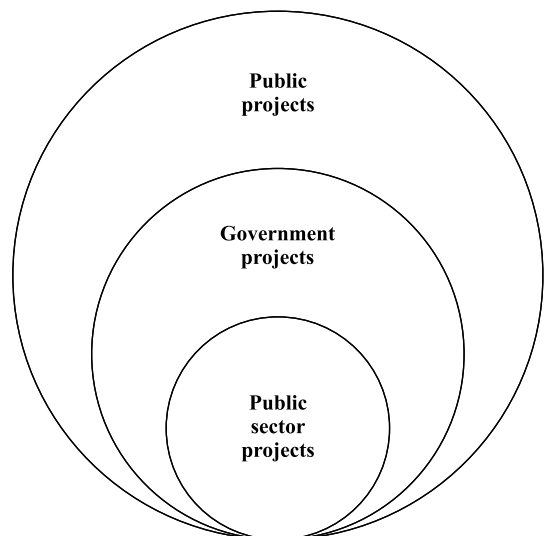

Figure 2. Types of public projects

Source: own work.

and many others). Projects fully comply with this definition – they are groups of people who work together to achieve a goal. Projects are defined as a sub-type of temporary organisations (Lundin & Soderholm, 1995; OGC, 2005, p. 7; Turner et al. 2010, p. 14; PMI, 2013, p. 3; and many others). The taxonomy of organisations with permanence v. temporariness as the main classifying criterion is schematically presented in figure 3.

Project management can be defined in two dimensions: by the type of sector and the type of management. In the sector dimension we focus only on the division into public sector and other sectors. In the management dimension we have project management and operational management (PMI, 2013b, p. 27). Hence public-sector project management is defined by the project management, public-sector organisations management and sector
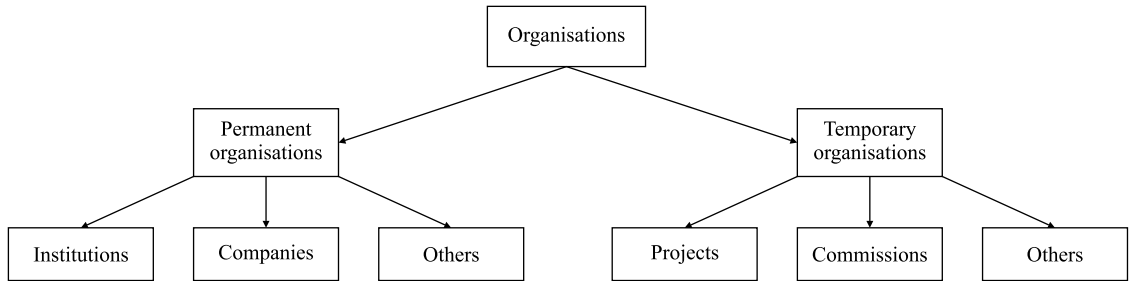

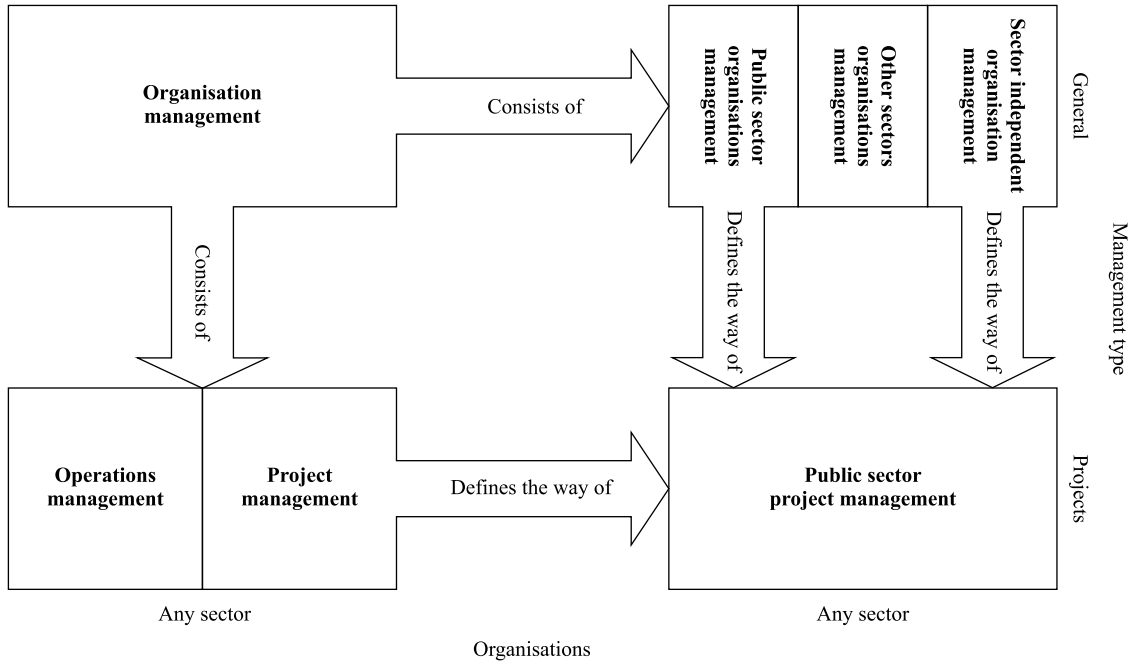Figure 3. Types of organisations

Source: own work.

Figure 4. The context of the public-sector project management

Source: own work.

independent organisation management. These relationships are shown in Figure 4.

Public-sector project management involves the processes, techniques and functions:
– specific to the public sector
– sector independent
for areas of
– general management (applicable to projects) and
– project management.

Hence the discussion about cross-sectorial project management differences should include the discussion about the nature of the differences between organisations from different sectors, and the discussion about the nature of differences between public-sector projects and projects of other sectors.

2.2. Approaches to defining differences between public-sector and other-sector organisations

The research on organisations has built three main models of the differences between public-sector organisations and organisations from other sectors (Scott & Falcone, 1998):
– the generic model,
– the core model,
– the dimensional model.

According to the generic model there are no fundamental differences between public and business organisations. In the area of projects this approach would mean that there are no differences between public-sector projects and projects of other sectors.

According to the core model there are substantial differences between public and organisations from other sectors (e.g. Bozeman & Bretschneider, 1994). The differences stem mainly from the formal status of public organisations.

The dimensional model is the one in which the "publicness" of an organisation can be viewed in several dimensions (such as ownership, funding, mode of public control). For each of them a continuum from fully private to fully public may be observed. Therefore organisations can be more or less public.

2.3. The structure of project management

Project management knowledge may be divided into several areas. The PMBOK® Guide (PMI, 2013) divides this knowledge into ten areas (specified below) that become the dimensions for potential differences. Integration management involves integrative processes, such as identifying, unifying and co-ordinating project activities, which are crucial for achieving project success. Scope management involves processes required for a project to ensure that it includes all of the and only the work needed to achieve its success. Time management involves processes needed for timely completion of the project. Cost management involves those processes which are needed to complete a project within the approved budget. Quality management involves those processes which are responsible for satisfying the needs for which the project was undertaken. Human resources management involves processes for ensuring that a project will be performed by a collaborating team of qualified people. Communication management involves processes responsible for providing all project team members and the project environment with needed information. Risk management is responsible for decreasing the probability and impact of threats and increasing probability and impact of project opportunities. Procurement management involves processes for buying or acquiring goods and services from outside of the performing organisation. Stakeholder management is the processes of interaction with project stakeholders, including their engagement in project decisions and assuring their satisfaction, if possible.

2.4. Hypothetical model of differences between public-sector and other-sector projects

It is possible to obtain knowledge that in certain management areas public-sector projects differ from projects of other sectors while in others they do not differ. This approach moves the issue of project inter-sectorial differences from the
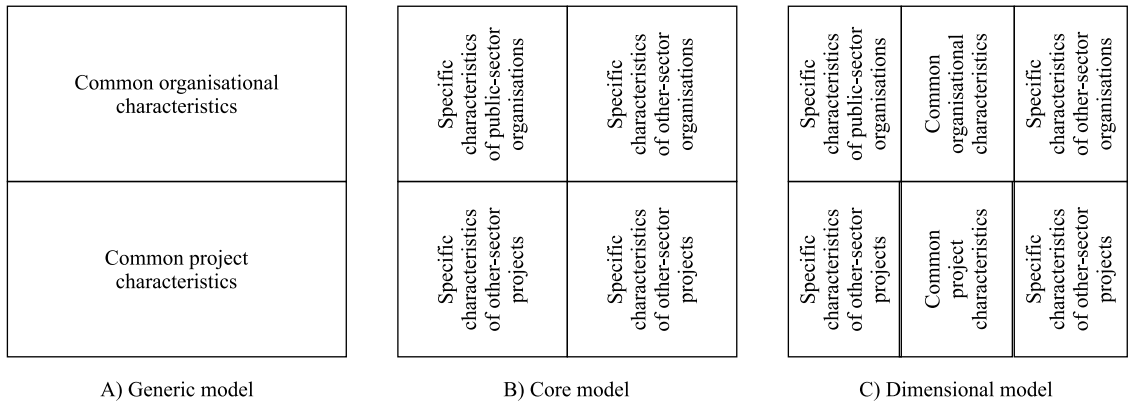
Common organisational characteristics			Specific characteristics of public-sector organisations	Specific characteristics of other-sector organisations		Specific characteristics of public-sector organisations	Common organisational characteristics	Specific characteristics of other-sector organisations
Common project characteristics			Specific characteristics of other-sector projects	Specific characteristics of other-sector projects		Specific characteristics of other-sector projects	Common project characteristics	Specific characteristics of other-sector projects

A) Generic model	B) Core model	C) Dimensional model

Figure 5. Possible models of the differences between projects of different sectors

Source: own work.

"constituting" dimension (such as ownership or funding) to the managerial dimension of integration management, quality management, etc.

Different models for the differences between the public-sector organisations and other organisations, extended to the differences between public-sector projects and other-sector projects, are shown schematically in Figure 5.

2.5. The research hypothesis and paper structure

The rest of this article is devoted to verification of the hypothesis that the dimensional model best explains the differences between public-sector projects and projects of other sectors. It has the following structure. First we present the results of research on the comparison of public sector organisations and projects with organisations and projects from other sectors. Papers on inter-sectorial differences, both at the organisational as well as the project level, have been collected using the snowball approach (Wohlin, 2014). For the construction of our model division into knowledge areas, originally defined for project management (chapter 2.3 above), we have expanded "up" to management in organisations of any type. Then, in order to assess the adequacy of

the presented above models at the aggregate level, taking into account the differences in all areas, we will refer to the adequacy of the three presented models. In the summary we will describe the conclusions, both theoretical and practical, which for each management areas arise from the identified differences.

3. The classification of research results

The results of analysing the differences between public-sector and other-sector projects in these management areas are presented in the following sections. In each section, according to the multi-dimensional nature of project management (Figure 4), we include the results of research performed at the general organisational level as well as that performed at the project level.

3.1. Integration management

Public-sector projects are exposed to political influences to a far greater extent than private projects (Kwak et al., 2014; Kassel, 2010; Pūlmanis, 2015; O'Leary & Williams, 2008; Dilts & Pence, 2006). Decisions concerning the commencing of public-sector projects, developed on the basis of relevant analysis, may be changed by politicians

(Spittler & McCracken, 1996; O'Leary & Williams, 2008).

Public organisations differ from private organisations in terms of ways of defining and achieving their goals. A private organisation's main goal is profit, while for public organisations there may be multiple goals, such as efficiency, public accountability, honesty, openness, responsiveness to policy, fairness, due process, social equality, the criteria for the distribution of manufactured goods, and correct moral behaviour (Boyne, 1998; Rainey, 2014). Wirick (2009) and Pūlmanis (2015) also note that public-sector projects do not have a single goal of profit maximisation as it is in private projects. The variety of goals may be due to the large number of stakeholders in public-sector projects (Mihăescu & Ţapardel, 2013).

There is greater impact of red tape on the functioning of managers in the public sector than in the private one (Bozeman et al., 1992). Compliance with procedures in the public sector is considered one of the success factors. Research conducted in the project area in general confirms the results of analysis of general organisations. It may be concluded that public-sector projects are more bureaucratic than projects of other sectors.

The constraints resulting from the project-control process are more significant in the public sector. In the public sector oversight mechanisms overlap, for example, from regulatory bodies, audit offices, financial chambers, legislative bodies, and elected officials (Wirick, 2009).

Governance and management in the public sector are more precisely separated than in the private sector. Usually there are fewer decision gates in the public-sector than for private-sector projects (Williams et al., 2012). Due to the large number of stakeholders in public-sector projects, it is particularly important to establish and apply formal governance structures (Barkley, 2011; Kwak et al., 2014).

3.2. Scope management

In non-project, permanent organisations the scope is defined historically and/or by their statutes. Hence, scope management is more important for projects than for general organisations. There was little reason to analyse the differences between public and private organisations in the scope management area. One of the differences in this area identified at the organisation level is greater stability of production in the public sector than in the private one (Meier & O'Toole, 2011). A difference identified at the organisation level, which may be relevant to projects, is the greater complexity of work in the public sector (Boyne, 1998).

Each project has specific, originally defined needs and requirements. These requirements, due to the larger number of stakeholders of public-sector projects (section 4.10), may be varied, because they reflect the needs of a larger number of stakeholders. Specific for the project level is the difference of scope sizes: the public-sector projects are usually larger in size (Kwak et al., 2014) and the scope is more diverse (Shen et al., 2014). The project scope significantly changes over time (Pūlmanis, 2015).

3.3. Cost management

Possession of an organisation by the government significantly affects the processes of budgeting and accounting (Rainey & Bozeman, 2000). Budgets of public organisations are approved by bodies external to them (Bretschneider, 1990). Usually there are no direct financial relationships between the service provider and the customer. The essential financial decisions related to revenues and incomes of public organisations are made outside of them. Public organisations tend to have higher unit prices than in the profit-oriented private sector (Spicker, 2009). Since public services rarely take into account customer preferences, the power of demand is minimised, the efficiency of resource allocation is lower in the public sector

than in the private sector (Rainey, 2014). Public customers less frequently delay their payments, which may suggest that they are less concerned with project finances than private customers (Bageis & Fortune, 2009). Generally, the public sector is less interested in the costs of projects than the private sector (Hasty et al., 2012).

3.4. Schedule management

Schedule – which should have a well-defined end – is more specific to projects than to other types of organisations. That is probably why researchers are less interested in schedule management and its inter-sectorial differences in organisations other than projects.

Public-sector projects are characterised by the long life-cycle of their products (Kwak et al., 2014). This is inconsistent with the projects' planning cycle, which may be shorter than in the private projects due to electoral cycles (Wirick, 2009). And this is also contrary to the generally longer duration of public-sector projects than of private ones (Hobbs & Aubry, 2008). Public-sector projects have the highest rate of schedule overruns (Zwikael, 2009).

3.5. Quality management

In public-sector organisations there often is no competition for the provision of services (e. g. penitentiary services, traffic regulation, granting of permits), which is not conducive to improving their quality (Boyne, 1998; Fottler, 1981; Meier & O'Toole, 2011). Still, in many developed countries some public services, e. g. those related to health or education, operate in a competitive environment. In this situation a competitive pressure, which may lead to improvements in quality, is present.

The lower quality of the staff of public organisations is not conducive to the quality of public-sector projects (Mouly & Sankaran, 2007). Regardless of that (or because of that), Kwak et al. (2014) suggest development of especially high quality-management processes for public-sector projects.

3.6. HR management

Numerous studies report lesser work involvement of public-sector workers than those of other sectors (Rainey et al., 1986; Boyne, 1998; Subramanian & Kruthika, 2012; Rainey, 2014). The lower involvement is accompanied by smaller external satisfaction from working in the public sector (Wang et al., 2012).

Public-sector employees are less vulnerable to external motivations (Buelens & Van den Broeck, 2007), they attach less weight to financial incentives (Rainey & Bozeman, 2000; Rainey et al., 1986; Rainey, 2014). Public-sector workers are motivated by achievements, and private-sector workers by power (Andersen, 2010). In the public sector the factors most motivating staff to work are stable, secure future, a chance to learn something new, and the opportunity to use special abilities (Jurkiewicz et al., 1998), the importance of public services, participating in the implementation of public policies, sacrifice for others, responsibility and integrity (Rainey & Bozeman, 2000); while in the private sector the prime motivating factors are high salary, the chance of being a leader, and the chance for promotion (Jurkiewicz et al., 1998).

Managers in the public sector do not have the appropriate authority to efficiently manage their personnel (Rainey & Bozeman, 2000). The charisma of leaders in the public organisations is more important than in the private sector (Fottler, 1981). Managers in private organisations have a greater variety of internal organisational activities, greater autonomy in terms of their application, and better options for use of the environment (Hvidman & Andersen, 2014). Executives in the public sector are less willing to delegate power (Rainey, 2014).

The lack of competitiveness of public organisations on the labour market, compared with private companies, results in a lower quality of staff in public-sector projects than in private ones (Mouly & Sankaran, 2007). Public-sector project managers concentrate on one project, while in the private sector they are interested in many projects implemented in one company

(Coster & Van Wijk, 2015). On the other hand, Wirrick (2009) states that the long-term nature of employment in the public sector, resulting from the system of protection of civil servants and employment, results in turn in limited opportunities for creating and modifying project teams.

Because of many relationships existing between individuals and organisational units in the public sector, the need to define clear leadership and accountability rules is greater than in the private sector. As public-sector managers have fewer mandates than in the private sector, the choice of a project leader having both technical and political skills is particularly important (Cats-Baril & Thompson, 1995).

Possession of an organisation by the government significantly affects the processes of HR management (Rainey & Bozeman, 2000) as well as the behaviour of employees.

3.7. Communications management

Public organisations are more transparent, they transmit more information about their processes and decisions to their environments (Meier & O'Toole, 2011). Studies conducted in the public-sector have shown that clarity of objectives is positively correlated with the effectiveness of communications, both internally and externally. The higher level of red tape, which characterises the public sector, is associated with less effective communications. The impact of red tape on communications may be overcome by clarity of objectives and appropriate organisational culture (Pandey & Garnett, 2006).

Information about public-sector projects must be accessible to many stakeholders, especially to the public, and cannot be kept secret (Rosacker & Rosacker, 2010). At the same time, institutional barriers in public-sector projects make it difficult to share information (Ning, 2014).

Several differences between public-sector projects and other-sector projects in the communications area stem from variety of the stakeholders of public-sector projects.

3.8. Risk management

In public-sector organisations there is more emphasis than in the private sector on risk avoidance (Fottler, 1981). Public employees are more cautious (Rainey, 2014). The level of control is greater in public-sector organisations, and research has shown that managers in organisations with higher levels of internal control are less willing to take risks than in those where the level of control is lower. As noted above, the objectives of public organisations are less clearly defined than in the private sector, and managers whose goals are vaguely defined are less likely to take risks than those who have well-defined goals (Bozeman & Kingsley, 1998).

Public-sector projects are inherently risky, due to longer planning horizons and the more complex environment (Pūlmanis, 2015). Therefore it is particularly important in the public sector to develop contingency plans and risk monitoring processes and then use those formal risk management processes (Kwak et al., 2014). Governance, management and contracts are considered the main sources of risks for large public-sector projects (Patanakul, 2014).

Penalties for non-compliance with regulatory restrictions and possible criticism from the political opposition cause negative risk attitudes in public-sector projects (Wirick 2009).

3.9. Procurement management

The primary characteristics distinguishing procurement in public-sector organisations from procurement in private-sector organisations is its formalisation. The government has significant impact on purchasing processes in public-sector organisations (Rainey & Bozeman, 2000).

Bid evaluation criteria are different in public-sector projects than in private projects (Bretschneider, 1990). The price criterion often plays the decisive role in public-sector projects (Fottler, 1981). The flexibility of the procurement process is smaller in public-sector projects than in other projects (Drew & Skitmore, 1997; Shen et al., 2004). This process is more complex in public-

sector projects than in private projects (Rahman & Kumaraswamy, 2004).

Due to the negative risk attitude in public organisations (Fottler, 1981), "off-the-shelf" solutions are, where possible, suggested for public-sector projects rather than the highly risky development of new products (Kwak et al., 2014).

The parties involved in public-sector projects are more constrained in the implementation of relational contracting because regulations prohibit certain behaviour by public officials, which makes it difficult to form relationships (Ling et al., 2013). Public-sector regulations often prohibit taking into account the history of previously completed contracts in the process of bid evaluation, which is natural in the private sector (Rahman & Kumaraswamy, 2004).

3.10. Stakeholder management

The external environment is an important sector differentiating factor (Bretschneider, 1990). Public-sector organisations, because of their social role, are subject to greater involvement of external authorities and interest groups (Rainey, 2014) and subject to more external influences than private firms (Torres & Pina, 2004). But the external environment of public organisations is more stable (Meier & O'Toole, 2011).

Formal constraints arising from supervision by legislators, the hierarchy of executive agencies, regulatory agencies and the courts apply to public-sector organisations (Rainey, 2014). These constraints apply to salaries, promotions and disciplinary actions in public-sector organisations (Rainey, 2014).

Public organisations have greater number of external sources of power and influence, involved in the process of governance (Rainey, 2014). Politics is a special area influencing public organisations (Spicker, 2009). Public organisations have to deal with a large variety and intensity of informal political influences. Political impact on public organisations is greater than on private ones, due to, inter alia, the need to raise funds

and mandates for action in a non-market way (Rainey, 2014).

The number of external interventions and interruptions imposed by external interest groups and by political factors is expected to be greater in public organisations than in private companies (Rainey, 2014). The set of options to block the influence of environment is greater in the public sector than in the private one. The utilisation of environment is more effective in the private sector, because private managers have more options for acting (Meier & O'Toole, 2011).

The researchers working at the project level mostly confirm results identified at the general organisational level. Public-sector projects have a greater number of stakeholders than private ones (Mihăescu & Ţapardel, 2013; Kwak et al., 2014; Pūlmanis, 2015). Public-sector projects are more exposed to external factors than private firms (Gomes et al, 2012). The most important public-sector project stakeholders are the communities for which these projects are performed (Wirick 2009), to which they are responsible and accountable (Mihăescu & Ţapardel, 2013; Pūlmanis, 2015). Other important project stakeholders include the legislators whose requirements must be met, as well as the projects' shareholders (Kassel, 2010). Public-sector projects operate under media scrutiny (Wirick, 2009). A specific type of external stakeholders for public-sector projects are other public agencies (Kwak et al., 2014). The oversight mechanisms of the public sector, acting on many levels and having possibly conflicting interests, further increase the number of project stakeholders (Wirick, 2009).

The number of internal customers may be greater in public-sector projects than in private ones (Hobbs & Aubry, 2008). Public-sector projects require the co-operation and effectiveness of organisation beyond the project team (Wirick 2009). Due to the constraints resulting from regulations, the need to convince employees to change processes in public-sector projects is greater (Cats-Baril & Thompson, 1995).

Public-sector projects must in addition take into account the interests of politicians (Kwak et al.,

2014), who are not always familiar with project management (Pūlmanis, 2015). The political environment may be hostile to projects (Kassel, 2010). Public-sector projects are vulnerable to political changes (Kwak et al., 2014). Elected politicians and executives in the public sector have enough power to start, kill, or change projects (Dilts & Pence, 2006).

4. Summary and conclusions

In each of the analysed management areas there are differences between public-sector projects and projects of other sectors. Hence the generic model (Figure 5A), assuming that there are no differences between public-sector and other-sector projects, may be excluded from further consideration. Public-sector projects inherit the differences between public organisations and organisations of other sectors. There are four management areas in which these differences are especially significant. These are integration management, HR management, procurement management and stakeholder management. The differences regarding communications management area arise due to consequences of differences in the stakeholder management area. Less significant differences have been identified by researchers in the areas of cost management, risk management, quality management, scope management, and the schedule management.

The model in which differences exist in some areas and they are less observable in others (i.e. common processes, techniques and characteristics are relevant) is at the organisation level called the dimensional model (Figure 5C). So, the dimensional model of differences, and not the core one (Figure 3B), is relevant for the project level.

This dimensional model may be treated as a conceptual framework enabling discussion of the nature of public-sector projects, and the differences between these projects and other-sector projects. The framework has been verified by classifying literature from the projects differences area.

4.1. Theoretical implications

The theoretical implication of this framework is the possibility of further analysis of adequacy of adopting general differences between public organisations and organisations of other sectors at the project level. The analysis of existing literature shows also *terrae incognitae* of research on these differences. Are the differences in the quality management or scope management really less important, or has insufficient research been performed there? The other proposition is that, at least in research in the four management areas where the differences are more significant, the project sector should be regarded as an explanatory variable of studied phenomena. The influence – or lack of influence – of this variable could be the basis for further elaboration of a model for differences (if impact is identified) or general project management models (if the sector's impact would not be significant).

4.2. Practical implications

Pointing out the differences between the public-sector projects and other-sectors projects management areas is valuable for the project management teams as well as for the staff responsible for project management in public as well as in the other sector organisations.

In the area of integration management attention should be paid to the way of defining project goals. In public-sector projects financial issues are not necessarily critical, as they usually are in the private sector. Hence it is necessary to use project evaluation techniques based on non-financial parameters. As the public sector is driven by many procedures, regulations and guidelines, it is also necessary to emphasise there the importance of achieving goals – and not the very compliance with the procedures.

The making of public-sector project decisions by politicians in the public sector should be based on reliable data. In order to provide such data appropriate institutions and procedures should be

established, as several governments have done, e.g. the Independent Evaluation Office in India (IEO, 2016), the Quality on Entry procedure in Norway (NTNU 2013), and the OGC Gateway Process in the United Kingdom (OGC, 2007).

The processes of defining the scope of public-sector projects, due to the participation of a larger number of stakeholders than in private projects, are more complex than those of the private sector. Therefore these processes should be more precisely defined. The identifying of external stakeholders, included in the process of defining the scope of a project, should be a mandatory part of this process.

In public-sector projects, because decisions on allocating project budget are often made outside of the project performing organisation, and customers usually do not pay directly for project services, there is no direct mechanism of pressure on project costs. The way to overcome these problems may be performing independent audits and allowing for price competition by simultaneous provision of similar services by public and private-sector organisations and companies.

Factors that positively affect project delays (i.e. reduce them) in the public sector are, inter alia, co-ordination of the participation of stakeholders, the way of implementing changes by the owner during the project, and careful preparation of schedules and changes (Hwang et al., 2013).

The low quality of public-sector projects, often resulting from a low quality of project staff, can be improved by increasing salaries of project team members and particularly their managers. The hiring of Richard Granger in 2002 as the director for the implementation of the IT system for the National Health System with the highest salary among civil servants in Great Britain at that time (EHI, 2002) contributed to a significant improvement of the implementation process of that system (O'Dowd & Cross, 2007). Another way of quality management in the public sector may be the introduction of customer surveys assessing the quality of services provided by projects.

Motivation systems in the public sector should be aimed at internal rather than external incentives. When recruiting team members for public-sector projects their significance for the community should be emphasised and not material incentives. When recruiting project managers, because formally defined processes in the public sector usually limit the possibilities for formal activities, more attention should be paid to personality traits, in particular to leadership capabilities. Due to the diversity of stakeholders, it is important to employ managers with good negotiating skills. In order to ensure more involvement, the goals of the work should be defined more precisely, which will allow for a more precise assessment of their achievement.

Due to the large number of stakeholders in public-sector projects, good communication, both with internal and external stakeholders, is an important success factor for these projects. Information on the implementation of public-sector projects, unlike in the private sector, must be available to external stakeholders, based on FoI-type regulations (e. g. US Congress, 1966) or project implementation regulations (e. g. Congresso de la Nacion Argentina, 1999). Project teams must therefore create and publish relevant information about project implementation.

Public-sector projects are exposed to a different set of risks than projects in other sectors, e.g. political risks, risks related to the participation of public stakeholders and risks stemming from public regulations. The managers of public-sector projects are subject to greater control and therefore they are not willing to take risks (Bozeman & Kingsley, 1998). At the same time, these projects, due to their longer duration, are subject to greater risks. This can lead to hiding and not reporting project risks. The way to overcome this problem should be independent reviews of project plans, performed in order to, inter alia, identify risks (Integrated Baseline Review, IBR, GSA et al, 2005).

Excessive formalisation of public sector purchases seems to be their inherent feature. The way to overcome this problem is to create, at the level

of the project-implementing institution, a well-trained, specialised purchasing team, supporting project procurement processes. At the regulatory level, non-price criteria should be allowed or enforced, and the history of co-operation with tenderers should be taken into account.

The number and importance of stakeholders means that stakeholder management is one of the most important areas of public-sector project management and should use proven techniques, such as stakeholder analysis or stakeholder circle (Bourne & Walker, 2008). It is desirable to involve the most important stakeholders in project management bodies. It is particularly important to involve stakeholders in the process of project definition and assessment of its effects (Peled & Dvir, 2012).

Many practical conclusions can be drawn from the presented considerations. Project-implementing organisations should prepare different courses of training for their project management personnel than permanent organisations.

References

Aubry, M., Richer, M-C., Lavoie-Tremblay, M. & Cyr, G. (2011). Pluralism in PMO performance: The case of a PMO dedicated to a major organisational transformation. *Project Management Journal*, *42*(6), 60–77.

Bageis, A.S. & Fortune, C. (2009). Factors affecting the bid/no bid decision in the Saudi Arabian construction contractors. *Construction Management and Economics*, *27*(1), 53–71.

Barkley, B.T. (2011). *Government Program Management*. New York: McGraw Hill.

Bourne, L. & Walker, D.H.T. (2008). Project relationship management and the Stakeholder Circle™. *International Journal of Managing Projects in Business*, *1*(1), 125–130.

Boyne, G.A. (1998). *Public Choice Theory and Local Government: A Comparative Analysis of the UK and USA*. London: Macmillan.

Bozeman, B. & Bretschneider, S. (1994). The "publicness puzzle" in organization theory: A test of alternative explanations of differences between public and private organizations. *Journal of Public Administration Research and Theory*, *4*(2), 197–223.

Bozeman, B. & Kingsley G. (1998). Risk culture in public and private organizations. *Public Administration Review*, *58*(2), 109–118.

Bozeman, B., Reed, P.N. & Scott, P. (1992). Red tape and task delays in public and private organizations. *Administration and Society*, *24*(3), 290–322.

Bretschneider, S. (1990). Management information systems in public and private organizations: An empirical test. *Public Administration Review*, *50*(5), 536–545.

Buelens, M. & Van den Broeck, H. (2007). An analysis of differences in work motivation between public and private sector organizations. *Public Administration Review*, *67*(1), 65–74.

Cats-Baril, W. & Thompson, R. (1995). Managing information technology projects in the public sector. *Public Administration Review*, *55*(6), 559–566.

Chou, J-S. & Yang. J.-G. (2012). Project management knowledge and effects on construction project outcomes: An empirical study. *Project Management Journal*, *43*(5), 47–67.

Cochran, C.L. & Malone, E.F. (1995). *Public Policy: Perspectives and Choices*. New York: McGraw-Hill.

Congreso de la Nacion Argentina (1994). *Ley 24.354. Sistema Nacional de Inversiones Públicas*. Buenos Aires: Congreso de la Nacion Argentina.

Connell, A.M. (2010). Policy success, policy failure and grey areas in-between. *Journal of Public Policy*, *30*(3), 345–362.

Coster, C.J. & van Wijk, S. (2015). *Lean Project Management: An Exploratory Research into Lean Project Management in the Swedish Public and Private Sector*. Umeå School of Business and Economics. Retrieved from http://www.diva-portal.org/smash/record.jsf?pid=diva2%3A850350&dswid=9324.

Daft, R.L. (2010). *Management, Ninth Edition*. Mason, OH, USA: South-Western Cengage Learning.

Damm, D. & Schindler, M. (2002). Security issues of a knowledge medium for distributed project work. *International Journal of Project Management*, *20*(1), 30–47.

Dilts, D.M. & Pence, K.R. (2006). Impact of role in the decision to fail: An exploratory study of terminated projects. *Journal of Operations Management*, *24*(4), 378–396.

Drew, D. & Skitmore, M. (1997). The effect of contract type and size on competitiveness in bidding. *Construction Management and Economics*, *15*(5), 469–489.

Duffield, S.M. & Whitty, S.J. (2016). Application of the systemic lessons learned knowledge model for organisational learning through projects. *International Journal of Project Management, 34*(6), 1280–1293.

Eden, C., Ackerman, F. & Williams, T. (2005). The amoebic growth of project costs. *Project Management Journal, 36*(2), 15–27.

EHI (2002). New Director General of NHS IT Appointed. EHI eHealth Insider, 05.09.2002. Retrieved from https://web.archive.org/web/20110927170626/http://www.e-health-insider.com/news/item.cfm?ID=257.

Faridian, P.H. (2015). Innovation in public management: Is public e-procurement a wave of the future? A theoretical and exploratory analysis. *International Journal of Public Administration, 38*(9), 654–662.

Fottler, M.D. (1981). Is management really generic? *Academy of Management Review, 6*(1), 1–12.

Fu, H.-P. & Ou, J.-R. (2013). Combining PCA with DEA to improve the evaluation of project performance data: A Taiwanese Bureau of Energy case study. *Project Management Journal, 44*(1), 94–106.

George, J.M. & Jones, G.R. (2012). *Understanding and Managing Organizational Behavior*. Sixth Edition. Boston, USA: Prentice Hall

Gomes, C.F., Yasin, M.M. & Small, M.H. (2012). Discerning interrelationships among the knowledge, competencies, and roles of project managers in the planning and implementation of public-sector projects. *International Journal of Public Administration, 35*(5), 315–328.

GSA, DoD & NASA (2005). *Federal Acquisition Regulation.* Washington: General Services Administration, Department of Defense, National Aeronautics and Space Administration.

Hasty, B.K., Schechtman G.M. & Killaly, M. (2012). Cloud computing: Differences in public and private sector concerns. *International Journal of the Academic Business World, 1*(1), 51–62.

Helm, J. & Remington K. (2005). Effective project sponsorship. An evaluation of the role of the executive sponsor in complex infrastructure projects by senior project managers. *Project Management Journal, 36*(2), 51–61.

Hobbs, B. & Aubry, M. (2008). An empirically grounded search for a typology of project management Office. *Project Management Journal, 39*(S1), 69–82.

Holt, G.D., Olomolaiye, P.O. & Harris, F.C. (1995) A review of contractor selection practice in the U.K. construction industry. *Building and Environment, 30*(4), 553–561.

Hvidman, U. & Andersen, S.C. (2014). Impact of performance management in public and private organizations. *Journal of Public Administration Research and Theory, 24*, 35–58.

Hwang, B.G., Zhao, X. & Ng, S.Y. (2013). Identifying the critical factors affecting schedule performance of public housing project. *Habitat International, 38*, 214–221.

Jurkiewicz, C.L., Massey, T.K. Jr. & Brown, R. G. (1998). Motivation in public and private organizations: A comparative study. *Public Productivity & Management Review, 21*(3), 230–250.

Kassel, D.S. (2010). *Managing Public-sector Projects: A Strategic Framework for Success in an Era of Downsized Government*. Boca Raton, USA: CRC Press.

Kim, S.E. & Lee J.W. (2009). The impact of management capacity on government innovation in Korea: an empirical study. *International Public Management Journal, 12*(3), 345–369.

Kwak, Y.H., Liu, M., Patanakul, P., Zwikael, O. & Allison, G.T. (2014). *Challenges & Best Practices of Managing Government Projects & Programs.* Newtown Square, USA: Project Management Institute, Inc.

Kwak, Y.H. & Smith, B.M. (2009). Managing risks in mega defense acquisition projects: Performance, policy, and opportunities. *International Journal of Project Management, 27*, 812–820.

Lane, J-E. (2000). *The Public Sector. Concepts, Models and Approaches*. London: Sage.

Ling, F.Y.Y., Ning, Y., Ke, Y. & Kumaraswamy, M.M. (2013). Modeling relational transaction and relationship quality among team members in public projects in Hong Kong. *Automation in Construction, 36*, 16–24.

Lundin, R.A. & Soderholm, A. (1995). A theory of the temporary organization. *Scandinavian Journal of Management, 11*(4), 437–455.

Male, S., Kelly, J., Gronqvist, M. & Graham, D. (2007). Managing value as a management style for project. *International Journal of Project Management, 25*, 107–114.

Meier, K.J. & O'Toole Jr., L.J. (2011). Comparing public and private management: Theoretical expectations. *Journal of Public Administration Research and Theory, 21*, 283–297.

Mihăescu, Ch. & Ţapardel, A.-C. (2013). A public administration based on project management. *Administration and Public Management*, *20*, 97–107.

Mouly, S.V. & Sankaran, J.K. (2007). Public- versus private-sector research and development: A comparative analysis of two Indian R&D project groups. *International Studies of Management and Organization*, *37*(1), 80–102.

Ning, Y. (2014). Quantitative effects of drivers and barriers on networking strategies in public construction projects. *International Journal of Project Management*, *32*, 286–297.

O'Dowd, A. & Cross, M. (2007). Richard Granger resigns as chief executive of Connecting for Health. *BMJ*, *334*(7607), 1290–1291.

O'Leary, T. & Williams, T. (2008). Making a difference? Evaluating an innovative approach to the project management Centre of Excellence in a UK Government department. *International Journal of Project Management*, *26*(5), 556–565.

OGC (2005). *Managing Successful Projects with Prince 2 ©*. London: TSO.

OGC (2007). *The OGC Gateway™ Process. A manager's checklist.* London: TSO.

Pandey, S.K. & Garnett, J.L. (2006). Exploring public-sector communication performance: Testing a model and drawing implications. *Public Administration Review*, *66*(1), 37–51.

Patanakul, P. (2014). Managing large-scale IS/IT projects in the public-sector: Problems and causes leading to poor performance. *Journal of High Technology Management Research*, *25*, 21–35.

Peled, M. & Dvir, D. (2012). Towards a contingent approach of customer involvement in defence projects: An exploratory study. *International Journal of Project Management*, *30*, 317–328.

PMI (2013). *A Guide to the Project Management Body of Knowledge PMBOK® Guide Fifth Edition*. Newtown Square, USA: Project Management Institute.

PMI (2013a). *The Standard for Portfolio Management Third Edition*. Newtown Square, USA: Project Management Institute.

PMI (2013b). *The Standard for Program Management Third Edition*. Newtown Square, USA: Project Management Institute.

Pūlmanis, E. (2015). Micro-economical aspects of public projects: Impact factors for project efficiency and sustainability. *PM World Journal*, *4*(6), 1–12.

Rahman, M.M. & Kumaraswamy, M.M. (2004). Contracting relationship trends and transitions. *Journal of Management in Engineering*, *20*(4), 147–161.

Rainey, H.G. (2014). *Understanding and Managing Public Organizations, 5th Edition*. San Francisco, USA: Jossey- Bass.

Rainey, H.G. & Bozeman, B. (2000). Comparing public and private organizations: Empirical research and the power of the a priori. *Journal of Public Administration Research and Theory*, *10*(2), 447–469.

Rainey, H.G., Traut C. & Blunt, B. (1986). Reward expectancies and other work-related attitudes in public and private organizations: A review and extension. *Review of Public Personnel Administration, 6*(3), 50–72.

Ramos, P., Mota, C. & Correa, L. (2016) Exploring the management style of Brazilian project managers. *International Journal of Project Management*, *34*(6), 902–913.

Reich, B.H. (2007). Managing knowledge and learning in IT Projects: A conceptual framework and guidelines for practice. *International Journal of Project Management*, *38*(2), 5–17.

Rosacker, K.M. & Rosacker, R.E. (2010). Information technology project management within the public-sector organizations. *Journal of Enterprise Information Management*, *23*(5), 587–594.

Rose, K.H. (2006). Cover to cover: Government extension to a guide to the project management body of knowledge (PMBOK® Guide) – Third Edition. *Project Management Journal*, *37*(4).

Savelsberg, Ch.M.J.H., Havermans, L. & Storm, P. (2016). Development paths of project managers: What and how do project managers learn from their experiences. *International Journal of Project Management*, *34*(4), 559–569.

Scott, P.G. & Falcone, S. (1998). Comparing public and private organizations. An exploratory analysis of three frameworks. *American Review of Public Administration*, *28*(2), 126–145.

Shen, L.Y., Li, Q.M., Drew, D. & Shen, Q.P. (2004). Awarding construction contracts on multicriteria basis in China. *Journal of Construction Engineering and Management*, *130*(3), 385–393.

Skulmoski, G.J. & Hartman, F.T. (2010). Information systems project manager soft competencies: A project-phase investigation. *Project Management Journal*, *41*(1), 61–80.

Spicker, P. (2009). The nature of a public service. *International Journal of Public Administration*, *32*(11), 970–991.

Spittler, J.R. & McCracken, C.J. (1996). Effective project management in bureaucracies. *Transactions of AACE International*, *6*(1), PM 6–1–PM 6–10.

Subramanian, S. & Kruthika, J. (2012). Comparison between public and private sector executives on key psychological aspects. *Journal of Organisation and Human Behaviour*, *1*(1), 27–35.

Tabish, S.Z.S. & Jha, K.N. (2011). Identification and evaluation of success factors for public construction project. *Construction Management and Economics*, *29*, 809–823.

Torres, L. & Pina V. (2004). Reshaping public administration: The Spanish experience compared to the UK. *Public Administration*, *82*(2), 445–464.

Turner, R., Huemann, M., Anbari, F. & Bredillet, Ch. (2010). *Perspectives on Projects*. London: Routlege.

UK Government (2013). *Major project management*. Retrieved from https://www.gov.uk/government/policies/major-project-management.

US Congress (1966) The Freedom of Information ACT (FOIA) 5 U.S.C. §. 552. Washington, DC: US Congress.

Wang, Y-D., Yang, Ch. & Wang, K.-Y. (2012). Comparing public and private employees' job satisfaction and turnover. *Public Personnel Management*, *41*(3), 557–572.

Williams, T., Klakegg, O.J., Walker, D.H.T., Andersen, B. & Magnussen, O.M. (2012). Identifying and acting on early warning signs in complex projects. *Project Management Journal*, *43*(2), 37–53.

Wirick, D. (2009). *Public-Sector Project Management: Meeting the Challenges and Achieving Results*. New Jersey, USA: John Wiley & Sons.

Wohlin, C. (2014). Guidelines for snowballing in systematic literature studies and a replication in software engineering. *Proceedings of EASE Conference*, May 2014, London, England.

World Bank (2016). *Little Data Book*. Washington, USA: International Bank for Reconstruction and Development / World Bank.

Zwikael, O. (2009). The relative importance of the PMBOK® Guide's nine knowledge areas during project planning. *Project Management Journal*, *40*(4), 94–103.