

THE MEDIATING ROLE OF A CROWDSOURCING IN THE RELATIONSHIP BETWEEN EMPLOYEE ENGAGEMENT AND INNOVATIVE BEHAVIOUR – A STUDY OF LOCAL GOVERNMENT

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ABSTRACT

The aim of the article is to investigate the mediational role of crowdsourcing in the relationship between employee engagement and innovative behaviour. The data for the study were collected using a survey questionnaire in 205 municipal offices in Poland which make use of crowdsourcing. Credibility and validity were confirmed by factor analysis. Correlation and regression analysis were used to test the hypotheses. The research results show that crowdsourcing mediates in the relationship between employee engagement and innovation behaviour. These discoveries provide useful information for local governments, especially for those which use crowdsourcing and want to maximise the benefits of this. The conclusions emphasise that employee engagement supports the implementation and use of crowdsourcing, which facilitates the shaping of innovative behaviour. The implications for future research and management practice are further discussed. The results are limited since the study was conducted only in one region, i.e. in Poland, and the data were collected from public organisations, more precisely municipal offices.

***Keywords:** employee engagement, innovative behaviour, crowdsourcing, local government*

INTRODUCTION

Recent management literature recognises employee engagement as a crowdsourcing factor [2]. It is suggested that employee engagement allows the implementation of crowdsourcing and the maximisation of benefits from it, especially in the context of the organisations' strategy change and employee participation in the coordination of crowdsourcing. Empirical research also indicates that crowdsourcing can also influence innovation behaviour, but also innovation behaviour can foster crowdsourcing implementation.

However, empirical studies on the relationship between employee engagement, crowdsourcing, and innovation behaviour are limited. It should be emphasised that the majority of research studies on the relationship between employee engagement and crowdsourcing were conducted in manufacturing companies, innovative and mature industries. In contrast, previous research on crowdsourcing in public organisations was conducted in ministries, governments and government agencies and healthcare [4]. The literature emphasises, however, that research should be conducted in cities, since crowdsourcing should be inscribed in their strategies and helpful during spatial planning. It is also of key importance for the socio-economic development of cities, the creation of public policies aimed at providing basic living standards and including residents in decision-making, in particular in developed countries.

By adopting the Social Exchange Theory (SET) as a theoretical lens, the article focuses on understanding the interdependencies of employee engagement, crowdsourcing, and innovation behaviour [1]. In line with this theory, the employees' approach to novelties changes over time while maintaining trust, loyalty, and perceiving benefits as long as both parties adhere to the

rules of exchange, which usually involve reciprocity and gratitude. It is assumed that there is a match between employee engagement and crowdsourcing. Moreover, employee engagement is oriented on supporting and shaping innovation behaviour. Crowdsourcing is supposed to contribute to innovation behaviour. The aim of the article is to study the mediational role of crowdsourcing in the relationship between employee engagement and innovative behaviour. In order to achieve the assumed goal, in the period from January to June 2018, research was carried out using an online survey questionnaire in 205 municipal offices in Poland.

THEORETICAL FRAMEWORK

Employee engagement

Employee engagement are generally perceived in the categories of “a positive, fulfilling, work related state of mind that is characterized by vigor, dedication, and absorption” [13]. Vigour refers to a high level of energy and mental resistance at work. Whereas, dedication means a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption means fully concentrated, being in a state of flow characterised by focused attention, a clear mind, effortlessness, concentration, loss of self-consciousness, distortion of time, and intrinsic enjoyment. Based on the social exchange theory (SET), one of the most influential conceptual paradigms for understanding workplace behaviour [7] and employee engagement is a mutually beneficial type of reciprocal relationship, where the employer and employee undertake actions towards one another that go far beyond their mutual formal commitments. In this context: one way for individuals to repay their organization is through their level of engagement. That is, employees will choose to engage themselves to varying degrees and in response to the resources they receive from their organization.

Crowdsourcing

There are many different definitions of crowdsourcing in the literature, both English and native. The most-cited is that by Howe [10] who states that crowdsourcing is “the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call”. In another approach, Howe’s continuator, Brabham [3] defines crowdsourcing as an “online, distributed problem-solving and production model that leverages the collective intelligence of online communities to serve specific organizational goals”. An analysis of the multiplicity of definitions allowed proposing an original definition of crowdsourcing. According to the original definition, crowdsourcing is an organisation's activity consisting in the inclusion of virtual communities in the form of an open call using an online platform, in problem solving, implementation of innovations or creating ideas or other tasks so far only implemented by the organisation’s employees.

Innovation behaviour

Innovation behaviour signifies a process in which new ideas are generated, created, developed, applied, promoted, realised, and modified by employees to benefit their role performance within the organization. Thus, the manifestation of innovation behaviour is recognising problems, generating ideas or solutions, building support for ideas and their implementation and the application by the employees of new ideas to perform their duties. It comes down to the ability and skills to take a risk and seek innovative solutions, a possibility of creating novelties, their implementation and generativity [11].

Employee engagement and innovation behaviour

Innovation behaviour is connected with voluntariness to engage in innovative activity. This means that in order to be innovative, employees must generate better ideas and solutions without external pressure. Apart from knowledge, skills, and abilities, it was argued that innovation behaviour is largely dependent on the attitude and motivation of employees. According to the Social Exchange Theory (SET), when employees receive values by strengthening their position and training, they feel a sense of consideration and they repay the organisation by showing engaged behaviour connected with doing something more than just obligatory tasks. This results in innovation in the organisation.

The existing studies have shown a positive relationship between employee engagement and innovation behaviour. The literature states that employee engagement can strengthen support through innovation as part of job responsibilities. According to Abraham [1], employee engagement strengthens innovation behaviour, productivity, readiness to devote extra time to work and pride in the work performed. Employee engagement is one of the key factors of creativity and innovation. In addition, statements can be found that say that excessive employee engagement leads to destructive behaviour. Some researchers rely on the assumptions that innovation behaviour contributes to employee engagement. Currently, there is an increasing pressure on innovation and innovation behaviour in public organisations, in particular local governments [14]. Taking into consideration the huge role of innovation behaviour in these organisations, it is surprising that the context of employee engagement has not been included in empirical research on a wider scale. This makes the problem of innovation behaviour very interesting for the researchers dealing with employee engagement. In the face of demands and pressure of innovation behaviour, governments are trying to find ways to be more innovative by encouraging employees to implement new and innovative ideas and change existing habits. Therefore, a positive relationship is expected between employee engagement and innovation behaviour:

Hypothesis 1: Employee engagement is positively correlated with innovation behaviour.

The mediatory role of crowdsourcing in the relationship between employee engagement and innovation behaviour

In recent years, researchers recognise that the pursuit of the implications and benefits of crowdsourcing requires proper design of the entire endeavour, focusing on creating an organisational environment conducive to crowdsourcing, necessary to effectively acquire knowledge from virtual communities and a change in the approach to work [6].

Extensive analyses suggest that not only the infrastructure and functionality of the crowdsourcing platform, appropriate designing and assigning of tasks to members of the virtual community, trust [5] are important for crowdsourcing, but also the engagement of the organisation's employees. It is assumed that employee engagement plays a key role in the implementation of crowdsourcing. This particularly affects the acceptance of ideas acquired through crowdsourcing, the perception of benefits and their use in professional work. Without this, crowdsourcing will not be accepted by employees, and knowledge gained in this way will not be used by them.

Previous research showed a positive impact of crowdsourcing on innovation behaviour [15]. It can be argued that crowdsourcing fits very well with innovation behaviour. Crowdsourcing is also recognised as a strategic model of the organisation that allows the involvement of a

motivated and interested crowd. Moreover, it is recognised that members of the virtual community can generate more original ideas than professionals. On the other hand, organisations can make better use of the knowledge, skills, and resources acquired from virtual communities. Crowdsourcing can promote and strengthen innovative behaviour. First of all, knowledge gained through crowdsourcing can be conducive to the process of introducing new ideas for problem solving. Secondly, crowdsourcing, through the engagement of employees in its implementation, contributes to taking actions by them oriented on creating, presenting and successfully introducing new products at every level of the organisation, in particular developing ideas regarding new products, technologies, and administrative procedures the aim of which is to improve the relationships at work and significantly improve their effectiveness [15]. Since both employee engagement and crowdsourcing have an impact on changing innovation behaviour, it can be expected that employee engagement contributes to crowdsourcing. In addition, crowdsourcing is expected to contribute to shaping and enhancing innovation behaviour. The following hypothesis can be formulated:

Hypothesis 2: Crowdsourcing positively mediates employee engagement and innovation behaviour.

DATA AND METHOD

Sample and procedures

The data used in the research come from an online survey conducted among a representative sample of the managerial staff of municipal offices in Poland. The research was carried out from January 2018 to June 2018. At that time, an e-mail invitation was sent to complete an online survey to all 930 municipal offices in Poland. In total, 501 correctly completed survey questionnaires were received (response rate of 53.87%). Basing on the responses obtained, the offices that have not implemented and have not been using crowdsourcing were excluded from further analysis. As a result, 205 municipal offices in Poland reaching for crowdsourcing were identified. The municipal offices participating in the survey were located in cities with up to 20,000 inhabitants (55.49%), employing between 50 and 99 people (45.51%). The respondents were women (59.68%) in the age group of 41-50 years, (33.73%), employed in managerial positions (79.44 %), with seniority over 10 years (68.26%), with higher education (97.00%).

Variables and measures

Independent variable. To measure employee engagement, a shortened 9-item Utrecht Work Engagement Scale (UWES) was used. All elements were measured using a 5-point Likert scale ranging from 1 (definitely disagree) to 5 (definitely agree). The short scale includes nine items and examines the three dimensions of vigour, dedication, and absorption. Reliability and accuracy of the UWES questionnaire was analysed by the authors in research in various cultural conditions. Thus, vigour was assessed with three items and reliability was 0.74, dedication was measured with three items and reliability was 0.64, absorption was assessed with three items and reliability was 0.79. Cronbach's alpha value for the final scale construction for organisational engagement is reliable ($\alpha = 0.89$).

Mediator variable. To measure crowdsourcing the approach of Xu, Ribeiro-Soriano, and Gonzalez-Garcia [15] was applied. It includes 8 items. For the current study, the scale only included five points ranging from 1 (strongly disagree) to 5 (strongly agree) to remain consistent with other test items. Cronbach's alpha for crowdsourcing measured with 8 points is very satisfying because it achieves a result of 0.82.

Dependent variable. Innovation behaviour is measured by the scale created by Janssen [11]. This scale consists of three parts of each 3 questions: idea generation, idea promotion, and idea implementation. Each question is answered on a 5-points Likert scale from 1 - never to 5 - always. Cronbach's alpha for this item is 0.82. The results of the tests demonstrated that the scale was reliable and valid.

The scales used consist of questions formulated positively grouped according to individual dimensions of organisational engagement, which may involve the risk of a typical methodological error [12]. In order to identify this effect, the level of the common method variance was estimated. Due to the limitations of available techniques, Harman's single factor test was used. The single factor test showed that the variance of the univariate solution does not exceed 50% and amounts to 26.00%.

RESULTS

Hypotheses testing

This study examined the moderating effects of crowdsourcing on the relationship between employee engagement and firm innovation behaviour. Table I shows the means, standard deviations, and correlations for all measured variables in the study. The results of correlation analysis determine the degree and direction of relationships among the research variables. The results show that there is a high level of positive correlation between overall crowdsourcing and innovation behaviour ($r = 0.301$; $p < 0.001$), between crowdsourcing and idea generation ($r = 0.292$; $p < 0.001$), between idea promotion ($r = 0.297$; $p < 0.001$) and between crowdsourcing and idea realization ($r = 0.239$; $p < 0.001$). These results provide an import support for the relationships studies in research hypotheses.

Table I. Descriptive Statistics, Reliability Measures and Correlation

| Variables/ dimensions | Reliability (α) | Mean | SD | EE | VI | DE | AB | C | IB | IG | IP |
|---------------------------------|-----------------------------|------|------|---------|--------|--------|------|--------|--------|--------|--------|
| Employee engagemen t (EE) | 0,90 | 3,79 | 0,72 | 1 | | | | | | | |
| Vigor (VI) | 0.94 | 3,53 | 0,84 | 0.935** | 1 | | | | | | |
| Dedication (DE) | 0.94 | 3,90 | 0,71 | 0.915** | ,806** | 1 | | | | | |
| Absorption (AB) | 0.95 | 3,94 | 0,79 | 0.906** | ,757** | ,735** | 1 | | | | |
| Crowdsour cing (C) | 0.82 | 3,34 | 0,88 | 0.061 | ,041 | ,065 | ,065 | 1 | | | |
| Innovative behaviour (IB) | 0.93 | 3,93 | 0,73 | 0.043 | ,024 | ,036 | ,058 | ,301** | 1 | | |
| Idea generation (IG) | 0.94 | 3,99 | 0,84 | 0.009 | -,004 | ,001 | ,028 | ,292** | ,925** | 1 | |
| Idea promotion (IP) | 0.94 | 3,85 | 0,79 | 0.073 | ,060 | ,066 | ,077 | ,297** | ,927** | ,792** | 1 |
| Idea realization (IR) | 0.95 | 3,94 | 0,76 | 0.037 | ,012 | ,035 | ,056 | ,239** | ,907** | ,747** | ,766** |

** (2-tailed) at the level of 0.01.

We used conditional process modeling to test for moderated mediation as outlined by Hayes [9] using the PROCESS macro. Specifically, we tested to see whether crowdsourcing, moderated the relationships among employee engagement, and innovation behaviour (this model corresponds to Model 4 in Hayes, 2013). Moderated mediation occurs when either path a (from employee engagement to crowdsourcing) or path b (from crowdsourcing to innovation behaviour), or both are moderated [8]. One-tailed tests were used for all moderation hypotheses because they were directional. Power analyses are not defined for complex conditional process models. Analysis of the moderation effect indicated that the relationship between employee engagement and innovation behaviour was not significant ($\beta = 0.04$). Contrary to expectations, no significant effects emerged for crowdsourcing as moderators of the relationships among variables ($\beta = 0.30$), crowdsourcing did not moderate the relationship between employee engagement and innovation behaviour. Therefore, considering path a there was no statistically significant relationship between level of employee engagement and crowdsourcing. Therefore, we can conclude that crowdsourcing isn't a mediator in the relationship between employee engagement and innovation behaviour.

DISCUSSION AND CONCLUSION

Nowadays, local governments are under enormous pressure and the need to implement trends related to digitization, open government, co-management, and the use of information and communication technologies. In addition, the growing expectations of citizens towards local governments, the need to respond to external turbulences, the pressure of learning, with a simultaneous negative image of the governments, a general decline in confidence in public organizations are indicated.

Employee engagement has become one of the important factors thanks to which organizations can enhance their efficiency, the quality of services offered and achieve organizational goals. An engaged employee is more open to accepting novelties and using them at their workplace. This may further contribute to shaping innovation. Organizations, including the public ones, are more and more inclined to include crowdsourcing in their strategies, thanks to which they can create new solutions, respond to organizational problems, shape organizational learning and innovative behaviour may be demonstrated by employees. This leads to the development of new ideas and solutions for an identified problem and the development of support for new ideas and solutions, so that they become a part of the organization. The article focuses on examining the mediational role of crowdsourcing in the relationship between employee engagement and innovative behaviour. The general assumption of the tested model was, according to the Social Exchange Theory, the importance of crowdsourcing as a mediator in the relationship between employee engagement and innovative behaviour, which means that employee engagement can have an influence on crowdsourcing, which in turn would entail innovative behaviour. The obtained results suggest that crowdsourcing allows the organization to shape innovative behaviour, in particular idea generation, idea promotion, and idea realization, in accordance with the findings of Marjanovic et al. (2012).

The study conducted also supports the previous literature on the importance of employee engagement for crowdsourcing. The literature indicates that employee engagement is support and a requirement for crowdsourcing activities. The findings obtained do not confirm the opinions presented in the literature, employee engagement as a mutually beneficial type of mutual relations, where the employer and employee undertake actions that go far beyond mutual formal commitments - directly contributes to the acceptance and willingness to use crowdsourcing solutions by employees. What is more, according to the theory of social

exchange, it is necessary for both parties to observe the rules of exchange, which usually entail reciprocity and repaying. That is why crowdsourcing requires more than just employee engagement. This study contributes to the literature in two ways. First, it deals with a gap in literature, responding to recent problems connected with employee engagement and crowdsourcing. Second, it fills the gap between literature on employee engagement and innovative behaviour, providing empirical evidence, suggesting that crowdsourcing is, in the context of public organizations, not contributing to the growth of these relationships.

The tests conducted have some limitations. First of all, the results are limited since the study was conducted only in one region, i.e. in Poland, and the data were collected from public organisations, more precisely municipal offices. Although our study of the literature in this area leads us to expect that our findings are likely to be applicable to some other national contexts and other organizations, future research should test the hypothesis with data from other contexts. Nevertheless, the conducted research may and, according to the author, should be a starting point for further analyses connected with the issue of employee engagement. Future research can test the impact of other structures, such as employee motivation and employee commitment in the relationship between employee engagement and innovation behaviour.

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