The Effect of Strategic Operational Effectiveness Analysis of Crowdsourcing Initiatives*

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Abstract

Over the years, crowdsourcing has become an important strategy for organizations looking for answers to improve their innovative performance. The aim of the study is to examine the effect of crowdsourcing and crowd voting on organizational performance. The result of the study shows that crowdsourcing and crowd voting have a significant effect on organizational performance. The study concluded that crowd creation and crowd voting are major factors that influence the performance of organization. The study recommended that managers should implement crowd creation policies in their organization, so as to increase their performance. Also, the management of companies should pay more attention to crowd voting as this will boost their performance.

Keywords: Crowdsourcing; Crowd Voting; Crowd creation; Organization; Performance

Declaration of competing interest: No conflicts declared

Introduction

Crowdsourcing is a novel strategy that is becoming more well-known as businesses look to leverage the unique skill sets and collective wisdom of the crowd to improve a range of operational elements (Sharma, 2010). An important topic of interest for crowdsourcing research is how it affects organizational performance.

Over time, crowdsourcing has seen substantial change. Its initial associations were mostly with creative jobs, including coming up with ideas or creating material (Howe, 2006). But now, a wide range of industries are using it for applications, from creativity and problem-solving to data labelling and crowdsourcing (Gurca et al., 2023). Crowdsourcing takes many forms in organizational settings: open innovation, idea competitions, bug bounties, and citizen science initiatives are just a few examples. Innovation has a strong correlation with crowdsourcing. It stimulates innovation and product development by giving businesses access to a greater range of concepts and solutions (Howe, 2006). Crowd intelligence has the potential to produce ground-breaking inventions and enhance current procedures. Businesses who use crowdsourcing for innovation well frequently see improvements in the quality of their products and their time to market (Feller et al., 2012).

When solving complicated problems, crowdsourcing can be especially useful. Crowdsourcing is a useful tool for organizations dealing with problems that call for a variety of viewpoints or subject-matter expertise. This strategy is used in industries such as healthcare, where crowdsourcing is used for data analysis or medical research. Increasing the number of people who can solve problems might help organizations make better decisions and function better overall. Through operational efficiency, crowdsourcing can also improve the performance of an organization (Ghezzi et al., 2013). For example, companies might save labor costs and processing time by contracting out specific jobs, like data input or picture labelling, to a distributed crowd. Crowdsourcing platforms facilitate the provision of a scalable labor force, allowing organizations to effectively adjust to demand fluctuations.

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Crowdsourcing has many advantages, but it also presents issues with work management and quality control (Dahlander et al., 2020). Ensuring the correctness and dependability of crowdsourced inputs is essential. It is essential to manage crowdsourced projects effectively to prevent detrimental effects on organizational performance. This includes providing clear instructions, feedback channels, and quality assurance procedures.

A number of reasons that have changed how businesses interact with external stakeholders and use collective intelligence are to blame for crowdsourcing's growing significance across a range of industries. The emergence of digital technology, encompassing social media and the internet, has greatly broadened the scope and potential applications of crowdsourcing (Li, 2016). Since mobile devices and high-speed internet are so widely available, organizations may quickly and easily connect in real-time with a global population of contributors. Crowdsourcing is now a viable and scalable strategy because of the reduction in entry barriers for participants and organizations brought about by this technological advancement.

Since there is now more rivalry as a result of globalization, businesses must take advantage of a variety of skills and viewpoints (Franzoni et al., 2014). Through crowdsourcing, one can reach a worldwide network of participants with a range of expertise, experience, and cultural backgrounds. It is possible to utilize this diversity to achieve a competitive edge and stimulate innovation in a variety of tasks, including as problem-solving and brainstorming.

Companies are always looking for ways to save costs and stay competitive. Distributing duties and obligations to a sizable, adaptable, and frequently less expensive labor force is possible with crowdsourcing (Gurca et al., 2023). Through crowdsourcing, companies can acquire specialized knowledge and abilities without incurring the overhead expenses linked to recruiting permanent staff members. Crowdsourcing gives businesses a way to innovate and take on challenging issues. Diverse crowds can generate original ideas and inventive solutions due to their collective intelligence. Crowdsourcing has emerged as a useful tool for idea generation and problem-solving in sectors like technology and healthcare where innovation is essential. Companies are employing crowdsourcing more and more to interact with consumers and get input in sectors like retail and consumer products. Consumers can offer input on current items, take part in the design process, and even help shape the creation of new features. This enables businesses better cater their goods to the needs of their customers while also increasing client loyalty. Globalization, technological advancements, the need for affordable solutions, and the possibility of improved creativity and problem-solving are the main factors driving crowdsourcing's growing importance across a range of industries. Additionally, crowdsourcing has developed into a useful method for gathering feedback from and engaging with customers, enabling businesses to adjust to shifting consumer preferences and stay competitive in a market that is changing quickly (Gurca et al., 2023).

Even though crowdsourcing has the potential to boost organizational performance, opinions differ on which precise performance indicators it will affect. While some studies focus on innovation, others stress cost-cutting or higher standards of quality. More research is necessary to address this unclear performance result situation. Examining efficient methods for risk reduction, quality control, and legal compliance in crowdsourcing can offer useful information for companies trying to work with outside contributors while maintaining standards of quality and legal compliance. The research can offer direction on the internal competencies and structures required to succeed in crowdsourcing projects by examining the organizations' preparedness to implement crowdsourcing (Santini et al., 2022).

Completing the gaps in the literature and carrying out thorough study on crowdsourcing and its effect on organizational performance can help by offering a comprehensive, practical, and nuanced grasp of the subject. With this information, organizations may optimize their crowdsourcing methods, make better decisions, and get better performance results.

The primary research objectives of this study is to examine the strategic operational effectiveness analysis of crowdsourcing initiatives. Specifically, the objective of the study seeks:

To evaluate the effect of crowd creation on organizational performance.

To examine the effect of crowd voting on organizational performance

This study reviewed both relevant and related literatures in relation to crowdsourcing and business innovation.

Rietzler, (2023) assessed the effect of crowdsourcing on organizational innovative performance. The result of the study found out that crowdsourcing has a positive and significant effect on the innovative performance of organizations. However, the study did not specify the scope and population of the study, also nothing was said about the theory used to underpin the study.

Hern, et al., (2022) examine the effect of crowdsourcing on new product development success. The authors used a large-scale data set collected from the crowdsourcing website. Participants' creative and evaluative contributions are

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used as proxies for crowdsourcing while innovation success was proxied by submission success. The study established that evaluative contributions and participants' creative contribution enhance new product innovations. The authors failed to specify the type of data, technique of data analysis, domain, population of the study, sample size if any and the theoretical underpinning of the study.

Chen, et al., (2021) examined effect of feedback on ideation performance of firms. The authors employed field data collected using text-mining techniques from an idea-crowding community. Crowdsourcing was categorized into positive and negative feedback, the study showed that positive feedback for increasing idea quality weaken as ideators gain experience. The result established that crowdsourcing affects open innovation. The study failed to reveal the period of the study and sector or domain the work focused on, also nothing was said about the theory that underpinned the work.

Jiao, et al., (2021), evaluates how crowdsourcing affects the creative quality of product design. The study's findings indicate that crowdsourcing has a positive and significant impact on the quality of product design innovation. But the study was vague about its population and its scope that guided the investigation.

Sun, et al., (2021) evaluated the role of knowledge synthesis and communication positions in open innovation. Using 3200 observation generated from 21 companies. After a careful study conducted the authors established that crowdsourcing has no effect on innovative knowledge generation by the studied organizations. The study failed to specify the theoretical underpinning of the study, the period covered by the study and the measurements of the various variables used in the study.

Pohlisch and Bogers, (2020) examine the effect of crowdsourcing on innovation performance. The authors used a large-scale survey data collected from 4500 firms in Germany. After a detailed review and study the authors established that firm with external search breadth gain more from crowdsourcing on their innovative performance while firms with optimal level of search breadth gain less form crowdsourcing on their innovative performance. The authors failed to specify the technique of data analysis, domain and the theoretical underpinning of the study.

Boons and Stam, (2019) examine the effect of crowdsourcing on innovative idea performance. The study considered both related and unrelated perspectives. The analysis of 2178 ideas submitted by 948 crowd members in response to 68 crowdsourcing idea challenges demonstrates the significance of educational backgrounds in giving people a variety of perspectives that may or may not be relevant to the creative idea performance of the company. The authors failed to identify the theory that underpin the study.

Cappa, et al., (2019), analyze how crowdsourcing affects the performance of companies in the stock market. Based on the resource-based view, the authors contend that if a company can extract value from an external crowd, it can turn into a valuable resource. The research found that two important contingency factors such as brand value and investment opportunities determine the conditions under which businesses can extract value from the crowd, leading to a favorable stock market response upon the announcement of a crowdsourcing campaign.

Christensen and Karlsson, (2019) investigated the concept of crowdsourcing new idea form outside the organization's environment selected assess and plough in to the firm. The study discovered that crowdsourcing has no significant effect on open innovation strategies. The study was not underpinned with any theory. The study focused on only one pharmaceutical company in Europe. Also, the period of time covered was not disclosed in the study.

Johnson, et al., (2019) evaluated the effects of technological upheaval, customer demands, competitive intensity, and environmental pressures on businesses' use of crowdsourcing for creative innovation, as well as how these factors mitigate the effect of crowdsourcing on innovation creativity. The authors' conclusions were based on the attention-based perspective. Based on this, the study's findings demonstrated that the degree of technological turbulence and competition has a positive impact on the use of crowdsourcing by businesses, and that environmental pressures interact with the influence of crowdsourcing on innovation and creativity. More specifically, the demand from customers emphasizes the positive correlation between crowdsourcing and innovation and creativity, while the volatility of technology reduces this correlation.

To get insight into the connections between crowdsourcing and organizational effectiveness, the resource-based perspective theory offers a useful framework. According to this notion, businesses can obtain a competitive edge through utilizing valuable and distinctive resources (Barney, 1991). One tool that has the ability to improve organizational effectiveness is crowdsourcing. Resources that are valuable, rare, non-substitutable, and difficult to copy (VRIN) might offer a source of sustained competitive advantage, according to the resource-based perspective theory. Crowdsourcing, according to Smith et al. (2013), provides companies with access to a vast array of outside talent, skills, and expertise. It is an exclusive resource that is valuable because it can lead to cost savings, increased organizational effectiveness, and innovation. The most well-known application of crowdsourcing is as a source of new ideas. The crowd or external contributors, can provide new ideas, alternative perspectives, and creative solutions

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to organizational issues (Kavaliova et al., 2016). Novel concepts can result in enhanced workflows, superior quality outputs, and novel product development, all of which boost an organization's effectiveness (Garcia et al., 2018).

The idea of absorptive capacity stresses that an organization's potential to identify, absorb, and use outside knowledge is another idea that the resource-based perspective theory emphasizes (Chatzoglou, et al, 2018). Crowdsourcing facilitates the acquisition of external ideas, skills, and solutions, hence improving an organization's absorptive ability. Better decision-making, better problem-solving, and eventually increased organizational performance can result from this.

Effective use of crowdsourcing can provide businesses a competitive edge. Through crowdsourcing, businesses can obtain specialized knowledge, abilities, and insights that they might not have access to internally (Barney, 1991). This benefit can take many forms, including increased customer happiness, financial savings, and speedier innovation—all of which boost organizational efficacy.

The philosophy of resource-based approach also emphasizes how important resource integration is. Organizations must carefully incorporate crowdsourcing into their procedures in order to optimize its effects on organizational effectiveness (Smith et al., 2013). This entails acquiring the skills necessary to manage and organize crowdsourced projects efficiently.

The theory of resource-based approach offers a useful perspective for comprehending the connections between crowdsourcing and organizational performance. One valuable and distinctive resource that supports creativity, absorbs information more readily, and eventually gives businesses a competitive edge that boosts productivity is crowdsourcing. For organizations to fully benefit from crowdsourcing, strategic integration and efficient resource management are essential.

Methods

Cronbach's alpha for all the variables is the approach used to determine the reliability of the constructs in this study; according to Sekaran (2003), Cronbach's alpha should lie between 0.700 and 0.999. Cronbach's alpha or internal consistency was employed to assess the validity of the questionnaire in this study. The results shown in table 2 indicate that the reliabilities were between 0.772 and 976, which is much higher than the 0.700 minimum values that Hair et al. (2010) identified as an acceptable threshold for instrument dependability. The correctness of the study's variables is supported by the above reliability statistics value for the three variables, which shows that there is no problem with eliminating a questionnaire item.

Table 2: Reliability

Variables of the study	Cronbach's Alpha If Item Deleted	Numbers Of Items	Decisions Rule
Organizational Performance	0.894	8	Reliable
Crowd Creation	0.772	7	Reliable
Crowd Voting	0.976	6	Reliable

Source; SPSS Version 23

The research investigation in this study discovered a Pearson association between organizational performance, crowd creation and crowd voting are presented in the table 3:

The study's variables, which include organizational performance, crowd creation, and crowd voting, are associated in table 3 as a matrix. In addition to a positive and significant association between all the variables, the correlation table shows that there is a strong positive relationship between crowd creation and crowd voting. Despite this, the connection suggests that both crowd generation and crowd voting tactics have a positive effect on organizational performance. Crowd creation has an r=400, crowd voting has an r=0.531, and organizational performance has an r=0.405 as dependent variables.

Table 3

Correlations				
Variables		Organizational Performance	Crowd Creation	Crowd Voting
Organizational Performance	Pearson Correlation	1	.405	.400
	Sig. (2-Tailed)		.000	.000
	N	364	364	364
Crowd Creation	Pearson Correlation	.405	1	.531
	Sig. (2-Tailed)	.000		.000
	N	364	364	364
Crowd Voting	Pearson Correlation	.400	.531	1
	Sig. (2-Tailed)	.000	.000	
	N	364	364	364

Source; SPSS Version 23

Regression coefficient shown in table 4 indicate that R square of =0.324, which indicates that an increase in the independent factors will result in an increase in organizational performance, this finding has supported the result presented in table 4 that there is a strong positive relationship between the independent variables (crowd creation and crowd voting strategies) and organizational performance. A rise in the independent variables would cause a 32.4% rise in organizational performance, and vice versa, according to the R2 of = 0. 324. Crowd creation and crowd voting therefore account for 32.4% of the variable or fluctuation in organizational performance, with the remaining 67.6% cause by other factors perhaps not mention in this model of the study.

Table 4

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.569[a]	.324	.320	1.01244
a. Predictors: (Constant), crowd voting, crowd creation				

Source; SPSS Version 23

Table 5 offers statistics regarding the F value in this study, the significant of the F (86.315) test at 0.000 indicating a significance level less than 0.05, it can be concluded that the regression model used meets the requirements of Goodness of Fit. Crowd creation and crowd voting variables have a simultaneous/joint effect on organizational performance in the population of the study as noted from the result presented.

Table 5

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	176.952	2	88.476	86.315	.000[b]
	Residual	370.037	361	1.025		
	Total	546.989	363			
a. Dependent Variable: organizational performance						
b. Predictors: (Constant), crowd voting, crowd creation						

According to the results in the table 6, crowd creation has a regression coefficient Beta value of 0.222, which means that assuming all other parameters remain constant; a 1% increase in crowd creation will boost organizational performance by 22.2%. The null hypothesis that stated crowd creation has no significant effect on organizational performance was rejected because the T value of 4.680, which is greater than the critical T at the 5% level of significance, shows that there is sufficient statistical evidence that an increase in crowd creation will result in an increase in organizational performance and vice versa this is equally supported by the P value of 0.000 level of significant.

Regarding the second hypothesis, the regression coefficient has a beta value of= 0. 442, indicating that if other variables are kept constant, an increase in crowd voting would result in a 44.2% improvement in organizational performance. Furthermore, the study's T value of 9.334, which is greater than the necessary T at the 5% level of

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significance, demonstrates that there is enough statistical support for the assertion that increasing crowd voting will improve organizational performance this is equally supported by the P value 0.000.

Table 6 summary of the coefficient of regression on crowd creation, crowd voting on organizational performance

Table 6
Regression result

Variables		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.116	.192		5.824	.000
	Crowd Creation	.224	.048	.222	4.680	.000
	Crowd Voting	.454	.049	.442	9.334	.000

Source: Field work (2023)

The purpose of the multicollinearity test is to determine if the independent variables (crowd creation and crowd voting) in the regression model are correlated or not (Wati & Isroah, 2019). Table 7 shows that VIF value has symptoms of multicollinearity in a study if VIF is greater than (>) 10 and the Tolerance value < 0.10. So, it can be seen in this study that crowd creation (X1) and crowd voting (X2) both have a VIF value of 1.196 < 10 and a Tolerance value of 0.836 >0.10, which means that there is not influence between the independent variables in this study, subsequently is the discussion of findings.

Table 7: Multicollinearity Test Results - Dependent Variable: Organizational performance

Model		Collinearity Statistics	
		Tolerance	VIF
1	Crowd Creation	.836	1.196
	Crowd Voting	.836	1.196

A. Dependent Variable: Organizational Performance

Discussion

This study examined the relationship between organizational performance and how it is affected by crowd creation and crowd voting. In this study, it was discovered that, the first hypothesis that stated crowd creation has no significant impact on organizational performance was rejected. This result stated in hypotheses one is in tandem with earlier research's results who noted that crowd creation is a significant variable that can influence organisational performance (DiPalantino & Vojnovic, 2009; Liu, Yang, Adamic, & Chen, 2020; Majchrzak & Malhotra, 2013) which found out that crowd creation is a significant variable that might influence organizational performance.

The second null hypothesis that stated that, crowd voting has no substantial impact on organizational performance was rejected because the p value is less than five percent. This second hypothesis's finding is consistent with other prior researchers findings (Malone, Laubacher & Dellarocas, 2009; Malone, Laubacher & Dellarocas, 2009; Bal, Weidner, Hanna & Mills, 2017) who found out in their studies that using crowd voting approach will improve an organization's performance skills and help it work toward achieving its objectives.

This extant study has a number of implications, both practically and theoretically, practical implications findings from this study will be of immense importance to the managers and stakeholders of business organization through decision taken and implementation, provided the findings from the study has revealed that crowd creation and crowd voting are significant variables that may influence organization, thus, managers of organization should ensure that crowd creation and crowd voting should be the concern of the business organization. In addition to that, this study may also be of significant via the extant literature that were reviewed in this study and the underpinning theory, past studies do not reviewed relevant literature on the variable of interest in this study (crowd creation, crowd voting and organizational performance) this is a good contributions to the body of literature in this study.

Few restrictions apply to this study. Our results may not extend to other circumstances because they were based on a specific crowdsourcing platform with a particular implementation of expert evaluation, audience voting, and production. Investigating the problem in more crowdsourcing competitions and non-contest venues (like the open innovation platform) might be intriguing. Recent open innovation research reveals that user communities are also capable of picking the finest ideas on behalf of the businesses. Second, one could expand on current research into winner-selection mechanism designs that combine crowd creation, crowd voting, and expert rating in novel ways (for example, by using crowd voting as a preliminary screening) and the effects of winner-selection mechanisms on other

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outcomes (for example, community building, learning, and knowledge collaboration). Third, even though we have employed matching techniques to allay the worry of endogenous winner-selection mechanisms, additional study (e.g., utilizing trials) is necessary to completely eliminate this worry. By explicitly assessing the impact of crowdsourcing and crowd voting on victory expectation, our theoretical model may also be put to the test. Also, to ensure more generalizability of the findings, subsequent studies may combine qualitative and quantitative methodologies in their research.

Conclusion

It is concluded that this study differs from previous studies of crowdsourcing as it takes a unique approach by examining crowdsourcing strategies by employing data which is an added value of the analysis in the field of crowdsourcing.

The following conclusions were drown based on the findings, finding in this study has revealed that crowd creation is a significant variable that may affect organizational performance, and hence it was recommended that managers should implement crowd creation plan so as to increase the organization performance. The study equally revealed a positive and significant relationship between crowd voting and organizational performance; therefore, it was recommended that crowd voting should be the mean concern of managers in the organization this will go a long way to boost the organizational performance.

List of abbreviations

Not applicable

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