
Polish Companies Using Crowdsourcing: The Potential of Society's Intellectual Capital to Create Added Value Compared to Other Countries

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Abstract:

Purpose: This study explores the use of crowdsourcing in Polish small and medium-sized enterprises (SMEs), highlighting both its potential and challenges. Crowdsourcing, as a tool for leveraging the intellectual capital of society, offers new opportunities for innovation and business development. However, Polish enterprises are still in the early stages of adopting this approach.

Design/Methodology/Approach: Through a mixed-method research design, combining qualitative expert interviews and quantitative survey data from 600 Polish SMEs, the study examines the factors influencing crowdsourcing adoption, areas of its application, and its impact on business operations.

Findings: The findings indicate that Polish SMEs primarily use crowdsourcing in the service and technology sectors, where barriers to entry are lower. Key challenges include a lack of trust in crowdsourcing solutions, concerns about intellectual property protection, and difficulties in integrating crowdsourced contributions into internal business processes.

Practical Implications: Despite these barriers, the study confirms that crowdsourcing can enhance innovation and competitive advantage if supported by appropriate organizational culture and awareness-building efforts.

Originality/Value: The research contributes to the growing literature on crowdsourcing by providing insights into its implementation in an emerging market and offering recommendations for fostering its development in Poland.

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1. Introduction

The ability of companies to create innovations is one of the most important factors in achieving success in the market. Creating and maintaining a competitive advantage in the market forces economic reorganization and the search for newer solutions to create the expected added value. A new trend in the approach to creating innovation and added value is crowdsourcing, which - to put it very simply - involves using the intellectual capital of society to solve organizational problems (Guo, 2023).

Recent studies have highlighted the significant impact of crowdsourcing on fostering innovation within organizations (Hupe *et al.*, 2022). Nowadays, innovations and added value are created by building interactive relationships in real time between market participants using modern information and communication systems (Lin and Ding 2023), which ultimately creates an opportunity to produce new products that will meet the needs and expectations of recipients (Simaei, Hirschheim and Schneider, 2023), contributing to increasing the company's competitiveness (Jiang, Zhang and Wu, 2023). Integrating digital platforms has enhanced collaborative efforts, leading to more effective crowdsourcing outcomes (Riedl *et al.*, 2024).

The phenomenon of crowdsourcing has recently been gaining popularity in scientific literature, but this area still has great research potential. There are already many examples of the use of crowdsourcing in business practice. However, so far there have been no studies on the use of crowdsourcing by Polish enterprises, which makes our observations important for understanding the phenomenon.

The article aims to characterize Polish enterprises in the SME sector that use crowdsourcing in their activities. The issues of the completed research project concerned the characteristics of crowdsourcing practices in Polish enterprises,

including determining the factors influencing the involvement of the so-called crowd in some business processes, areas, and forms of using crowdsourcing, as well as assessing its impact on innovation and benefits and costs for enterprises. However, this text focused solely on comparing crowdsourcing companies with entities that do not undertake such activities.

In the article, we present the most important findings so far about the experiences of Polish enterprises with crowdsourcing, the methodological assumptions of our research, their results regarding the findings of other researchers as well as conclusions and recommendations for practice and further scientific exploration.

2. Literature Review

Globalization and deregulation have led to a significant tightening of free competition and oblige companies to explore new forms of economic reality (Fettke, 2007), including the disappearance of barriers between the company and the market (Picot and Reichwald, 1994) and the development of networked, cooperative, and virtual economies. Recent studies have highlighted the role of globalization in reshaping economic structures, leading to increased interconnectivity and the emergence of new business models (Luo *et al.*, 2021).

Increasingly, there is collaboration between companies and suppliers in production networks, which can be located regionally, but also in international expansion (Frohlich and Westbrook, 2001; Mildemberger, 2001) to actively engage external partners to achieve strategic competitive advantage (Huston and Sakkab, 2006).

Integrating digital platforms has enhanced collaborative efforts, leading to more effective crowdsourcing outcomes (Riedl *et al.*, 2024). In particular, the development of information and communication tools via the Internet makes it possible to participate and collaborate in various types of tasks aimed at creating so-called content and even added value, which is the starting point for the phenomenon of crowdsourcing. A comprehensive literature review has identified various applications of crowdsourcing, highlighting its potential to leverage collective intelligence for organizational benefit (Estellés-Arolas and González-Ladrón-de-Guevara, 2012).

Crowdsourcing has been evolving and changing its face since the beginning of its scientific gaze (Martin and Lessmann 2008; Gassmann 2010; Dawson and Bynghall, 2011). In the simplest terms, crowdsourcing should be understood as the phenomenon of involvement of the crowd, i.e., some collective or community (mainly amateurs, hobbyists, part-timers) who provide voluntarily, in their free time, certain services (creation, collection, and processing of information or solving problems) to some organization (company, institution) (Estellés-Arolas and González-Ladrón-de-Guevara, 2012).

Involvement of the crowd can be both innovative (value creation in the innovation process), such as solving certain problems or participating in research and development projects, for example, generating, evaluating, and implementing ideas, and operational (value creation in the production process), such as translating texts, searching for certain information, categorizing photos, or creating slogans for marketing campaigns (Nasution *et al.*, 2024).

Crowdsourced services are most often provided free of charge or for some small amount through the Internet, which is a working tool for transferring all procedures forming the basis of all communication between stakeholders, most often between a company and a private person or group of people (Zhao *et al.*, 2022). Companies all over the world use crowdsourcing to obtain knowledge, comments, suggestions, community opinions, or finances, which allows faster development of products or services and increases their value for customers (Cricelli *et al.*, 2022).

The idea of crowdsourcing thus boils down to using the knowledge and/or work of many external partners (customers, users, suppliers, etc.) in the process of adding value. The cost of implementing crowdsourcing projects is much lower than paying traditional employees (Law and Ahn, 2017).

The experience of using the crowdsourcing phenomenon by Polish companies seems to have been poorly explored so far by researchers (Niedzielski, *et. al.*, 2023; Gemra, 2019; Mazurek-Łopacińska and Sobocińska 2016), who focus more on theoretical considerations (Kozioł-Nadolna 2023; Kozłowska-Makós and Gomulski, 2023; Leoński, 2022; Smołucha, 2020; Krok, 2019; Caputa and Paździor, 2018; Lenart-Gansiniec 2017b; Kinal, 2017; Kowalska, 2016; Sanak-Kosmowska, 2016; Spoz, 2016; Henhappel and Niedzielski, 2015; Mazurek, 2015; Dziuba, 2012) and methodological considerations (Lenart-Gansiniec, 2017a).

In previous studies on Polish companies using crowdsourcing, it is difficult to find their broader characteristics. Most often, the analyses omit a more detailed description of the studied sample, including an indication of the characteristics differentiating the use of this type of solution by enterprises (Mazurek-Łopacińska and Sobocińska, 2016), using, among other things, case studies (Gemra, 2019). The researchers' description of the crowdsourcing phenomenon using case studies is justified precisely because only a small number of Polish companies have had any experience in this area.

3. Research Methodology

The subject of the study concerned the characteristics of the practices of crowdsourcing in Polish enterprises. Its scope includes determining the factors influencing the involvement of the so-called crowd in some business processes, areas, and forms of application of crowdsourcing, as well as assessing its impact on innovation and benefits and costs for enterprises. In addition, the study also included

understanding the level of use of crowdsourcing platforms. As a result, it allowed for assessing the current condition of Polish enterprises concerning the use of crowdsourcing mechanisms.

To obtain objective results and high-quality data, a research strategy was chosen, characterized by a multidimensional approach, i.e. the use of various techniques and methods (Denzin, 1970), combining them into one coherent research process. This comprehensive research method, known as mixed methods research, integrates both qualitative and quantitative approaches to enhance the scope and rigor of evaluation (Guetterman *et al.*, 2017).

The entire research process consisted of several subsequent stages, including the use of both qualitative and quantitative methods, which did not mean combining the normative and interpretative paradigms. Still, it resulted from a deep consideration of the sense of using them to obtain high-quality empirical material (Konecki 2000, p. 22). This integration allows for a more comprehensive understanding of complex phenomena by leveraging the strengths of both qualitative and quantitative data (Fetters *et al.*, 2013). This comprehensive research method guaranteed its credibility, precision, and deep understanding of the phenomenon under study.

At the beginning, an analysis of existing data was carried out, consisting of collecting information from literature, databases, Internet portals, and discussion forums. Using available sources, such as public statistics (Eurostat, Central Statistical Office) and numerous studies about the study, both quantitative and qualitative data were analyzed. In terms of quantitative data, descriptive and mathematical statistics techniques were used, mainly regression analysis, to formulate a coherent picture of reality and establish relationships between individual variables.

Qualitative data from source materials such as reports, analyses and articles allowed a deeper understanding of the studied issues. As a result, the information obtained allowed the formulation of certain assumptions regarding the research topic and specific research questions. These assumptions formed the basis for further stages of the study, including the development of a measurement tool for field qualitative research (dispositions for expert interviews).

The next stage was expert interviews conducted in selected enterprises. As part of the research project, 9 expert interviews were conducted with people implementing innovative crowdsourcing projects in organizations based on a previously developed interview scenario (Oppenheim, 2001). The interviews were recorded using digital devices, which enabled their repeated playback and transcription.

The information obtained was analysed using the constructionist model and Atlas.ti analytical software. An open coding technique was used, and the analysis process involved constant comparison analysis. This allowed the identification of key factors

influencing the use of crowdsourcing by Polish enterprises and the formulation of hypotheses for further verification.

After the qualitative analysis, the quantitative study began. For this purpose, a survey study on crowdsourcing was conducted using the CATI technique. Thanks to a structured questionnaire, uniform data was collected from respondents during telephone interviews. The study was conducted on a sample of 600 randomly selected SME sector enterprises in Poland.

The research sample included weights that determined individual groups of enterprises, i.e., the size of the enterprise (based on current employment), the location of the enterprise's headquarters, and the dominant scope of activity. The collected data was subjected to statistical analysis using IBM SPSS Statistics 21 software, with descriptive analysis and accuracy criteria considered, which allowed for the verification of assumptions regarding the use of crowdsourcing in Polish companies.

Although the non-representativeness of the research sample limits the possibility of generalizing the results of quantitative research to the entire population, the importance of this research remains important as a pioneering initiative. Poland has so far lacked comprehensive analyses on the use of crowdsourcing and crowdsourcing platforms in Polish enterprises, especially in the context of their impact on innovation.

This study fills an important knowledge gap in this field, and the presented empirical data and the resulting interpretations and analyses are theoretically accurate and reliable, constituting a valuable source of knowledge about the studied issues. The conclusions were based on cross-sectional observations and compared to the results of previous studies to address potential weaknesses of this approach (Babbie, 2021).

4. Research Results

The use of specific solutions, technologies, etc. can be structurally determined, and thus account for, for example, the differentiation of business entities. This is because some applications are characteristic of a specific group of companies, such as jet engine technology in research and development companies of the defense industry.

This is no different in the case of crowdsourcing. Companies that use crowdsourcing in their daily operations are characterized by certain features. This means that they can be described precisely using these attributes, as specific characteristics.

The specificity of the companies that use crowdsourcing was illustrated by juxtaposing the variables that characterise the companies (so-called metrics) with the declaration of using this type of solution in their business.

Table 1. The length of time a company has been on the market and the use of crowdsourcing.

Number of years on the market	Use of crowdsourcing		Total
	no	yes	
up to 3 years	15.7%	22.0%	37.7%
4-10 years	19.5%	20.7%	40.2%
over 10 years	10.3%	11.8%	22.2%
Total	45.5%	54.5%	100.0%

Source: Own calculations in IBM SPSS.

Table 1 shows the use of crowdsourcing by companies in Poland, considering how long they have been on the market. The research shows that more than half (54.5%) of the companies involve the “crowd” in the company’s activities. One in four companies (25.5%) plans such activities, and one in five (20.0%) does not use this form of activity. It seems that crowdsourcing is mainly used by business entities that are relatively new to the market (up to 3 years) - they account for 22.0% of all surveyed companies. In other words, one-third (35.2%) of all companies using crowdsourcing are businesses whose period of operation has not exceeded 3 years. The data does not indicate that the likelihood of using crowdsourcing increases with the number of years on the market.

Another characteristic of companies that can characterise crowdsourcing is the size of the company.

Table 2. Company size and use of crowdsourcing.

Company size	Use of crowdsourcing		Total
	no	yes	
micro company	8.5%	6.6%	15.2%
small company	23.5%	31.2%	54.7%
medium company	13.1%	17.0%	30.2%
Total	45.1%	54.9%	100.0%

Source: Own calculations in IBM SPSS.

The data presented in Table 2 shows that the most common crowdsourcing mechanism in Poland is used by small enterprises (31.2%), i.e., companies with between 11-50 employees. The share of medium-sized companies (51-250 employees) involving the ‘crowd’ in their activities to economic entities that do not use this type of activity is 17.0% to 13.1%. Only 6.6% of micro-enterprises (up to 10 employees) use crowdsourcing in their activities.

The data shows that crowdsourcing is used least frequently precisely in the case of the smallest economic entities. The study noted a greater number of micro-enterprises that do not use crowdsourcing than those that use this mechanism in their activities.

Companies using crowdsourcing can stand out in terms of turnover for the last year.

Table 3. *Company turnover for the last year and use of crowdsourcing.*

Company turnover	Use of crowdsourcing		Total
	no	yes	
up to PLN 2 million	0.7%	0.7%	1.3%
from PLN 2 to 8 million	37.7%	45.2%	82.8%
from PLN 8 to 200 million	5.7%	7.2%	12.8%
over PLN 200 million	1.5%	1.5%	3.0%
Total	45.5%	54.5%	100.0%

Source: *Own calculations in IBM SPSS.*

Considering the data in Table 3, there was no clear difference between companies using crowdsourcing and not in terms of their turnover in the last year. The largest number of companies using crowdsourcing are those whose turnover in the last year was in the range of PLN 2-8 million (45.2%). This means that almost every second company uses a crowdsourcing mechanism in its operations. It is worth noting that as the level of a company's turnover increases, the use of crowdsourcing is not recorded more frequently.

Analysis of the data on surveyed companies in Poland shows that the leading sectors in terms of the use of crowdsourcing are companies focused on other service activities (8.7%), financial and insurance activities (8.0%), information and communication (6.7%), wholesale and retail trade and vehicle repair (5.0%), and cultural, entertainment and recreation activities (4.0%).

Another characteristic of companies that can characterise crowdsourcing is access to knowledge about the solution. In the era of the so-called knowledge-based economy, the realisation of set goals by economic entities requires the creation of an organisational culture that supports the sharing and multiplication of knowledge as a basic and necessary resource. Mutual trust and favourable conditions for the uptake of solutions supporting an increase in the level of innovation, such as crowdsourcing, depend on this.

During this research project, in face-to-face interviews with representatives of individual companies, it was requested that only people who are competent in crowdsourcing answer the questionnaire.

Table 4. *Company turnover for the last year and use of crowdsourcing.*

Position within the company	Use of crowdsourcing		Total
	no	yes	
manager or specialist	36.2%	43.7%	79.8%
owner	9.3%	10.8%	20.2%
Total	45.5%	54.5%	100.0%

Source: *Own calculations in IBM SPSS.*

Based on the data in Table 4, it can be observed that the vast majority of those who answered the questionnaire were employed as managers and specialists (79.8%). One in five respondents was the owner of the business (20.2%) that was surveyed. There was no significant difference between the use of crowdsourcing in the company in terms of who answered the questionnaire, which may confirm the fact of talking to competent people and at the same time be an indicator of the reliability of the survey conducted.

5. Comparison with the Results of Studies in Other Countries

The results of studies on the use of crowdsourcing in other countries cover a broad international context, describing both large corporations and startups. This means that the attempt to compare them with the results presented above is limited only to those aspects that are substantively justified due to the availability of data.

The results of the study indicate that crowdsourcing is a strategic tool that improves the performance of companies, increasing their innovation and adaptability (Pavlidou *et al.*, 2023). Similar findings can be found in a study of Polish SMEs, which indicates that crowdsourcing helps them gain a competitive advantage (Niedzielski *et al.*, 2023). However, in the case of Poland, more emphasis is placed on the cognitive and exploratory aspect, which is due to the relatively little experience of domestic companies in using this method (Kowalik and Pleśniak, 2021).

Other reports have cited key determinants of crowdsourcing implementation, such as access to technology, organizational culture, and openness to innovation (Kamei and Idota, 2021). Recent studies indicate that Polish companies, especially small and medium-sized ones, recognize the potential of crowdsourcing in the innovation process, but are concerned about intellectual property protection and quality control of community outputs (Niedzielski *et al.*, 2023).

Additionally, a lack of awareness about the benefits of crowdsourcing and uncertainty about the legal aspects are significant barriers to its implementation (Kowalski and Nowak, 2023). Similar concerns about intellectual property protection and quality control have been identified in studies of crowdsourcing in small and medium-sized companies in other countries (Nasution *et al.*, 2023).

Another study highlights that companies using crowdsourcing perform better in product and process innovation (Pavlidou *et al.*, 2023a; 2023b; Rietzler, 2023; Pollok *et al.*, 2019). In Poland, according to the analysis, crowdsourcing also fosters innovation, although mainly in the service and technology sectors. Polish companies, especially those with short market tenure, are more likely to engage the community to create new solutions than companies with longer experience.

Another study found that startups face barriers related to motivating participants and maintaining the quality of solutions provided (Kamei and Idota, 2021). In Poland, similar difficulties have been identified as significant constraints - especially a lack of trust in crowdsourcing and difficulties in integrating the results of the community's work into the company's internal processes.

Research indicates that issues such as data quality, privacy, trust, motivation, and diversity are critical to the success of crowdsourcing initiatives (Kumar *et al.*, 2023). In addition, managing and motivating large and diverse groups of participants and ensuring the quality and relevance of inputs are significant challenges in crowdsourcing (Smith, 2024).

Polish SME companies are less experienced in using crowdsourcing than their foreign counterparts but are showing growing interest in the method. Compared to international studies, Polish companies are more likely to use crowdsourcing in areas with lower barriers to entry, such as services and technology. Implementation barriers, such as lack of trust in crowdsourcing and uncertainty about the quality of results, are more strongly emphasized in Poland than in international surveys.

In the long term, crowdsourcing has the potential to increase the innovativeness of Polish companies but requires further education and changes in organizational culture. Research indicates that despite its undoubted benefits, crowdsourcing is rarely used in small and medium-sized companies, mainly due to barriers such as lack of trust and uncertainty about the quality of results (Hupe *et al.*, 2022). In addition, there is a need to develop strategies to help SMEs overcome these barriers and effectively implement crowdsourcing into business processes (Hupe *et al.*, 2022).

A comparison of Polish and international studies shows that despite similar challenges and benefits of crowdsourcing, Polish companies are only just developing their competence in this area. A key challenge for companies in Poland is to overcome cultural and organizational barriers that limit the full use of crowdsourcing's potential in business development and innovation.

6. Discussion and Conclusions

Based on the above analysis, one may be tempted to make some characterization of the business entities that use crowdsourcing in their operations. If we look at the picture emerging from the quantitative survey, crowdsourcing is most often used by relatively new (up to 3 years old) and small enterprises (with 11-50 employees), centered around other service activities, financial and insurance activities, information and communication, wholesale and retail trade and vehicle repair, as well as activities related to culture, entertainment and recreation, whose turnover in the last year was in the range of PLN 2-8 million.

However, it should be remembered that this is the reality emerging from statistical grounding, which does not fully reflect all the complexities and non-obviousness of the economic world.

Given the limited experience of Polish companies in using crowdsourcing, there is great development potential for the coming years. The Polish market does not fully reflect previous crowdsourcing models that have been implemented in developed countries with extensive experience in its use. As a result, various forms of crowdsourcing use may emerge in the Polish market, which differs from the accepted model solutions.

In addition, in the era of the knowledge economy, the achievement of goals by companies requires the creation of an organizational culture that supports the sharing and multiplication of knowledge as a key and indispensable resource. Transparency and effective communication are key to building trust between organizations and colleagues and creating favorable conditions for the uptake of solutions that support increased levels of innovation through the crowdsourcing tool.

The results of the research presented in this article indicate some methodological reflections, i.e. the weaknesses of the measurement tool used. The construction of the survey questionnaire was based on questions of a declarative nature, which in the future should be changed and focus on observing the actual attitudes and behavior of entrepreneurs and managers responsible for crowdsourcing processes.

This is because based on the totality of the empirical material, which is impossible to present here, there is great doubt about the use of crowdsourcing mechanisms by more than half of Polish companies. We suppose that the level of awareness of Polish pre-entrepreneurs and managers about crowdsourcing is low.

It should be noted that in Poland there is practically no research on the use of crowdsourcing and crowdsourcing platforms in Polish enterprises along with its impact on innovation processes. Therefore, it is necessary to undertake research on the crowdsourcing market in Poland, including, among others, the level of use of crowdsourcing and crowdsourcing platforms by Polish enterprises, ways of organizing processes related to crowdsourcing projects, the structure of work processes related to projects on various crowdsourcing platforms (Kuzionko-Ochrymiuk *et al.*, 2025; Henhappel *et al.*, 2023).

A comparison of Polish and international research shows that, despite similar challenges and benefits of crowdsourcing, Polish companies are still developing their competence in this area. A key challenge for companies in Poland is to overcome cultural and organizational barriers that limit the full use of crowdsourcing's potential in business development and innovation. These barriers include resistance and skepticism from traditional institutions, as well as issues related to data quality, privacy, trust, motivation, and diversity (Alam and Campbell,

2023). Additionally, cultural differences can impact communication and knowledge sharing within organizations, affecting the effectiveness of crowdsourcing initiatives (Wagenknecht *et al.*, 2017).

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