In pursuit of indicators: should they be the only success criteria for projects financed within the framework of Human Capital Operational Programme?

Beata Jałocha*

*Jagiellonian University, Łojasiewicza 4, Kraków 30-348, Poland

Abstract

Projects dedicated to labour market improvements in Poland that are funded within the framework of the Human Capital Operational Programme (HCOP) are perceived by financing bodies as successes when they are completed on time, within budget, and meet all specifications set in the project plan. Impact, product and result indicators are crucial for EU-funded projects. According to the rules, the national ministries try to achieve the indicators at the national level and divide (disaggregate) the indicators within regions using an algorithm.

As research shows, some of the indicators are averaged for an entire region and are not always adequate for the local situation in the district. The investigated local and regional labour market organizations measure projects’ effects by referring to the rates imposed at country level, but research has shown that sometimes these indicators have forced project managers to focus on the artificial rates, not on the quest for value creation for stakeholders through projects.

This paper is based on the analysis of evaluation reports on the implementation of the monitoring indicators for the HCOP and a subset of the data obtained from a broader research on project management in the Polish public labour market organizations. The main aim of this paper is to draw attention to the problems with the current method of setting and monitoring indicators for

*Corresponding author. Tel.: +48692117849; fax: 4812 6645859,
E-mail address: beata jalocha@uj.edu.pl
EU-funded projects and programs dedicated to labour market development. The author argues that the current method of determining HCOP indicators causes public organizations to place all their attention and focus on achieving top-down imposed indicators, which are often artificial and incompatible with local realities, rather than focusing on realizing value for stakeholders. This means that the success of HCOP projects is mostly defined by meeting indicators, instead of bringing value to the society.

© 2014 The Authors. Published by Elsevier Ltd. Open access under CC BY-NC-ND license. Selection and peer-review under responsibility of the IPMA.

Keywords: indicators; project; project management; EU project

1. Introduction

We can observe a global trend of converting more and more activities into projects, admiration of the method itself, and the seeming flexibility and freedom it brings to the world of management (Hodgson & Cicmil, 2006). In a situation where project work is being implemented into public organizations, which are organizations with a high degree of hierarchy and which are based on a long tradition of repetitive tasks, it creates additional difficulties. Administration through the adoption of project management as a form of achieving its goals is trying to become more flexible, modernize its operations, and sometimes adjust its organizational structures; however, it is very difficult to implement such change. A particular case of projects supervised by public authorities can be seen in the projects financed by the European Union: they support European policies in achieving their goals. EU-funded projects are perceived by financing bodies as successes when they are completed on time, within budget, and meet all specifications set in the project plan. Impact, product, and result indicators are crucial for EU-funded projects. According to the rules, the national ministries try to achieve the indicators at the national level and divide (disaggregate) the indicators within the regions using algorithms.

Zwikael and Smyrk (2011), in examining the statement that projects are successful when the primary outputs have been delivered according to certain criteria specified in the project plan, argue that this is a myopic view, although it has been cemented in conventional project practice as the iron triangle (or triple constraint). According to Müller and Turner (2007), project success criteria vary from project to project: ‘what is acceptable in one project without impact on perceived success (…) is abject failure in another project’. For many years, project researchers have attempted to capture the essence of what is behind project success, ‘a difficult and elusive concept, with many different meanings’ (Graeme & Fernandez, 2008). Both success and failure are difficult to define and measure, as they mean different things to different project stakeholders. Graeme and Fernandez (2008), citing Saarinen (1996) write that projects are necessarily different, however, and ‘the nature of each situation cannot be assessed by a simplistic one-dimensional measure of success. This means that a project ‘can still be considered successful if it does not meet timescales and budget. Project success extends beyond technical performance, cost and duration to dimensions such as user satisfaction and benefits’. It seems that in the EU-funded projects discussed in this paper, it is not always obvious and accepted that success is a multi-dimensional construct (which was described above), because the criteria for success are very rigid and based mostly on indicators imposed by the financing bodies. A project that does not achieve indicator targets will not be perceived as a success.

In this article, I discuss the problems that can be observed in EU-co-funded projects in which success criteria are based mostly on achieving imposed top-down indicators. Projects that have been analysed here are focused on labour market development and are funded by the Human Capital Operational Programme, mainly in Priority VI ‘The labour market open for all’. This text is based on the analysis of evaluation reports on the implementation of the monitoring indicators for the Operational Programme Human Capital and a subset of the data obtained from broader research on project management in the Polish public labour market organizations that I conducted from 2009 to 2011. The main aim of this paper is to draw attention to problems with current methods of setting and monitoring indicators for EU-funded projects and programs dedicated to labour market development. I argue that the current method of determining HCOP indicators causes public organizations to place all their attention and focus on achieving top-down imposed indicators, which are often artificial and incompatible with local realities,
rather than focusing on realizing value for stakeholders. This means that the success of the HCOP projects is defined mostly by meeting indicators, instead of bringing value to the society.

2. The Operational Programme Human Capital and Priority VI ‘The labour market open for all’ in Poland

After accession to the EU, public organisations in Poland began a large number of projects in a very short period of time. In the period 2004-2012, more than EUR 80 billion was allocated to Poland to be spent on projects. According to data provided by the Polish Ministry of Regional Development, a total of 153,557 projects were implemented in Poland with the financial support of the EU during 2004-2011 (Jałocha, 2012). Under the new Financial Perspective 2007-2013, Poland will become the largest beneficiary of funding among all EU member states, with EUR 67.3 billion (Gontarz, Gotfryd, & Szoszkiewicz, 2008).

The Operational Programme Human Capital (OPHC) is ‘a response to challenges posed by the Lisbon Strategy on member states’ (Ministry of Regional Development, 2007). Those challenges include: making Europe a more attractive place for investment and working, development of knowledge and innovations in support of development, and creation of a greater number of permanent work places. In the opinion of the authors the Programme, ‘through implementation of a general objective, and also of specific objectives defined within it, the Programme will contribute to bringing into life of provisions specified by the amended Lisbon Strategy on national level’ (Ministry of Regional Development, 2007). The main objectives of the OPHC include increasing the employment rate and enhancing social cohesion. The Programme comprises 10 Priorities, which are implemented in a parallel way at the central and regional levels. In the central component, the funds are allocated to ‘enhance the effectiveness of structures and institutional systems, while the funds within the regional component will be designated mainly for support of persons and social groups’ (Ministry of Regional Development, 2013). Management of the Programme is conducted in Poland on several levels and involve several organizations. They are called: Managing Authority, Intermediate Bodies and 2nd Level Intermediate Bodies. Managing Authority (MA) is responsible for proper management and implementation of the Operational Programme Human Capital. In Poland, a specific unit of the Ministry of Regional Development plays a role of Managing Authority (Ministry of Regional Development, 2013). Due to the scope of the Programme, management and supervision of implementation of individual priorities within the Programme have been entrusted to Intermediate Bodies (IB). In the central component, functions of Intermediate Bodies have been entrusted to competent ministers. In accordance with the decision for decentralization, support for individuals is provided primarily within the scope of the regional component; responsibilities of the Intermediate Bodies have therefore been transferred to voivodeship self-governments in each of Poland’s 16 regions (voivodeships).

Each Intermediate Body, may, upon agreement with the Managing Authority, delegate a part of the duties to 2nd Level Intermediate Bodies (IB2).

Priority VI ‘The labour market open for all’, which is analysed within this paper, is being implemented on the regional level by Intermediate and 2nd Level Intermediate Bodies and supervised by the Managing Authority.

Assistance within the Priority VI is focused on selected target groups, which experience the biggest difficulties related to entry and maintaining a position on the labour market.

These groups are comprised of (Ministry of Regional Development, 2007):

• young persons (younger than 25 years old) who lack professional experience or qualifications necessary to find employment;

• women (especially single mothers);

• older persons (older than 50 years old) who have difficulties adapting to the requirements of a modernising economy;

• persons with disabilities who are seeking employment on an open labour market
• persons with long-term unemployment, whose reintegration with the
labour market is as a rule more time consuming and requires the application of diverse activation instruments.

In addition, as it was mentioned in Programme objectives, within this Priority considerable emphasis is placed on improving the quality of services provided to the unemployed and persons who are professionally passive. This includes the early identification of clients of labour market institutions and the diagnosis of possibilities for their professional advancement. Emphasis is also given to improving the availability of job placement and vocational counselling services, which play a core role in the initial period of being unemployed (Ministry of Regional Development, 2007).

Altogether, projects implemented under Priority VI should achieve outcomes set for the Priority on the national level, which are (Ministry of Regional Development, 2009):

• Providing support to 45% of the registered unemployed and job seekers.

• Providing training implemented in the non-school system, which is significant from the point of view of the regional labour market, to 100% of the key employees of the Public Services of Employment.

• Providing assistance as part of Active Labour Market Policies to all young unemployed people (aged 15-24 years) for a period of 100 days from the day of registration to 2010.

• Covering 50% of unemployed women with labour market instruments and training service.

• Covering 50% of the long-term unemployed with labour market instruments and training service.

• Covering 35% of the unemployed disabled with labour market instruments and training service.

• Covering 50% of the unemployed living in rural areas with labour market instruments and training service.

• Covering 40% of older unemployed people (aged 50-64 years) with labour market instruments and training service.

These aforementioned expected results are then disaggregated between separate voivodeships. Each voivodeship must achieve part of the goal (indicator) and contribute to the achievement of the final outcome on the national level.

3. Indicators and their disaggregation

Along with the transfer of a wider range of responsibilities into the Member States’ hands, there can be observed the increased interest from European institutions on the measurable effects of the intervention and accountability. The result of this attention is enormous interest in the system of indicators meant to assist the EU apparatus in the evaluation of effects achieved by Member States (Wolińska, Rokicki, Zub, Niedoszewska, & Piekutowski, 2010). In the 2007-2013 programming period, the rise of the indicator approach – measurable objectives and an extensive system of product, result, and impact indicators – has become a key element related to the distribution of EU funds in Poland (Wolińska, Rokicki, Zub, Niedoszewska, & Piekutowski, 2010). This is due to the belief that the quality of public management can be greatly improved by defining measurable objectives and a precise description of the way the objectives are monitored.
Thus far, experiences coming from programs managed in a way that is strongly based on indicators indicate a lack of clear evidence that supports the positive results of this approach (Wolińska, Rokicki, Zub, Niedoszewska, & Piekutowski, 2010). At the same time, the negative consequences of the indicator approach can include: focus on success measurement instead of the actual measurement of the effects, focus on easily measurable goals, focus on activities that contribute to the achievement of the assumed values of the indicators, skipping broader qualitative aspects of tasks, killing innovation through a rigid system of indicators, and further defining the target values of indicators at artificially low levels, or setting them in such a way that their achievement is easier (Wolińska, Rokicki, Zub, Niedoszewska, & Piekutowski, 2010).

Within the framework of the Human Capital Operational Programme, we can distinguish the following types of indicators:

- **Impact indicators** – describe the impact of interventions that go beyond the direct and immediate effects on beneficiaries and are applicable in the medium term perspective (Olejniczak, 2008). They are monitored on the level of the strategic goals of the Programme. The Managing Authority (in cooperation with the institutions indicated in HCOP) is responsible for measuring the impact indicators (Wolińska, Rokicki, Zub, Niedoszewska, & Piekutowski, 2010).

- **Product indicators** – describe the product of activities of the persons and institutions carrying out projects (Olejniczak, 2008). They are measured at the project level, as part of the reporting of a beneficiary's application for payment. Their values are then aggregated to higher levels of implementation: Action, Priority, and Programme. Product indicators are key indicators to monitor the project and are determined in the project application (Wolińska, Rokicki, Zub, Niedoszewska, & Piekutowski, 2010).

- **Results indicators** – present information about the changes taking place with regard to the direct beneficiaries (in the short term) (Olejniczak, 2008). Entities responsible for measuring result indicators include Intermediate Bodies, 2nd level Intermediate Bodies, and beneficiaries (in some cases, it is mainly beneficiaries of the project competitions that may be responsible for measuring the result indicators).

On the basis of statistical data, disaggregation of indicators for each of the 16 regions in Poland is carried out at the central level. The target values set for each indicator are different for each voivodeship. It is these average values to which project implementers, as well as Intermediate Bodies and 2nd level Intermediate Bodies, must relate. Given the need to aggregate data at the national level, the Intermediate Bodies are required to provide background information (needed for the calculation of the general indicator) to the Managing Authority.

Disaggregation of product indicators include size of the population to which the support is aimed and assumptions about the need to achieve greater cohesion (Ministerstwo Rozwoju Regionalnego, 2007). Division of indicators shall be based on the size of the target population (for a particular indicator) and use of the coefficient of cohesion (calculated and approved on the central level).

According to these calculations, we can cite the example of the Małopolska Voivodeship. Based on this method of disaggregation, there should be total of 71,947 people in Małopolska who participated in projects implemented under the measure “Improvement of access to employment and support for professional activity in the region” including: 19,600 people aged 15-24 years; 2,880 people with disabilities; 10,669 people aged 50-64 years, etc. (Ministry of Regional Development, 2009, p. 251). These target values are not negotiable, and each voivodeship must meet them.

### 4. Method

The analysis conducted for the purpose of this paper is based on the reports on the implementation of the monitoring indicators for the Operational Programme Human Capital and a subset of the data obtained from broader research on project management in the Polish public labour market organizations that I conducted during the period 2009-2011.
The analysed reports were prepared by independent consulting organizations. Their aim was to assess the adequacy of the monitoring indicators introduced for Human Capital in the various voivodeships in Poland. For the purposes of this paper, I have analysed reports from two provinces and one nationwide report summarizing the overall situation in Poland. I have chosen reports from the same provinces in which I conducted qualitative research. That is why we can compare the opinions of independent consulting companies (based mostly on detailed, quantitative analysis of indicators) and the opinions of people who deal with challenges of OPHC implementation on a daily basis on the regional and local level (who I interviewed). This manner of data collection can help triangulate the data.

I collected qualitative data during in-depth interviews that I conducted personally at local and regional public labour market institutions. Interviews were conducted in 10 chosen organisations. The interviewees were asked questions according to a predefined, semi-structured protocol. The interviews lasted at least one hour, sometimes two to three hours. There were over 40 open-ended questions in the interview protocol. The questions, which were the same for local and regional labour market organisations, were divided into sections that covered many aspects of project work: identifying the criteria for project selection and execution as well as indicating how EU grant applications influence this process. Interviews were conducted with senior management – directors of researched offices, PMO managers, and in some cases, department managers responsible for projects. A total of 15 people were interviewed. To analyse the qualitative data, a template that included the main research categories and problems was used. Every interview was transcribed and all transcribed data from the interviews were read several times and the information was categorised and structured.

5. Reports on monitoring indicators of regional components of the Operational Programme Human Capital

Several independent evaluation studies were conducted that aimed to evaluate the performance of monitoring indicators concerning the regional components of the Operational Programme Human Capital in all regions of Poland (Wolińska, Rokicki, Zub, Niedoszewska, & Piekutowski, 2010). The evaluation studies analysed the methodology of indicator disaggregation at the level of the regional components of OPHC, as adopted by the Managing Authority of OPHC. In addition, the objective of some of the reports was to analyse the existing systems of regional component indicators for the voivodeships. A summary of the selected individual reports was provided in a nationwide report summarizing the overall situation in Poland.

In most of the reports, evaluators had serious doubts concerning the process of indicator disaggregation. The evaluators who assessed the situation in Małopolska Voivodeship arrived at the following conclusions (MasterConsulting, 2010):

- The process of indicator disaggregation did not fully take into account the specificity of the Małopolskie Voivodeship, nor in terms of the adopted disaggregation criteria;
- Cohesion factor applied, which was based only on GDP data, does not take into account the specificity of regions, and puts the lower-GDP regions (such as Małopolska) in a relatively inferior position;
- Absence of the “demand for a given type of support” element in the methodology adopted was identified;
- The existing algorithm for calculating target values of particular indicators was not correlated with the value of funds allocated for the Activity.

In relation to their conclusions, the authors of the report suggested that the process of indicator disaggregation should again be carefully analysed by decision makers, especially in terms of their cohesion with the specificity of the Małopolskie Voivodeship. They also drew the Managing Authority’s attention to the necessity of re-estimating the value of indicators at the national level, which would translate into target values on the regional level (MasterConsulting, 2010). They also found it very important to analyse the adopted method of indicator
disaggregation and its particularisation, such that it would take into account the “soft” aspects characterising a given region, and concerning the demand for a given type of support. The authors of the report (MasterConsulting, 2010) also conducted focus interviews with beneficiaries (organizations directly implementing projects), based on which some barriers that were related to the implementation of indicators were identified. One of the barriers mentioned by HCOP beneficiaries was that in the context of the target groups – people without experience, education, work habits, groups aged older that 45 years and aged younger than 25 years, and people from rural areas – specified target values are difficult or unrealistic to achieve.

Similar conclusions were reached by experts assessing the process of disaggregation of indicators for the province of Silesia Voivodeship. They found that:

- Applied cohesion factor, which is an important element of disaggregation, does not fully take into account the specificity of Silesia, due to historical GDP data and due to the lack of a sector breakdown of GDP;

- When calculating the value of disaggregation of indicators (i.e., people with disabilities, the number of secondary schools) the archival data from 2001 to 2002 were taken into account, although it is possible to obtain more current data;

- In part of the criteria of disaggregation, as they have been updated, significant changes in comparison with the statistical data included in the criteria occurred, in particular number of long-term unemployed, number of persons with disabilities aged 15 years and over, the number of registered unemployed persons

The above reports show that the beneficiaries of the Human Capital Operational Programme are sometimes forced to report the results of projects in comparison with the wrong indicator targets. This places into question the appropriateness of the whole process.

In the national report, as many as 65% of the respondents – a sample of 801 people representing beneficiaries, Intermediate Bodies, 2nd level Intermediate Bodies – agreed with the opinion that “during the implementation of HCOP, greater importance is attached to the attainment of indicators, rather than to achieve the objectives of the projects” (Wolińska, Rokicki, Zub, Niedoszewska, & Piekutowski, 2010). This shows that in the process of implementing projects financed by the EU under the HCOP in researched public organizations in Poland, stakeholders and their needs become less important than the convulsive attempts to achieve rigid sets of indicators.

6. Indicators seen through the eyes of public labour market organization managers

In interviews conducted with officials from the local labour market offices (beneficiaries of the HCOP), respondents repeatedly stressed that indicators set in HCOP, upon which the success of the projects are assessed, are often artificial and not tailored to given realities, though very important in terms of the project’s financial settlement. Indicators and their achievement become for them an end in themselves and are also a source of anxiety. Respondents were concerned about the consequences of their failure to achieve indicator targets (‘Indicators keep us awake at night’).

The interviewed managers talked about the problem of a lack of flexibility in deciding how to support unemployed people in their local environment. Clearly and rigorously set expectations concerning very precisely defined groups whom they should help do not allow them to reach out to those unemployed who not only need support, but really want it:

‘Indicators often build artificial barriers. Sometimes it would be better to activate a 49-year-old who wants to take part in the project and return to the labour market rather than the 50-year-old who is doing it under duress because the individual is waiting for retirement benefits.’
‘In the middle of the year we have virtually no governmental funds for our activities, so we do everything with the EU money. Unfortunately, indicators only allow us to help certain groups. This creates resentment of our clients who cannot benefit from the projects we conduct. For example, a single parent mother who is not below 24 years of age, is not over 50, and is not a long-term unemployed has no chance to get help in finding a job, even if she really needs it, because she does not fall into the criteria described by the EU indicators. Her situation is very difficult, but we cannot support her because we have projects in the first instance to be addressed to persons who comply with the indicators of the European Union.’

Several respondents emphasized that the way indicators are disaggregated does not always reflect the real situation in the district in which unemployed live in need of support:

‘Some indicators of the projects we implement are averaged for the whole region, and it is not always appropriate to the local situation in our county. We cannot, however, use our own indicators, those that are realistic for our situation.’

This means that there are situations where, for example, the local public office is required to train many more people than the severity of the problem in their area requires. It is not possible to allocate resources to other groups in need because there is a different parameter in the region, and the office must adapt to the average indicators. During the interviews, respondents at local and regional levels doubted the validity of such a unified system (compare: Jałocha, 2012).

The study also involved 2nd level Intermediate Bodies. They were tasked with the distribution of funds among the beneficiaries, including local employment offices, in such a way that the indicator targets at the level of the voivodeship would be accomplished. They are the "arm" of the Managing Authority; their aim is to control the achievement of indicators at the regional level. Among respondents from 2nd level Intermediate Bodies that were researched, there was also a clear understanding that methods for measuring the effectiveness of public projects and their selection have not always been correct:

‘We as an intermediary organization participate in the deterioration of project management, directing the attention to all those silly indicators that have been adopted and not the value that projects should bring to society.’

‘For example, we have to "make" a few more disabled people to meet the indicator targets, so we announce a contest for projects with strategic criteria for people with disabilities. This is a total lack of understanding of strategic management. This is a denial of the idea.’

It should be mentioned that all projects implemented in the researched offices on a national scale aim to achieve the objectives in terms of the development of the labour market in the European community. However, at the level of individual organisations, the projects are not always optimally adapted to the needs of the stakeholders.

7. Conclusions and further research

The biggest paradox of some projects that are conducted within the framework of HCOP in Poland is that although they are judged to be successful, they may in fact be failures. Not always meeting the ‘iron triangle’ and achieving indicator targets means fulfilling the expectations of stakeholders, which should be the overarching goal of public organization.

Managing a programme that is budgeted for only one country and that will only last for six years, yet is valued at nearly EUR 12 billion, is a real challenge. That is why bodies in charge of the programme’s management are constantly looking for solutions that will enable proper implementation of the programme and avoid the waste of public money and fraud. However, at the same time, public labour market organizations entangled in the race for
the indicators are sometimes losing the chance to stay as close as they can to the needs of their stakeholders. In the process of chasing exorbitant indicator targets, they cannot focus on listening to the needs of local communities.

One might then ask: What should be done to improve this situation? There is no one easy answer, especially because we are talking about a huge programme. There is, however, a definite need for the managing bodies of the Polish Human Capital Operational Programme and the European Union to assess their own methods of project assessment and to assess the manner in which indicators are set.

This paper does not answer the question of how to measure success and set target criteria of HCOP. In my opinion, however, it is important to note that it seems that indicators and their targets cannot be the only measures for determining the success of EU-financed projects, yet at the moment this is basically the only way that projects financed within HCOP are judged. Most likely, greater attention should be paid within HCOP, and particularly Priority VI “Labour market open for all”, to the individual needs of the unemployed in the regions and districts. Organisations at the regional level should receive more flexibly to set priorities for their local needs.

The issue presented within this paper definitely requires further research. This paper’s aim was to signal the identified problem and begin a discussion on the manner in which the success of EU-funded projects should be measured, as well as how targets should be set.

References

European Comission. (2006). Indicative guidelines on evaluation methods: evaluation during the programming period. Working document no 5.
Graeme, T. & Fernandez, W. (2008). Success in IT projects: A matter of definition? International Journal of Project Management, 26, 733-742.
Hodgson, D. & Cicmil, S. (2006). Are projects real? The PMBOK and the legitimation of project management knowledge. In: D. Hodgson & S. Cicmil (Eds.), Making projects critical, p.29-50. Palgrave Macmillan.
Jałocha, B. (2012). Projectification of the European Union and its implications for public labour market organisations in Poland. Journal of Project, Program & Portfolio Management, 3(2), 1-16.
MasterConsulting. (2010). Badanie ewaluacyjne. Ocena realizacji wskaźników monitorowania dla komponentu regionalnego w ramach Programu Operacyjnego Kapitał Ludzki w województwie małopolskim. Warszawa.
Ministerstwo Rozwoju Regionalnego. (2007). Zasady systemu sprawozdawczości Programu Operacyjnego Kapitał Ludzki 2007 – 2013. Warszawa.
Ministry of Regional Development. (2007). Human Capital Operational Programme. National Strategic Reference Framework 2007-2013. Warsaw.
Ministry of Regional Development. (2009). Detailed description of the priorities of Human Capital Operational Programme 2007-2013. Warsaw.
Ministry of Regional Development. (2013). Human Capital Programme. Institutions Implementing Programme. Available at: http://www.efs.gov.pl/English/Strony/Institutions.aspx (Accessed 12 May 2013)
Ministry of Regional Development. (2013). Human Capital Programme. Introduction to Programme. Available at: http://www.efs.gov.pl/english/Strony/Introduction.aspx. (Accessed 18 May 2013)
Müller, R. & Turner, R. (2007). The Influence of Project Managers on Project Success Criteria and Project Success by Type of Project. European Management Journal, 25(4), 298-309.
Olejniczak, K. (2008). Mechanizmy wykorzystania ewaluacji. Studium ewaluacji średniookresowych INTERREG III. Warszawa. Scholar.
Saairen, T. (1996). An expanded instrument for evaluating information systems success. Information Management, 103-188.
Wolińska, I., Rokicki, B., Zub, M., Niedoszewska, A. & Piektowski, J. (2010). Raport końcowy. Ocena systemu monitorowania i wartości wskaźników PO KL 2007-2013. Warszawa: PSDB grupa WYG.
Zwikael, O. & Smyrk, J. (2011). Investment in failure: the paradox and a proposed project success framework. EURAM. Project Organizing General Track.