FACTORS INFLUENCING DECISIONS ABOUT CROWDSOURCING IN THE PUBLIC SECTOR: A LITERATURE REVIEW

Regina Lenart-Gansiniec

1Institute of Public Affairs, Jagiellonian University, Łojasiewicza 4, 30-348 Kraków, Poland

Abstract


The subject of the article is identification of the factors that influence making decisions about implementing crowdsourcing by public organisations in their activity, in particular municipal offices in Poland. These factors have been selected based on a literature review. A review of one of the initiatives realised by a municipal Office in Poland allows for formulating a conclusion that factors connected with the type of task and management may impact decisions on implementing crowdsourcing.

Keywords: crowdsourcing, crowdsourcing decision, factors, literature review

INTRODUCTION

Crowdsourcing is a relatively new notion, nonetheless raising more and more interest with researchers. In short, it means selection of functions which until present have been performed by employees and transferring them, in the form of an open on-line call, to an undefined virtual community. In economic practice it has become a megatrend, which drives innovations, collaboration in the field of scientific research, business, or society. It is reached by more and more organisations, for instance considering its potential business value (Rouse 2010; Whitla 2009). The first paper dedicated to crowdsourcing appeared relatively recently, in 2006 thanks to J. Howe's article entitled: “The Rise of Crowdsourcing”. Although crowdsourcing is more and more the subject of scientific research, one may note in the literature many ambiguities, which result from proliferation of various research approaches and perspectives. Therefore, this may lead to many misunderstandings (Hopkins, 2011). This especially concerns the key aspects and factors, which have an impact on making decisions about crowdsourcing by organisations, particularly the public ones.

The aim of this article is identification of the factors that influence making decisions about implementing crowdsourcing by public organisations in their activity, in particular municipal offices in Poland. The article is of a theoretical and review nature. Searching for the answer to this question, a literature review was conducted and an analysis of crowdsourcing initiatives used by self-government units in Poland was made. In Poland there are only four municipal offices that implement crowdsourcing in their activity. The article presents the initiative entitled “Otwarta Warszawa” (“Open Warsaw”). The justification behind its choice is the number of the submitted ideas, registered users, and their activeness: 16,600 registered users, 1,147 ideas handed over by the crowd, 24 ideas were implemented (see more: Lenart-Gansiniec, 2016). The article is composed of three parts. The first part concerns the essence and notion of crowdsourcing and its importance to organisations. The areas of applying crowdsourcing in public organisations using the example of Poland with a division to crowdsourcing typology were presented in the second part. The last, third part of the article was devoted to identifying factors which decide about making a decision about initiating crowdsourcing in a public organisation. A literature analysis was used here. The necessity for identifying these factors is justified by the fact that an organisation which intends to use crowdsourcing should be aware of the reasons for reaching for it. It will contribute to
increasing the level of crowdsourcing, its potential and maximising the benefits coming from it for all users.

**Literature review**

**The essence and notion of crowdsourcing**

Crowdsourcing is a relatively new notion (Howe, 2006), however year after year it has been gaining on popularity in sciences on management taking into account its potential (Afuah, Tucci, 2012; Gassenheimer, Siguaw, Hunter, 2013).

For the first time the notion of crowdsourcing appeared in the subject literature in 2006 owing to J. Howe. Crowdsourcing was defined as “the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call. This can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by sole individuals” (Howe, 2006). The basic building block is thus the wisdom of the crowd (Surowiecki, 2004). It is assumed that a group may achieve and generate more benefits than any expert (Jeppesen, Lakhani, 2010; Leimeister, 2012). The Internet and open collaboration with the crowd gains importance here (Prpić, Shukla, Kietzmann, McCarthy, 2015).

**The importance of crowdsourcing in public organisations**

The existing scientific output indicates that crowdsourcing is of big importance to organisations, which make use of such initiatives. In the economic practice crowdsourcing has become a megatrend which more and more organisations, including the public ones, reach for. It is considered in the literature as a rising phenomenon based on Web 2.0 and it is pointed out that the source of its popularity is the possibilities and benefits coming from its use:

- it enables access to the resources of people’s knowledge located outside the organisation, e.g. access to talents, external knowledge (Burger-Helmchen, Penin, 2010), valuable information (Greengard, 2011), resources (Brabham et al., 2009; Chen, 2016), skills and experience (Oliveira, Ramos, Santos, 2010), mobilisation (Zhao, Zhu, 2012), competences (Chanal, Caron-Fasan, 2008),
- it facilitates acquiring new ideas, contents, and data as well as the ways of solving problems at a lower cost and in a shorter time, e.g. creating new products and open innovations (Whitla, 2009),
- obtaining material benefits, e.g. building competitive advantage, (Leimeister, Zogaj, 2013), improving business processes (Burger-Helmchen, Penin, 2010; Brabham, 2008; Roy, Balamurugan, Gujar, 2013), and optimising the costs of the organisation’s activity or business models (Garrigos-Simon et al., 2014).

Talking about the benefits of crowdsourcing, mentioning a better adaptation of the organisation’s offer to the consumer’s needs and consequently increasing productivity, sales, and the level of the achieved income and the competitiveness and innovativeness of the organisation as well as creating a positive image of the organisation as a modern entity, which is open to the voices of its clients, cannot be omitted. By the same token it may be ascertained that crowdsourcing is a specific kind of participational on-line activity, participation (Lönn, Uppström, 2013), in which the organisation invites the crowd to collaborate. In particular the last

<table>
<thead>
<tr>
<th>Date</th>
<th>Author/authors</th>
<th>Crowdsourcing importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Brabham</td>
<td>enables solving problems</td>
</tr>
<tr>
<td>2008</td>
<td>Bernoff, Li</td>
<td>improves anticipating different events</td>
</tr>
<tr>
<td>2009</td>
<td>Huberman et al.</td>
<td>enables making use of the virtual community’s potential to create new products, services, and contents</td>
</tr>
<tr>
<td>2010</td>
<td>Almeida et al.</td>
<td>becomes a discussion space for the citizens</td>
</tr>
<tr>
<td>2013</td>
<td>Brabham</td>
<td>enables sending ideas for improvement</td>
</tr>
<tr>
<td>2010</td>
<td>Unterberg</td>
<td>enables reporting problems</td>
</tr>
<tr>
<td>2013</td>
<td>Brabham</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>Lipton</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>Kiva</td>
<td>enables obtaining funding to realise a given endeavour</td>
</tr>
<tr>
<td>2013</td>
<td>Agrawal, Catalini, Goldfarb</td>
<td></td>
</tr>
</tbody>
</table>

I: Importance of crowdsourcing – public organisation context

Source: own elaboration.
Aspects is important from the public organisation's point of view. It is because crowdsourcing increases the throughput of citizens' participation in public life, their involvement and a feeling of being able to make changes in one's nearest environment (Seltzer, Mahmoudi, 2012). The significance of crowdsourcing in the context of public organisations is presented in Tab. I.

Apart from the benefits resulting from the scale and diversity of knowledge to which public organisations have access, crowdsourcing enables realising the open government postulate. In addition, by the possibility of co-participating and co-deciding, the society's involvement increases and by the same token its acceptance for public organisations' actions grows. Crowdsourcing may also be a tool for managing crisis situations since it enables anticipating potential hazards and reporting the arising problems. Moreover, it facilitates the citizens' stimulation to activity in public life by providing improvements. It is also worth mentioning the possibilities of obtaining additional funding for public investments. 

Crowdsourcing in public organisations

Since 2008 a tendency has been observed for public organisations to include crowdsourcing in their activity, particularly to generate new ideas or develop innovative solutions to problems and enable citizens to participate in the actions of the government. This has also initiated a growing interest of researchers in the problematic aspects of crowdsourcing in public organisations. Nevertheless, there have not yet been any attempts to comprehensively look at the problem of crowdsourcing in public organisations (Brabham, 2015). The Google Scholar data indicate 57,600 theoretical and empirical articles devoted to crowdsourcing in public organisations. Most of these publications cover the area of psychology and information science. In rare papers related to economic sciences it is indicated that crowdsourcing may be useful in urban planning (Brabham, 2009), collecting (Crampton, 2009; Goodchild, 2009), or data sharing (Hudson-Smith et al., 2009). At the same time it is emphasised that crowdsourcing in public organisations is the current direction of research since crowdsourcing is viewed as a combination of collaboration, aggregation, collective work, consensus, and creativity.

In the literature, various typologies are indicated, nonetheless most often two are indicated, those by J. Howe and D. C. Brabham. J. Howe distinguishes four types of crowdsourcing: (1) collective intelligence, wisdom of the crowd, (2) crowdcreation, (3) crowdvoting, and (4) crowdfunding. Whereas, D. C. Brabham considers the following as variants of crowdsourcing: knowledge discovery and management, broadcast search, peer-vetted creative production, and distributed human-intelligence tasking). Only a few authors additionally point to crowdfunding (Corney et al., 2009). Selected crowdsourcing initiatives of public organisations in the typology were presented below D. C. Brabham's division was chosen taking into account its multidimensionality. A review of crowdsourcing initiatives was performed taking into account the division into crowdsourcing types (Table 2). It has been complemented by crowdfunding.

A specific forerunner of making use of crowdsourcing in public organisations was the United States President Barack Obama. The 21st of January 2009 may be considered the symbolic moment of initiating a public discussion on open government when President Barack Obama, who had just begun his presidency, signed the Memorandum on Transparency and Open Government. It is because the US President obligated the American government agencies to introduce the rule of transparency and ensuring the citizens' participation in the decision-making process. One of the variants of crowdsourcing implemented by the US government is broadcast search. It focuses on searching for ideas, solution ways, and answers to ideas submitted by organisations. Usually, these are special applications, which enable public organisations collecting ideas which solve difficult

II. Selected examples of crowdsourcing initiatives realised by public organisations

<table>
<thead>
<tr>
<th>Type</th>
<th>Potential usage</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadcast search</td>
<td>Identifying new solutions to problems, e.g. improvement of clerks' work</td>
<td>White House SAVE Award, NASA, InnoCentrive</td>
</tr>
<tr>
<td>Peer-vetted creative production</td>
<td>Obtaining ready designs of logotypes, names, plans for developing of urban space, strategies</td>
<td>Open Data, Dear Mr. President, Challenge.gov, Change by Us, Amsterdam Opent, Medellin, Otwarta Warszawa, Dobre Pomiary, Next Stop Design</td>
</tr>
<tr>
<td>Knowledge discovery and management</td>
<td>Reporting occurring threats and problems</td>
<td>We the People, FixMyStreet, SeeClickFix, NaprawmyTo.pl, San Jose Mobile City Hall, Did You Feel It?, Ushahidi, Kidenga, POPOVOX</td>
</tr>
<tr>
<td>Distributed human intelligence tasking</td>
<td>Processing, analysing a big quantity of data, arranging information, and creating registers</td>
<td>Amazon Mechanical Turk</td>
</tr>
<tr>
<td>Crowdfunding</td>
<td>Financing construction designs, social infrastructure facilities</td>
<td>Citizinvestor, Neighborly, Spacehive</td>
</tr>
</tbody>
</table>

Source: own elaboration.
problems. Government agencies can ask citizens for practical ideas to solve specific problems. Broadcast search works in part because by casting a wide net online, an organisation can reach those on the margins of a problem domain, who may have unique heuristics, tool kits, or perspectives that could aid in solving a given problem. One of the examples is the White House's SAVE Award (https://obamawhitehouse.archives.gov), initiated in 2009 by President Obama. The goal of the SAVE Award is to produce ideas that will yield savings while also improving the way that the government operates.

Peer-vetted creative production focuses on generating new ideas, testing, and creating new products or services of an image, social, and political nature. In the Challenge.gov (https://challenge.gov) project more than 80 government agencies could place and direct to the crowd their requests to indicate innovative solutions to problems as well as improving ideas, products, or processes in public organisations. The winning ideas were awarded and implemented. Since the moment of launching the portal, over 640 problems have been handed over to the crowd for solving, 220 million dollars have been spent on awards, 250 thousand users have participated, and over 4.5 million people have visited the website.

Knowledge discovery and management consists in entrusting with the users searching for and storing information. Citizens may report various types of information, from clogged storm drains, through traffic lights' breakdowns, to potholes or graffiti. FixMy Street (https://fixmystreet.com) is a crowdsourcing platform founded in Great Britain. Since its beginning in 2007, it has registered over 900 thousand problems. It is the first service of this type which originator was a non-governmental agency My Society. In 2015 the service received the Smart City Award Digital Technology.

Distributed human intelligence tasking focuses on making use of the community to process, collect, or analyse a large volume of data with which computer systems could have a problem. For example Amazon Mechanical Turk (https: mturk.com) is a marketplace for work that requires human intelligence. The Mechanical Turk service gives businesses access to a diverse, on-demand, scalable workforce and gives workers a selection of thousands of tasks to complete whenever it is convenient. Amazon Mechanical Turk is based on the idea that there are still many things that human beings can do much more effectively than computers, such as identifying objects in a photo or video, performing data de-duplication, transcribing audio recordings, or researching data details. Traditionally, tasks like this have been accomplished by hiring a large temporary workforce (which is time consuming, expensive, and difficult to scale) or have gone undone.

Crowdfunding is mainly acquiring money from the virtual community by the organisation in order to realise a given venture. In Kansas City a service called Neighborly (https://neighborly.com) has been launched. The community may participate in financing construction designs, road repairs, or other investments. It only takes purchasing municipal bonds. Another platform, Citizinvestor focuses on raising money for public projects and social infrastructure. It enables the citizens to finance public organisation projects. Currently, as for 26th August 2017, there are four crowdsourcing platforms operating in Poland that were initiated by public organisations, i.e. Lubelskie Dobre Pomysły, Krosno Dobre Pomysły, Rzeszów Dobre Pomysły, and Otwarta Warszawa. They are used as a place for submitting ideas. Through the service, members of the virtual community may submit ideas, which are later on analysed by a jury composed of a team of experts and city representatives (and thus, broadcast search). The ideas are evaluated from the point of view of their consistence with the regulations, appropriateness for the question asked, creativity and ingenuity, potential of change that it brings to the city, number of obtained votes in favour from other users, the idea's advantage over other proposals. Further on, the best ideas are implemented. Considering the greatest popularity and the participants' engagement focus has been made on the Otwarta Warszawa platform in the further part of the article.

Factors impacting decisions about crowdsourcing

A theoretical framework

According to Rouse (2010) the knowledge of factors, which influence the decision about crowdsourcing in the organisation is important in so far as the lack of knowledge about it may contribute to the organisation's losing valuable resources. Many researchers of crowdsourcing initiatives attempted to select a group of factors, which determine the decision on making use of crowdsourcing (Table 3). Such grouping may contribute to minimising the potential threats resulting from the limitations brought about by entrusting tasks for realisation with an unknown, virtual group of recipients. The factors presented above were matched with four groups in order to indicate as precise as possible the dilemmas and true motives of the actions taken, and so these are the following: tasks, people, management, and the surroundings.

A task or more appropriately its type was assigned to the first category. The importance of the task is considered as the decisive factor for making a decision about crowdsourcing (Ranade, Varshney, 2012). What is important – not all types of crowdsourcing initiatives may be used for realising each task directed to the virtual community (Burger-Helmchen, Pénin, 2010). The reason for this state of affairs is the fact that the members of the virtual community are anonymous – the issues
Factors Influencing Decisions about Crowdsourcing in the Public Sector: A Literature Review

of the crowd’s involvement, confidential data protection, intellectual property, or privacy and data security appear here (Muntés-Mulero, 2013). It is suggested in the literature that in order to increase intellectual security, larger tasks may be divided into smaller ones (Feller, 2012). The most frequent tasks directed to the crowd are the following: micro-tasks, macro-tasks, and creative tasks. Micro-tasks are tasks, which do not require collaboration of many persons, time involvement, or the necessity for financial remuneration for the virtual community. What is important is the crowd’s involvement. They may include for example indicating facilities on a map or translating short texts and notifying about a certain problem. This type of tasks may be applied in “knowledge discovery”. Macro-tasks are tasks, which require involving a larger number of persons who collaborate with each other and further bigger amount of time, knowledge, and skills. They may concern searching for ideas, means of solving, or answers to problems reported by the organisation. It is about such crowdsourcing initiatives as “broadcast search”. Creative tasks are connected with making use of creativity, innovativeness of the virtual community’s members. They concern improving the offer or way of functioning of the organisation – and therefore the crowdsourcing initiative – “peer-vetted creative production”. In Poland public organisations direct tasks of various nature to the crowd. The biggest interest is raised by encouraging the crowd to generate new ideas, test products, services, and solve various problems. However, it is difficult to ascertain that it is a type of task, which constitutes a significant factor that influences crowdsourcing decisions. Research in this scope has not been conducted so far.

The next factor is the people. The organisation may take crowdsourcing actions in case when it does not possess a sufficient number of employees for executing a given task (Malone, Laubacher, Dellarocas, 2010). In particular, when this task requires great resources, skills, or competences. An example is the actions of the “peer-vetted creative production” type. Then what is required is the knowledge, creativity, or innovativeness for generating new ideas or solutions. The probability of adopting and accepting new solutions is also increased then.

Management constitutes an important factor which determines making a decision about crowdsourcing. In particular this concerns costs, coordination, and risk. The will to save money or lack of funds for realising an action may constitute the premise for making a decision about crowdsourcing (Zhao, Zhu, 2012). Next, coordination of actions or the mechanisms of coordination in the organisation are of key importance to crowdsourcing. Their lack may mean resource leakage. Therefore, the organisation should possess workflow management (Potter, McClure, Sellers, 2010), members management (Dow et al., 2011), and agreement management (Psaier et al., 2011). Moreover, what is important is the ability or the developed mechanisms of controlling and motivating the virtual community. Otherwise, there is a risk of receiving useless ideas by the organisation (Zhao, Zhu, 2012). It is particularly required in the case of “distributed human intelligence tasking” since the crowd’s knowledge is used here

| III: Factors impacting making of a decision on applying crowdsourcing |
|----------------------|-----------------|----------------|
| Level of analysis    | Date            | Author/authors |
| Task                 |                 |                |
| 2010                 | Malone, Laubacher, Dellarocas | Type of task |
| 2012                 | Ranade, Varshney |                |
| 2012                 | Heimerl et al.  |                |
| 2012                 | Afuah, Tucci    |                |
| 2010                 | Burger-Helmchen, Pénin. | Interactions with the online community |
| 2013                 | Muntés-Mulero et al. | Openness |
| 2012                 | Feller et al.   | Confidential information |
| People               | 2010            | Malone, Laubacher, Dellarocas | Number of employees |
| 2010                 | Sharma          | Resources      |
| Management           | 2011            | Rouse          | Cost-saving |
| 2012                 | Zhao, Zhu       | Van Pelt, Sorokin |
| 2011                 | Rouse           |                |
| 2009                 | Whitla          |                |
| Surroundings         | 2012            | Zhao, Zhu      | Platform accessibility |
| 2012                 | Van Pelt, Sorokin |

Source: own elaboration.
to execute specific, often complicated tasks or analyse large quantity of data. More and more often one points out that public organisations should increase their efficiency, effectiveness of public tasks, or the rationality of spending public funds (Frączkiewicz-Wronka, 2013). By the same token, it seems that these premises may decide about making a decision about crowdsourcing – nonetheless, there is a lack of research in this scope.

The last group of factors is connected with the surroundings, especially possessing a specific crowdsourcing platform. The multitude of existing crowdsourcing platforms may cause that the decision on their choice should be dictated by the goals which a crowdsourcer wishes to achieve. What is more, the possessed platform determines the choice of a strategy of conduct and selecting a suitable type of virtual community. And so, the functionality, possibility of collecting a number of offers, a communication module, or aggregating data gain on decisive significance. The platforms that operate in Poland are oriented at collecting ideas from the crowd.

**Factors impacting decisions about crowdsourcing – Otwarta Warszawa platform case**

Otwarta Warszawa was the first crowdsourcing platform implemented in Poland (https://otwartawarszawa.pl). The originator of this endeavour was the Municipal Office of the Capital City of Warsaw. The whole project lasted from June 2014 to July 2015. In this period the citizens of Warsaw had submitted 1,147 ideas via the platform of which 50 were implemented by the Office. The platform functioned on the basis of submitting ideas by Internet users, which were next analysed by a jury composed of a team of experts and city representatives. These ideas were evaluated in regard to their consistency with the rules, adequateness to the question asked, creativity, and originality, the number of received upvotes from other users, and the idea's advantage over other proposals. The awarded ideas were handed over to receive an opinion of the Vice-Mayor of the Capital City of Warsaw. The best of them were implemented. In addition, the authors of the selected ideas were awarded. The main award amounted to 500 zlotys. 50 ideas were selected for implementation, among others: (1) hammocks and outdoor libraries on the banks of the Vistula River; (2) learning sign language at schools; (3) Warszawa as the protagonist of a game (creation of the Warsaw Churches games within the Carcassonne game, Warsaw game board for the Scotland Yard game, a board with Warsaw railway routes for Rosyjskie Koleje and Ticket to Ride); (4) improvement of tramway traffic lights (a tram which approaches a crossroads receives a green light automatically); (5) improvement of downtown road safety (widening the pavements, bicycle paths); (6) potable water intakes in parks; (7) summer theatre scenes on the banks of the Vistula; (8) benches in parks protecting from the rain and sun. Another idea which is being realised is installing additional equipment in the outdoor gyms.

The above-mentioned examples of the platforms may be classified in broadcast search. During the identification of the factors that impact decisions about crowdsourcing, an analysis of the project's website and press news was carried out. According to the information mentioned on the project's website its main goal was to "define the city's identity", which was defined as "a set of features which positively distinguish the brand, which make up its ideal image, the most beneficial from the point of view of the brand's owners or managers. In other words, brand identity reflects the desired way of viewing (perceiving) the city's brand by its most important consumers" (https://otwartawarszawa.pl). Therefore, Otwarta Warszawa project mainly focused on generating new ideas, but also on defining the city's identity "not as a logo or motto, but the actual state" (https://otwartawarszawa.pl).

In addition, Michał Olszewski, the Vice-Mayor of the Capital City of Warsaw stated that it is difficult to envisage a metropolis which ignores the voice of its citizens and does not include them in the process of shaping the surrounding space. It is obviously the citizens – by their natural knowledge of the city – who intuitively feel which solutions will be most beneficial for a given place. Owing to the Otwarta Warszawa platform the citizens have become a force, which creates real changes in the city's space, entertainment, and culture" (https://otwieramymiasto.pl).

Having regard to the factors impacting decisions on crowdsourcing identified based on a literature review, an attempt has been made to indicate the ones that are important from the perspective of the Otwarta Warszawa crowdsourcing initiative. Above all the platform under discussion may be classified as broadcast search. As it has already been pointed out, the type of task may be of importance in this aspect. Broadcast search is useful in solving micro-tasks, which do not require strict collaboration of many people, greater involvement of an individual, her or his invested time, and offering high financial gratification for the winners. The basis here is constituted by motivation and willingness to change. It appears from the research conducted by the author, related to the motivation of the online communities of crowdsourcing platforms initiated by public organisations, that the main motivator is willingness to change and participate in shaping of the local community. Therefore, it seems that the type of task may be of importance in making decisions about crowdsourcing. For example, to solve complicated and complex problems – competition is a better form. Further on, the importance of the human factor is pointed out in the literature. It is difficult to state that an inadequate number of employees may constitute a decisive factor on making a decision about crowdsourcing. In Poland one rather talks...
CONCLUSION

In light of the obtained analysis of the Otwarta Warszawa crowdsourcing platform, initiated by the Municipal Office of the Capital City of Warsaw, it may be ascertained that the type of task and management play the key role in making a decision about crowdsourcing. The initiators of the platform under discussion made use of it to obtain solutions to simple micro-tasks and to create an image of the city as one that is open to the voices of its citizens. Skilful management of crowdsourcing is the resultant of many factors, which should be taken into consideration by organisations, which intend to implement it. The decision on taking up crowdsourcing initiatives should be the subject of the organisation's decision. Therefore, crowdsourcing should be a conscious and planned action. Then the risk of resource drainage or leakage of confidential data from the organisation appears. The identification of the factors which have an impact on making a decision about crowdsourcing still belongs to relatively new areas. There is still no answer to numerous questions, in particular whether a distinction between the factors taking into account the type of organisation (e.g. commercial or public) should be made. An attempt to find the answer to this question will contribute to neutralising the negative consequences of crowdsourcing. Particularly in the context of public organisations in Poland – it seems that the factors, identified based on the literature, do not correspond with the specificity of these organisations. Thus, it is important to conduct further and very detailed research in this scope.

Acknowledgements

This project was financed from the funds provided by the National Science Centre, Poland awarded on the basis of decision number DEC-2016/21/D/HS4/01791.

REFERENCES


RANADE, G. and VARSHNEY, L. R. 2012. To Crowdsourcer or not to Crowdsourcer? In: Workshops at the Twenty-Sixth AAAI Conference on Artificial Intelligence. AAAI.


Contact information
Regina Lenart-Gansiniec: regina.lenart-gansiniec@uj.edu.pl