Crowdsourcing without profit:
The role of seeker motivation and strategies

Abstract

While crowdsourcing is an important form of open innovation (OI), research has largely been limited to profit-seeking firms. Here we study how crowdsourcing is implemented by non-profit seeking organizations, and how it is different from the more familiar corporate context .Using data from local governments that use the same intermediary, we study how the variation of seeker motivation and strategies influences their online engagement behaviour, thereby making their crowdsourcing efforts more or less likely to succeed. Our findings suggest government agencies that adopt a strategic approach to crowdsourcing show a greater potential to produce successful outcomes, which in turn is underpinned by an overarching motivation to achieve transformative change. Based on this, we develop a three-phase model of crowdsourcing implementation. We also reveal how the non-pecuniary orientation of both seekers and solvers makes the motives, goals and processes of such crowdsourcing fundamentally different to corporate crowdsourcing. Our findings indicate that the local pool of solvers more closely resemble a cooperative community than the competitive crowds typically found in for-profit crowdsourcing. We offer broader implications of our insights for OI efforts of non-profit and corporate organizations alike.

1. Introduction

Open innovation (OI) provides a significant way for organizations to leverage external sources of innovation urowe(Chesbrough, 2003; Chesbrough & Bogers, 2014; West *et al.*, 2014), having an impact on innovation processes (e.g., Enkel *et al.*, 2009), innovation outcomes (e.g., Faems *et al.*, 2010) and firm performance (e.g., Laursen & Salter, 2006). Recently, crowdsourcing has emerged as an important OI mechanism by which organizations engage with an external voluntary "crowd" of individuals via online intermediary platforms seeking innovative ideas and solutions (Afuah & Tucci, 2012; Boudreau & Lakhani, 2009; Howe, 2006, 2008). Research has gained valuable insights on how firms crowdsource innovation via idea competitions (e.g., Piller & Walcher, 2006), innovation contests and tournaments (e.g., Boudreau *et al.*, 2011; Terwiesch & Xu, 2008), and collaborative communities (e.g., Boudreau & Lakhani, 2009); and on the effectiveness of crowdsourcing in solving innovation problems and capturing value (e.g., Afuah & Tucci, 2012; Jeppesen & Lakhani, 2010).

Yet, the majority of existing studies on crowdsourcing processes and outcomes have focused on corporate, for-profit organizations; hence, we know little about the applicability of this OI practice to government agencies and the not-for-profit context (Chesbrough & Bogers, 2014; Dahlander & Gann, 2010; West & Bogers, 2017; West *et al.*, 2014). Furthermore, only limited research has investigated how OI mechanisms such as crowdsourcing can be employed to improve society, even less so at the level of the local government (Chesbrough & Di Minin, 2014). Given that previous research has alluded to differences in OI practices between government and corporate institutions (e.g., Vanhaverbeke *et al.*, 2014; West & Bogers, 2017), it

is important to better understand crowdsourcing in this context, which has sometimes been referred to as "citizensourcing" (Hilgers & Ihl, 2010; Lukensmeyer & Torres, 2008). Building on prior definitions, here we define citizensourcing as the use of crowdsourcing by a government or non-profit government organization to seek input from the general public[1] through an intermediary to improve societal outcomes.

Previous researchers have identified examples of how local governments utilize citizensourcing to find innovative solutions to community problems (e.g., Bommert, 2010; Chesbrough & Di Minin, 2014). For example, the City of Melbourne uses a wiki-based platform to involve citizens in co-ideating improvements to community services, and co-designing policies that shape the city's future. The Christchurch City Council used a similar online engagement platform to crowdsource citizen feedback, ideas and designs to rebuild infrastructure such as the City Library after the 2011 New Zealand earthquake devastated much of the city. However, earlier research offers few insights into why and how these local government agencies deploy citizensourcing, and how these choices would affect the societal benefit that might be realized from these efforts.

Therefore, our goal in this study is to improve our understanding of crowdsourcing as an OI mechanism implemented by local governments to achieve their societal goals. Focusing on citizensourcing at the local government level, we pose the following research questions: (1) Which factors in citizensourcing efforts are most likely to lead to positive societal impact?; and (2) How does crowdsourcing in local governments differ from corporate crowdsourcing? In

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[1]   Some government crowdsourcing efforts may limit themselves to eligible voters (normally citizens), but others may seek suggestions from all residents or even visitors; for this study, we use the broader definition.

answering these questions, we develop a better understanding of government and public sector

organizations' crowdsourcing motivations, strategies and mechanisms (Chesbrough & Bogers,

2014; Hilgers & Ihl, 2010; Hilgers & Piller, 2011). We also respond to the calls of OI scholars

for more research investigating how corporate OI mechanisms such as crowdsourcing can be

applied by public, not-for-profit organizations to deliver societal benefits (Chesbrough & Di

Minin, 2014; Dahlander & Gann, 2010; West & Bogers, 2017; West *et al.*, 2014).

The remainder of this paper is structured as follows. First, we provide a brief overview of

prior research related to crowdsourcing and citizensourcing. We then discuss our data on the

crowdsourcing activities of 18 Australian local governments that use the same online

intermediary. We show how the regulatory pressures on the organizations in our sample provide

a previously-unstudied variance in the level of seeker motivation, strategies and online

engagement behaviour. From this, we discuss how this variance — and more generally the

differences between for-profit and governmental crowdsourcing — help and hinder the efforts of

government entities to utilize OI to improve society.

2. Background

Governments serve to create and deliver societal value by meeting the needs of the community

(Chesbrough & Di Minin, 2014). By innovating how they implement community services,

administration and policy-making, local, regional and national governments can better solve

community problems, and thereby produce enhanced societal benefits. To be more innovative,

these government agencies have been encouraged to learn from the private sector, particularly

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with the use of OI to access external ideas and bring them into the agency's innovation efforts (Hilgers & Ihl, 2010; Hilgers & Piller, 2011; Nambisan, 2008).

The rise of the digital era has provided organizations with new modes of societal value creation by implementing OI through web-based technologies (Piller & West, 2014; West *et al.*, 2014). Crowdsourcing has emerged as one such OI process by which firms co-ideate, co-design and co-innovate with an external crowd of individuals through an "open call" for ideas and "broadcast search" for solutions to R&D problems via online intermediary platforms (Afuah & Tucci, 2012; Poetz & Schreier, 2012; Viscusi & Tucci, 2016). By leveraging the "wisdom of crowds" and their capacity for social production (Surowiecki, 2004), firms are able to outsource innovation activities that were originally performed internally or in collaboration with a few firms to a large crowd of individuals (Afuah & Tucci, 2012; Howe, 2006, 2008; Piller & West, 2014). The crowdsourcing process allows firms to identify and select external ideas, which then can be acquired, integrated and commercialized through the inbound path of OI (West & Bogers, 2014).

Extant studies on crowdsourcing have predominantly focused on how for-profit companies implement it as an OI practice, examining such issues as the nature of the seeker and solver pools, the motivation of solvers, the rules and incentives of contests, and the definition of problems to be solved (e.g., Boudreau *et al.*, 2011; Boudreau & Lakhani, 2013; Jeppesen & Lakhani, 2010; Terwiesch & Xu, 2008; Wallin *et al.*, 2016). These studies have demonstrated how crowdsourcing helps firms overcome local search bias to look beyond existing sources of knowledge and tap into new (external) sources of innovation (Lüthje *et al.*, 2005). In doing so, it

forms an efficient and effective mechanism for private sector organizations to capture value from

OI (Afuah & Tucci, 2012).

Governments face challenges coming up with innovative solutions to difficult problems

for a variety of systemic reasons, including bureaucratic processes, top-down management and a

culture that is resistant to change (Bommert, 2010; Lukensmeyer & Torres, 2008). Following the

advent of the "new public management" approach that led to networked organizational forms

and processes, public sector organizations have also started to adopt more open, collaborative

avenues for innovation, problem-solving and societal value creation (Hilgers & Piller, 2011;

Nambisan, 2008). Local government agencies are seen to increasingly implement crowdsourcing

in the form of citizensourcing – an OI mechanism enabled by digital intermediary platforms by

which governments involve citizens to co-create public services, and co-design policies (Hilgers

& Ihl, 2010; Lukensmeyer & Torres, 2008), and thus collaboratively solve societal problems

(Bommert, 2010; Chesbrough & Di Minin, 2014).

Citizensourcing represents a potential transformation in the way government delivers

societal value. Looking beyond organizational boundaries for sources of innovation calls for a

paradigm change to the traditionally bureaucratic and closed outlook within government

(Bommert, 2010; Lee *et al.*, 2012). It means opening tasks related to public service creation,

administration and policy-making that were traditionally performed by public agents for the

citizenry to undertake via digital platforms (Hilgers & Ihl, 2010; Lee *et al.*, 2012). It is the latest

trend of Government 2.0 (Hilgers & Piller, 2011) where governments harness the resources and

creativity of citizens to improve the range and effectiveness of innovation outcomes, to enhance

societal good (Nambisan, 2008). The success of crowdsourcing as an OI practice by for-profit firms suggests that crowdsourcing can deliver similar value for the public sector (Chesbrough & Di Minin, 2014; Vanhaverbeke *et al.*, 2014; West & Bogers, 2017).

However, while there have been case studies cited by previous researchers (e.g., Chesbrough & Di Minin, 2014; Lee *et al.*, 2012), there has been no comparative research on how governments deploy citizensourcing as a way to achieve societal value. Also, while governments have been exhorted to follow the corporate model of crowdsourcing, we are aware of no efforts to compare the two models, despite obvious differences in context. Government agencies do not have the same success criteria as firms that seek to grow revenues, margins or after-tax profit; they also have a complex web of stakeholders and different norms for governance and day-to-day management. Also, while crowdsourcing research emphasizes virtual interaction, we know that many forms of government interaction (including citizensourcing) combine online and offline interactions. Thus, our study seeks to examine how crowdsourcing is used by local governments, and how that use differs from that of firms.

3. Methodology

To understand the practice of crowdsourcing beyond a corporate context, we chose to study citizensourcing by local governments. Such a sample has three inherent advantages. First, there is a larger potential sampling frame of similarly situated organizations within a given national institutional and cultural framework, even considering the possibility of multiple provincial governments or agencies within a national government. Second, such governments historically have a more stable group of stakeholders and have enjoyed a closer relationship with voters and

other residents, thus offering the strongest potential effect for non-pecuniary pro-social

motivations to engage in citizensourcing initiatives. Finally, the limited geographic scope of

local governments means there is greater opportunity for face-to-face offline interactions that

supplement or replace the online interactions commonly studied in two-sided crowdsourcing

markets (e.g., Jeppesen & Lakhani, 2010).

Our sample has three main characteristics that makes it different from previous research:

(1) our sample is not biased toward success stories and thus represents a more balanced sample

given it also includes 'bad-case' examples; (2) our organizations belong to the same national

context and use the same intermediary citizensourcing platform, minimizing variance owing to

these factors; and (3) in our research setting, the national government requires local governments

to consult with their communities. Despite this, our sample shows variance in the degree of

seeker engagement on the online platform and crowdsourcing success, making our dataset

relevant for studying the impact of such engagement.

Our sampling frame consists of Australian local governments that utilize an intermediary

we will call Nexus. Nexus specializes in helping such organizations engage online communities.

From their database of 213 government and public sector clients, we identified 94 local

governments that had conducted one or more citizensourcing efforts. We used theoretical

sampling to select 18 governments (Table 1), maximizing variation for local population, online

community size, total projects published, project site visits, and the year when they commenced

citizensourcing projects (Eisenhardt & Graebner, 2007; Guba & Lincoln, 1989). We also sought

variation in the level of online engagement behaviour as measured by the intermediary's algorithm, because that level is a predictor of the likelihood of positive societal impact.

Insert Table 1 about here

The sample of 18 was deemed sufficient once the themes and insights began to converge and reach theoretical saturation (Yin, 2003). The research design follows embedded multiple-case study replication logic, with each case confirming or disconfirming the inferences drawn from the others (Yin, 1994). We collected a variety of data over a nine month period: (1) 37 semi-structured interviews with representatives of the local government organizations and the intermediary; (2) online observation of past and ongoing citizensourcing projects; (3) archival data including policy documents and press releases; and (4) follow-up e-mails and informal conversations to track ongoing processes in real-time and to fill gaps in reports (Table 2).

Insert Table 2 about here

We conducted 18 interviews with local governments and 19 interviews with Nexus managers; the interviews lasted an average of 1 hour. All interviews were conducted as guided conversations rather than structured questions (Yin, 2003). We gathered information by: (1) requesting in an open-ended, non-directive manner to describe citizensourcing activities of organizations in general; and (2) later directly asking about critical success factors and processes in the organization's citizensourcing journey. The interviews were recorded and transcribed

resulting in over 200 pages of text. Other data (observation notes, archival data, e-mails) contributed to over 250 pages of text.

We started the data analysis once the first few interviews were conducted, looking for initial patterns of how local governments conduct citizensourcing. We then compared these against emergent patterns from subsequent interviews. Our analysis followed multiple-case analysis logic (Eisenhardt, 1989), synthesizing each organization's data into an individual case history. Based on this, we conducted within-case and cross-case analyses. We compared cases across different levels of online engagement behaviour to identify themes and patterns (Eisenhardt, 1989), from which we formed theoretical constructs. We considered theoretical constructs to be relevant when two or more organizations independently described the aspects.

Throughout our analysis, we triangulated our interview findings with other data sources (e.g., internal documents, websites), thereby modifying patterns as they developed; to ultimately identify patterns of regularity and recurrence in the data (Miles & Huberman, 1994). Alongside, we also iterated between data and theory to discern how the emergent themes could be grounded in extant literature (Eisenhardt, 1989). Finally, we informed Nexus of our results which the team concurred with. This data analysis process helped ensure the internal validity of our study (Yin, 1984).

4. Characteristics, motivations and strategies of government citizensourcing

We found that local government organizations that adopt a strategic approach to citizensourcing, characterised by a holistic governance framework, strong commitment of resources and capabilities, and structured systems and processes for citizensourcing, are more likely to conduct

projects that exhibit robust online engagement behaviour, thereby producing more successful

outcomes with a greater likelihood of delivering positive societal impact. Such a comprehensive

citizensourcing implementation strategy is supported by strong organizational motivation, led by

a top management team that is committed to transformative societal change, in turn directing

organizational goals to societal value creation and motivating project teams to strive for genuine,

robust engagement with the community. Figure 1 summarizes the key elements of this process

model of citizensourcing implementation.

Insert Figure 1 about here

4.1 Seeker engagement behaviour on the online intermediary platform

Seeker engagement behaviour refers to the activities that seekers' project team members use to

connect with community members on the online intermediary platform. We coded three levels of

engagement behaviour: High, Medium, and Low. We find that the level of engagement

behaviour is a predictor of citizensourcing project success: successful projects are driven by a

high degree of online engagement activities, which in turn is likely to produce better community

outcomes and hence a higher degree of societal impact. Analysing online activities, we identify

that differences in seeker engagement behaviour is reflected in: (1) the nature of citizensourcing

projects implemented; (2) the platform tools and functionalities used; and (3) the online

communication processes used (Table 3).

Insert Table 3 about here

Our results show that, in general, seekers exhibiting *low levels of online engagement behaviour* engage in ad-hoc, very limited activities on the intermediary platform. Their citizensourcing projects predominantly focus on operational areas around public service and infrastructure such as parks, recreation and library services, and there is lack of engagement on long-term strategy planning and policy-making. Projects mainly use surveys rather than discussion forums that would enable richer conversations amongst community members. The language used for project information and updates is too complex for members to understand, and site layouts are not user-friendly. There is no focus on closing the feedback loop to keep participants informed about how their contributions influence community outcomes.

Seekers with a *medium level of engagement behaviour* are relatively more active on the platform. Although these organizations use citizensourcing to engage with the community on long-term strategy planning in areas such as recreation strategy, the majority of projects continue to focus on tactical improvements to public infrastructure and services. There is limited use of discussion forums but project information is still poorly communicated, and participants receive limited feedback.

On the other hand, seekers with a *high level of engagement behaviour* exhibit robust online activities. These organizations engage on a wide range of projects ranging from public service and infrastructure, to strategic planning and policy initiatives, and use a variety of tools ranging from simple surveys to sophisticated discussion forums to enable co-ideation and co-design through deep engagement with the community. The language used to disseminate project information and updates is clear and easy to understand, and site layouts are visually attractive

and user-friendly. The feedback loop is closed consistently to let participants know how they

have been able to contribute to community outcomes.

4.2 Seeker motivation to engage in citizensourcing

While the Australian government requires all local governments to consult with the community,

the degree of motivation (like engagement) varied between these organizations. We find that

seeker motivations broadly fit into three categories: (1) Perfunctory consultation; (2) Symbolic

engagement; or (3) Transformative change. This motivation can be explained by a combination

of three factors: commitment of the top management team to citizensourcing — which drives

organizational goals for citizensourcing — and also the attitude of project teams towards

citizensourcing (Table 4).

Insert Table 4 about here

Local governments with low levels of online engagement behaviour tend to use

perfunctory consultation, with the top management team of such organizations tending to view

citizensourcing as merely a more efficient way to meet the regulatory requirement for

community consultation. These organizations mainly engage in citizensourcing to comply with

consultation requirements, and implement citizensourcing projects merely as a formality.

Organizations with a medium level of online engagement behaviour use *symbolic*

engagement to consult their communities. The top management team of these organizations view

citizensourcing as a way to signal to community members that they have a voice in the decision-

making process, and develop a sense of belonging to the community. Although teams design projects to consult the community, the approach is not proactive.

Organizations showing high levels of online engagement behaviour view citizensourcing as a means of creating *transformative change* in the community. Here, the top management team perceive citizensourcing as a robust way to co-create value with the community, with overarching goal of achieving genuine societal impact by making the community a better place. Project teams in turn strive for genuine community engagement in order to co-innovate public infrastructure and services, and involve citizens in their strategy planning and policy-making process.

4.3 Seeker strategies to implementing citizensourcing

The varying motivations for seeker organizations also drive differences in their implementation strategies, which in turn influences their online engagement behaviour and ultimate project success. We found three different seeker strategies: (1) Comprehensive, (2) Transactional, and (3) Compliance-driven. These strategies differ in three aspects: governance framework, resource commitment, and systems and processes for citizensourcing (Table 5).

Insert Table 5 about here

Governments that exhibit low levels of online engagement behaviour adopt a *compliance-driven* strategy. Projects are implemented on an ad-hoc basis, as organizations lack a clear framework to govern citizensourcing. They neither make long-term resource commitments to capability development nor have processes to integrate online and face-to-face interactions.

Seekers with medium level of engagement behaviour use a *transactional* strategy to citizensourcing. While project governance goes beyond minimum compliance requirements, these organizations make limited investment in planning and implementing citizensourcing projects, and do not integrate online and face-to-face interactions.

Finally, we find that seekers exhibiting a high level of online engagement behaviour adopt a *comprehensive* strategy for governing projects. Project teams are staffed by qualified professionals and have dedicated support for planning and implementing citizensourcing. Organizations integrate online and face-to-face modes of engagement and utilize structured systems and processes.

Together, this suggests that projects with robust online engagement behaviour are more likely to be implemented by seeker organizations that adopt a strategic approach to citizensourcing, which in turn is underpinned by the overarching motivation to achieve transformative societal change.

5. Discussion

This study identifies the drivers of success for a sample of local governments that utilize citizensourcing to improve community outcomes. Here we suggest implications for citizensourcing by government agencies, and more generally for crowdsourcing and OI.

5.1 Implications for government citizensourcing and open innovation

Our data revealed a process followed by local governments while utilizing citizensourcing, and suggests factors that make such efforts more or less successful. These efforts start with the degree of commitment of the local government's top management team, which affects the

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overarching goal of the organization as well as the attitude of project teams to citizensourcing. Together, these factors shape the nature of seeker motivation, which in turn influences their chosen strategy for implementing citizensourcing initiatives. The most motivated organizations adopt a coherent and sustained overarching strategy developing a robust governance framework, and committing significant managerial attention and other resources toward adequate staffing, project funding, systems and processes for citizensourcing. This relates to the degree of professionalism within local governments, which affects citizensourcing outcomes and the likelihood of positive societal impact.

Our sample shows a range of variation in the motivation, and thus the strategies and investments made by governments in citizensourcing. In medium-performing cases, organizations see a benefit in publicly soliciting outside input — providing voice to external constituents — without committing to using that input to make significant improvements in their operations or societal welfare. Our data show that the decision to initiate crowdsourcing is necessary but far from sufficient for government agencies to benefit from the "wisdom of crowds" as advocated by prior research (e.g., Brabham, 2009; Surowiecki, 2004). Instead, the choices of how crowdsourcing is implemented impacts the benefits that can be realized from such efforts.

More generally, our data points to the importance of professionalism for successful government OI efforts (e.g., Feller *et al.*, 2011). Calls by relevant stakeholders for greater efficiency and accountability in the non-profit sector have led to the need for greater professionalism in non-profit organizations (Hwang & Powell, 2009; Panel on the Nonprofit

Sector, 2005). To do so, local governments need to evolve from informal and non-strategic

activities "to highly formalized endeavours by enterprising individuals" (Hwang & Powell, 2009,

p. 270). This means the integration of formalized roles and rules to create a complete

organizational definition and identity (Brunsson & Sahlin-Andersson, 2000). Our data shows that

in local governments that have clear strategies, governance frameworks and distinct role

descriptions for crowdsourcing, project members are more likely to be successful in their OI

efforts.

5.2 How citizensourcing differs from corporate crowdsourcing

Here we contrast the crowdsourcing strategies and outcomes in our sample with those used by

for-profit firms (Table 6). While our data do not allow us to directly observe the latter, we

believe the large body of published research (e.g., Afuah & Tucci, 2012; Boudreau *et al.*, 2011;

Boudreau & Lakhani, 2013; Jeppesen & Lakhani, 2010; Leimeister *et al.*, 2009; Terwiesch &

Xu, 2008) allow us to offer suggestive findings.

Insert Table 6 about here

Both forms use the seeker and solver model described by Howe (2006). In this study, the

seekers are local government agencies that solicit members of the public to act as solvers; these

agencies use citizensourcing to improve community welfare and provide societal impact. By

comparison, firms seek to improve their financial performance, and recruit individual

contributors without prior ties or stakes in the firm's success. The types of problems and

processes also differ between the two groups. The governments seek knowledge of their

customers (i.e., constituents) and market demands to incorporate in their service delivery and strategy planning process, and seek out local contributors — usually from their existing geographic community — motivated by a desire to improve society. The local pool of contributors enables a hybrid of online and face-to-face interactions, while citizensourcing projects support a wide range of service, planning and policy decision by the government agencies. In contrast, firms tend to use crowdsourcing to find a solution to a specific technical problem through contests and tournaments, and motivate their virtual contributors by using extrinsic incentives (Jeppesen & Lakhani, 2010).

Because of the local ties and shared interest in improving their municipality, the solvers in citizensourcing efforts often collaborate with other solvers to find an improved solution. Rather than a crowd as defined by West and Sims (2016), the solvers in our sample exhibit attributes of a community because of shared purpose, identity and peer-to-peer interactions.

In our sampling frame, there was a wide range of motivation and strategies among seekers, leading to varying levels of engagement: The most engaged seek to achieve transformational change by building a comprehensive framework and dedicating significant resources and systems to leverage the results of citizensourcing. At the other extreme, some seekers made only a perfunctory commitment to citizensourcing with limited resources and systems to support their efforts. In between, other seekers saw a symbolic value of demonstrating their interest in soliciting constituent input, but took a less strategic and more transactional approach than the most engaged ones.

We are unaware of similar variation in engagement, motivation and strategies in studies of corporate crowdsourcing. Indeed, research on such crowdsourcing tended to focus on success cases. If anything, explanations of the success of crowdsourcing have tended to focus on project choices — such as incentives (e.g., Boudreau *et al.*, 2011; Leimeister *et al.*, 2009) — rather than due to internal organizational factors and motivations.

At the same time, our findings point to differences within government citizensourcing. Many previously studied examples of government citizensourcing resemble —and are even modelled explicitly on — corporate crowdsourcing efforts (e.g., Bommert, 2010; Hilgers & Piller, 2011; Lee *et al.*, 2012). In fact, prior research has often emphasized how government crowdsourcing can imitate corporate practices (Hilgers & Ihl, 2010; Hilgers & Piller, 2011). Some of this research describes how to run corporate-style competitions; for example, Brabham (2009) suggests government agencies should use citizensourcing to select a small number of winning entries that are either adopted or integrated into the agency's existing plans; Murray and her colleagues (2012) talk about how NASA, a charitable foundation and an insurance company all used the same non-profit intermediary to manage grand innovation prize competitions to solve major societal challenges. Even citizensourcing efforts that emphasize collaborative processes may resemble anonymous crowds more than the shared purpose of a community — as when AmericaSpeaks ran temporary online town meetings with 4,000 participants (Lukensmeyer & Torres, 2008).

However, unlike the open call of a grand innovation prize (Murray *et al.*, 2012) or a two-sided market of a standing pool of potential solvers (Jeppesen & Lakhani, 2010), the solvers of

our sample demonstrate the shared purpose and identity characteristic of an online community rather than a crowd (West & Sims, 2016). In this regard, the solvers in our sample less resemble the contestants in online crowdsourcing tournaments and more the online brand communities developed by large consumer products companies such as Adidas or BMW for engaging the ideas of their loyal customers (Piller & Walcher, 2006; Schau *et al.*, 2009).

Together, this suggests combining two existing dimensions of crowdsourcing approaches. One dimension is the distinction between the goals of profit-maximizing vs. societal improvement (Chesbrough & Di Minin, 2014; Hilgers & Ihl, 2010; Lukensmeyer & Torres, 2008). The other dimension is the crowd vs. community: a competitive, transactional process focused on a specific end goal is contrasted against a cooperative, relational process in which contributors are united by a common purpose or identity (Boudreau & Lakhani, 2009; West & Sims, 2016). These two dimensions define four modes of crowdsourcing; examples of each of these modes are shown in Figure 2. Because these modes differ in terms of seeker motive and solver interaction, we would also expect to see similarities within modes — and differences between modes —in terms of the strategies, processes and success criteria.

Insert Figure 2 about here

5.3 Broader implications for open innovation

The crowdsourcing activities identified in our sample suggest broader implications for OI by both governmental and for-profit organizations. Unlike large organizations, the organizations in our sample are small organizations, unable to integrate or replace outside consultants. They have

limited in-house expertise — in some cases a communications manager who writes press releases and a website/social media technician to put the news online. In this regard, our findings may be applicable to small and medium enterprises (SMEs) that share similar resource and in-house expertise constraints; while previous research (e.g., Lee *et al.*, 2010) has examined the technical factors that cause small firms to seek out an intermediary, it has not looked at the organizational issues.

Second, our study points to the importance of internal organizational factors in influencing the results of crowdsourcing. Our sample is unlike previous studies of firms that make a strong financial and organizational commitment to crowdsourcing. Instead, the local governments studied had a heterogeneous degree of motivations for crowdsourcing success — and thus varied dramatically in their strategies for organizing, governing and managing these crowdsourcing efforts. So while some organizations ran projects to obtain the most innovative possible outcomes, others used the effort as a way to increase the loyalty of their constituents (i.e., customers) by giving them voice — as recommended by Hirschman (1970). Still others commissioned crowdsourcing with little intent of success as a way to satisfy a regulatory mandate — as might happen for firms in regulated industries.

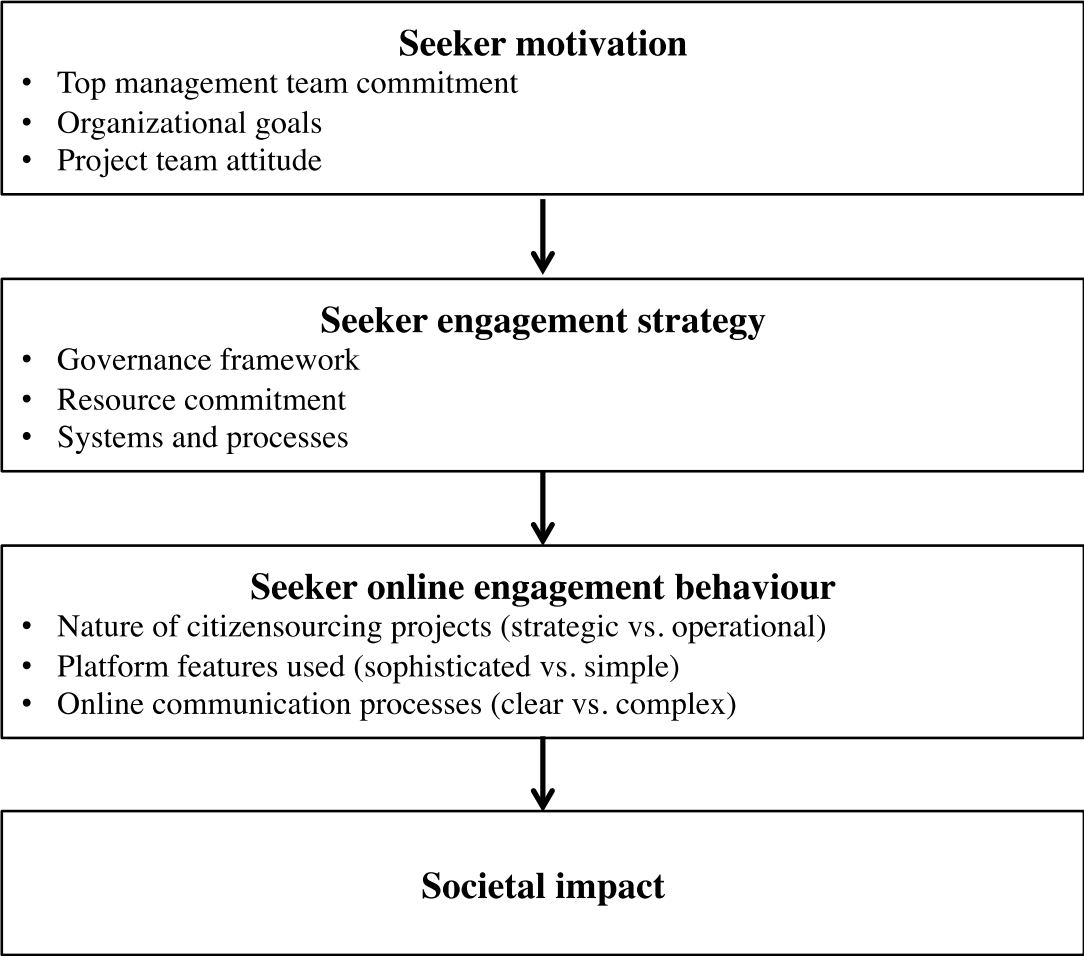*5.4 Limitations and Future Research*

This study is not without its limitations. The organizations were purposively sampled from a pool of 94 municipal organizations that utilized one intermediary in one country, and it was not possible to control for all the confounding differences between these locations. The campaigns of these agencies were new enough that only indirect success measures were available: in

particular, we do not have data on how the differences in motivation and strategies impact long-term success. The attitudes and actions of local governments may not generalize to larger provincial or national governments that are less resource limited.

While this study examined variation among local municipalities, future research should examine variation in both the level of government and the functional/disciplinary orientation. For example, one might expect to see that the importance and level of face-to-face interaction for provincial governments would be intermediate between municipalities and national governments. Similarly, one might expect different mechanisms, motivations, incentives and degrees of engagement depending on the sponsoring agency and goals — whether citizen input for fixing potholes or improving a local senior centre will be different for space missions or fighting terrorism.

More generally, research could examine whether these findings regarding government crowdsourcing are applicable to that of firms. Research is scarce on crowdsourcing by small firms, but this study suggests that the practice will be qualitatively different for firms without strong in-house innovation and IT capabilities; similarly, previously studies have emphasized firms that are highly motivated for the success of crowdsourcing contests, but this study suggests that variation in motivation by firms may impact their crowdsourcing strategies and outcomes.

Figure 1: Model of citizensourcing implementation

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┌─────────────────────────────────────────────────────────┐
│                   Seeker motivation                      │
│  • Top management team commitment                        │
│  • Organizational goals                                  │
│  • Project team attitude                                 │
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┌─────────────────────────────────────────────────────────┐
│               Seeker engagement strategy                 │
│  • Governance framework                                  │
│  • Resource commitment                                   │
│  • Systems and processes                                 │
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│            Seeker online engagement behaviour            │
│  • Nature of citizensourcing projects (strategic vs. operational) │
│  • Platform features used (sophisticated vs. simple)     │
│  • Online communication processes (clear vs. complex)    │
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│                   Societal impact                        │
│                                                          │
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Figure 2: Examples of four modes of crowdsourcing

Solver interaction

	Crowd	Community
Firm performance	Innovation contests	Brand communities
Societal impact	Grand innovation prize	Local citizensourcing

Seeker motive

Table 1: Sample of local government organizations

Organization	Interview Subject	First citizensourcing project	Online community size	Total projects implemented	Local population	Level of engagement behaviour †
LG 1	Community Engagement Coordinator	Sep 2010	13,583	120	1,281,449	High
LG 2	Stakeholder Engagement Coordinator	Mar 2013	2,557	45	101,321	High
LG 3	Communications & Marketing Coordinator	Feb 2010	2,479	228	140,741	High
LG 4	Stakeholder Engagement Coordinator	Jul 2015	433	42	46,244	High
LG 5	Community and Corporate Planner	Mar 2016	653	45	13,807	High
LG 6	Corporate Strategic Planner	Jul 2010	3,214	200	76,354	High
LG 7	Community Engagement Coordinator	Feb 2016	384	42	22,918	High
LG 8	Senior Community Engagement Officer	Jul 2011	4,002	541	22,393	High
LG 9	Media & Communication Coordinator	Apr 2015	461	63	30,321	Medium
LG 10	Community Engagement Officer	Mar 2014	2,244	24	367,700	Medium
LG 11	Program Leader Corporate Communications & Marketing	Apr 2010	3,739	165	79,812	Medium
LG 12	Community Engagement Officer	Apr 2011	4,121	214	205,339	Medium
LG 13	Manager Community Services & Development	Jun 2012	384	58	21,256	Medium
LG 14	Economic & Tourism Development Leader	Jun 2014	341	28	4,700	Medium
LG 15	Strategic Planning Coordinator	Jul 2013	233	38	150,881	Low
LG 16	Community Engagement Coordinator	Dec 2014	1,487	88	226,220	Low
LG 17	Media & Communication Officer	Sep 2011	841	57	25,533	Low
LG 18	Media & Communication Coordinator	Jul 2012	287	47	31,291	Low

† As defined by intermediary (see text)

Table 2: Data inventory

Data sources	
Interviews	• 37 total interviews • 18 with local government organizations • 19 with Nexus (intermediary) managers
Observational data	• Past and ongoing citizensourcing projects of local government organizations • Online engagement activities on citizensourcing platform
Archival data	• Local governments' Community Engagement policy and framework documents • Local government organization websites • Media and press releases on organizations' community engagement initiatives • Nexus website and blog information on clients' citizensourcing projects (for organizations in our sample) • Best practice client videos/case study documents from Nexus (for organizations in our sample)
Other data	• Follow-up emails • Informal conversations

Table 3: Citizensourcing activities based on level of seeker engagement behaviour

Level of seeker engagement behaviour	*High*	*Medium*	*Low*
Nature of citizensourcing projects	Wide range of projects on variety of areas including public services and infrastructure, strategic planning and policy-making.	Limited use of projects for long-term strategy planning or policy-making. More focus on tactical aspects of operational areas such as public services and infrastructure.	Focus on day-to-day operational areas around public services and infrastructure; lack of consultation on long-term strategy planning and policy-making issues.
Platform tools & functionalities used	Variety of tools ranging from simple surveys to sophisticated discussion forums to cater for a rich variety of ideation and feedback-sharing.	Surveys as the primary online engagement tool; very limited use of discussion forums and brainstormers.	Almost exclusive use of simple tools such as surveys.
Online communication processes used	Clear and easy-to-understand language; attractive and user-friendly site design and layout; regular updates on progress; feedback loop closed to let participants know how they have contributed to community outcomes.	Unclear and often complicated language; site layout not appealing and user-friendly; infrequent progress updates; lack of consistency in closing the feedback loop.	Complex jargon and language; sparse project details; non user-friendly site design and layout; lack of progress updates; no focus on closing the feedback loop.
Sample Projects	• Inputs into the development of City Planning policies • Inputs into strategy planning for a variety of areas such as health & wellbeing, transport, parking demand management, urban design, waste minimization & management, land use & infrastructure, local environment, recreation and economic development • Insights to inform the development of the Disability Inclusion Action Plan • Insights into developing new Fitness & Wellbeing programs, local nature-based activities and Positive Ageing programs for seniors in the community • Ideas for co-designing beach pavilion, public art trail, all abilities play space, city bikeways and green spaces • Inputs into masterplan for redevelopment of local area concourse, cultural precinct, streetscape, hospital precinct and train station precinct • Feedback on homelessness in the community to inform future development of homeless and crisis accommodation	• Inputs into priorities for strategy planning for play area, open space and recreation strategy • Inputs into improvements to local hot salt water pools, local library, development of local parks • Ideas for improvements in walkways, cycling paths, children's playground and city's signage • Inputs into masterplan for development of local reserve, town centre and waterfront precinct • Feedback on attitudes and practices around household organic waste management and home food growing to inform future community initiatives	• Feedback for set-up of a local community volunteer organization forum • Feedback for improvement of library services • Comments on already-developed waterfront precinct concept plan • Information to community on already-finalized Local Environmental Plan, Foreshore Management and Parks & Recreation Policy • Information on natural disaster management tools made available to community residents

Table 4: Comparing seeker motivations

Level of online engagement behaviour	*High*	*Medium*	*Low*
Seeker motivation	**Transformative change**	**Symbolic engagement**	**Perfunctory consultation**
Commitment of top management team	*Citizensourcing embraced as a robust way to co-create value with the community* "Our [council's] senior executives are open to using it, they are not fearful of engaging with the community, but some [senior executives] are very sceptical of online community engagement" (Corporate Strategic Planner, LG6).	*Citizensourcing used as a symbolic instrument for community consultation* "The way engagement is understood and conducted differs between councils – some senior executives just view it as consultation and not co-creation" (Learning & Practice Manager, Nexus)	*Citizensourcing viewed as an efficiency driver for community consultation* "[Some council leaders] view engagement with the community as useful for efficient decision-making, rather than a way for collaborative innovation. The original motivation for these councils is to consult with the community as a formality." (Operations Manager, Nexus)
Organizational goal	*Community transformation & societal value creation* "Getting community input into decision-making and co-creation is the main motivation for our organization" (Senior Community Engagement Officer, LG8)	*Citizen empowerment: giving a voice to community members* "Our [organizational] driver for community engagement is to involve community in the decision-making process. We are responding to feedback from the community asking for more say and voice in the decision-making process" (Program Leader Corporate Communications & Marketing, LG11)	*Address regulatory compliance for community consultation* "The [organizational] focus tends to be on *involving* the community and not as much on *empowering* the community" [emphasis added] (Media & Communication Officer, LG17).
Attitude of project team	*Strive for genuine engagement to improve infrastructure, service, policy & planning* "We engage with the community because it is best practice to involve community in matters that impact them and taking community inputs into consideration in making decisions" (Stakeholder Engagement Coordinator, LG4)	*Consult to involve community but not in a fully proactive manner* "Once clients realize the power or opportunity of the platform [their engagement] goes from just being efficient – just bringing numbers up to drive volume – to being a forum for having a more in-depth conversation with the community, and that's really when practice starts to change." (Client Engagement Manager, Nexus)	*Meeting formal regulatory requirements for community consultation* "Our main driver to use online consultation is because there is a legislative requirement for community engagement as part of the Planning & Environment Act." (Media & Community Coordinator, LG18)

Table 5: Comparing seeker strategies

Level of online engagement behaviour	*High*	*Medium*	*Low*
Seeker strategy	**Comprehensive**	**Transactional**	**Compliance-driven**
Governance framework for citizensourcing	*Holistic framework that goes well beyond statutory requirements* "We have the Integrated Planning & Reporting framework.....we often go beyond this minimum statutory requirement viewing engagement as best practice, to get ideas for facilities improvement and to involve the community in decision-making process" (Corporate Strategic Planner, LG6)	*Framework goes beyond minimum compliance requirements but is not robust* "Our policy for consultation is very old-style - it is more a communication framework rather than an engagement framework. We are still working on developing a collaborative, holistic framework" (Economic & Tourism Development Leader, LG14)	*No clear engagement framework, and decisions are made on an ad-hoc basis* "There is no agreed strategic framework for community engagement drawn by senior members leading to inconsistency in project approach - some officers just do what the minimum policy requirement is" (Community Engagement Co-ordinator, LG 16)
Resource commitment for citizensourcing	*Competent professionals and dedicated resources for planning & implementation* "We have 4 staff as part of the Community Engagement team responsible for planning, developing, delivering and evaluating community engagement, supporting and training project managers. We design and launch projects, monitor and send reports along with project team who provide the technical content. We have engagement champions in various program areas." (Senior Community Engagement Officer, LG8)	*Limited investment in competent professionals and dedicated resources for planning & implementation.* "Most people are not interested in getting trained on it as they don't have the time and don't see it as a priority." (LG14) "Staff has a lot of demands on their time and resources, and other teething priorities often distract from community engagement" (Manager Community Services & Development, LG13).	*Lack of competent professionals and dedicated resources for planning & implementation.* "There is no organizational buy-in for the platform.... the department is paying from their operational budget for it – so it takes away from other projects we could use the funds for. We have to go through a procurement process this year for a sign-off on using an external supplier for the software as a lot of money has been used for it" (Strategic Planning Coordinator, LG15)
Systems and processes for citizensourcing	*Integrated modes and structured processes for delivering and monitoring projects* "We have an evaluation sheet based on the Engagement Strategy with qualitative and quantitative parameters where project managers self-score themselves and also provide comments on how they went.. [and] also fortnightly sessions with staff to train and discuss engagement ideas. We develop case studies and send out to council and the public" (Senior Community Engagement Officer, LG8)	*Lack of integrated modes and structured processes for delivering and monitoring projects* "We use a Stakeholder Engagement template for every project to identify stakeholders to be involved and analyse what is required, based on which the mode of community engagement is decided. However, we decide on which tools to be used in projects based on the capacity of the engagement staff and time constraints" (Community Engagement Officer, LG10)	*Absence of integrated modes and structured processes for delivering and monitoring projects* "Staff tends to use the platform in a minimalist way due to lack of resources to dedicate to online engagement." (Strategic Planning Coordinator, LG15) "It is run by the Communications team who sees engagement as a newsletter. That's really an efficiency driver – are we broadcasting? - not engagement." (Client Engagement Manager, Nexus)

Table 6: Comparing local government and corporate crowdsourcing

	Local government citizensourcing	Corporate crowdsourcing†
Seekers/Solvers	Local government agencies/local citizens	Corporate firms/individual contributors
Success measure	Community welfare and societal impact	Firm value capture and profit
Knowledge sought	Customer, market-based knowledge for public service, planning and policies	Technical solutions to internal R&D problems
Nature of projects	Co-ideation and co-design of public infrastructure, community service development and improvements, consultation on priorities for strategy planning and policy-making	Idea competitions, innovation contests, tournament-based crowdsourcing, grand challenges often revolving around topics of technical or skill-based nature
Key attributes of solvers	Pro-social local contributors with shared purpose and collaborative interactions	Extrinsic and individualistic motivation, emphasizing competition between solvers
Type of network structure	Community	Crowd
Modes of engagement with and amongst solvers	Combination of face-to-face and online interaction	Primarily online
Seeker motivation	Varying levels of top management team commitment, goals and project team efforts to achieve objectives ranging between transformational change, symbolic engagement and perfunctory compliance	Develop innovative products and services to increase firm revenues and profits
Seeker strategy	Varying degrees of strategic resource commitment, frameworks and processes, ranging from highly comprehensive to transactional and compliance-driven	Adequate organizational and financial commitment to support and benefit from crowdsourcing projects

† Based on prior research

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