

Selective Crowdsourcing for Open Process Innovation in the Public Sector – Are Expert Citizens Really Willing to Participate?

Claudius E. Seidel
Hertie School of Governance
Friedrichstraße 180
10117 Berlin
seidel@hertie-
school.org

Basanta E.P. Thapa
Hertie School of Governance
Friedrichstraße 180
10117 Berlin
thapa@hertie-
school.org

Ralf Plattfaut
WWU Münster
Leonardo-Campus 3
48149 Münster
ralf.plattfaut@ercis.uni-
muenster.de

Björn Niehaves
Hertie School of Governance
Friedrichstraße 180
10117 Berlin
niehaves@hertie-
school.org

ABSTRACT

In light of current challenges that modern societies are facing (e.g. demographic change, financial budgetary constraints, and demand for individualized public services), public administrations need to find innovative ways to deliver public services more efficiently. One possible solution to the dilemma of shrinking resources and increasing demands is open innovation. Various papers have already established the idea of crowdsourcing as a means of open innovation in the public sector. In order to enrich the theoretical and practical knowledge in this field of collaborative innovation processes, this research focuses on the willingness of citizens to participate in crowdsourcing for innovation. More specifically, we emphasize the role of expert citizens in selective crowdsourcing for complex tasks in the public sector with the concrete example of process innovations. We examine different levels of willingness to participate in crowdsourcing by means of a quantitative analysis of a questionnaire survey with $n=128$ German citizens. Based on the findings from our analysis, we are able to show that citizens are indeed motivated to participate in selective crowdsourcing to generate solutions to complex problems in the public sector. Although mobilizing adequate experts for complex tasks may seem challenging, we find that expert citizens have a higher willingness to collaborate on complex as well as on simple tasks than non-experts. In addition, financial incentives appear to remain a relevant instrument in the design of crowdsourcing projects. Ultimately, the role of age as an influence to participate in crowdsourcing will be discussed.

General Terms

Management, Human Factors.

Keywords

process innovation, public administration, selective crowdsourcing, citizensourcing, motivation, incentivization

1. INTRODUCTION

Faced with enormous “social, economic and environmental

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challenges” and citizens’ growing expectations, innovation is a more pressing issue for public administrations than ever [1, 2, 5, 13, 16, 28]. However, the public administration is generally less conducive to innovation than the private sector due to factors like organizational culture and socio-political limitations [4]. Opening up public sector innovation processes for citizen participation may offer a way to overcome some of these inhibitions to innovation.

Open and collaborative innovation methods have the advantage of generating new and innovative approaches to increasing demands and ever more complex problems even under budgetary constraints, personnel resource scarcity and within rather inert organizational structures [10, 25]. Additionally, involving the public in the crowdsourcing of innovation processes can be seen as a form of citizen participation, potentially increasing the perceived legitimacy of public administration [20].

However, existing research on crowdsourcing of public sector innovation processes (“citizensourcing” [12]) has so far largely omitted the perspective of citizens, arguably the most important actor. In this research paper, we first review the existing body of literature on open innovation and crowdsourcing in the public sector, pointing towards selective crowdsourcing as an adequate format for complex tasks like administrative process innovations. In an empirical second part, we explore the willingness of expert citizens to participate in crowdsourcing for public sector process innovation on the basis of a survey from a mid-sized German city. Further, we will briefly touch the question whether financial incentives are likely to increase the willingness to participate.

Based on our findings, this paper presents basic recommendations for public administrations that seek to crowdsource complex innovation tasks. Additionally, we identify areas of further research in the field of citizensourcing.

2. RELATED WORK AND THEORETICAL FRAMEWORK

The increasing interest in opening up public sector innovation to citizen participation reflects a paradigm shift in public administration. Collm & Schedler point out that, so far, public sector innovation has typically taken place in closed-off processes conducted internally by public administration, possibly with the support of consultancies [10]. In line with the paradigm of New Public Management, citizens were seen as customers that had to be satisfied but not to be involved in the conception of public services and processes. Involving citizens more directly in public sector processes, e.g. in citizensourcing, reflects the novel idea of citizens and public administration as partners, which is put

forward by rising paradigms like New Public Governance and Open Government [19, 23].

However, an unanswered question in this paradigm shift is to what extent citizens are willing to shed their comfortable role as customers of public administration and become more actively involved in public administration.

2.1 Open Innovation in Public Administration

Opening up innovation processes to external stakeholders is an idea that was first conceptualized as “Open Innovation” by Henry Chesbrough in the early 2000s. His “networking imperative” states that companies – in times of global competition, decreasing possibilities for knowledge monopolies and shorter innovation cycles – should try to tap creativity and expertise outside their organization [8, 14, 25, 33, 37].

Harnessing Open Innovation for public administration, specific characteristics of the public sector have to be considered. On the one hand, incentives to innovate are fundamentally different in the public sector: often radical innovations are only triggered by public opinion. Without the political will to change, institutions are less likely to start innovation processes by themselves. On the other hand, public administrations are hierarchically organized, thus the “innovation cycle is dominated by senior management inside the organization and there is no or little integration of other actors” [4, p. 21]. The public sector generally displays a risk-averse culture due to the threat of public blame [1]. Finally, decision-makers have to handle shrinking (human) resources and rising demand for individualized services – a dilemma that calls for Open Innovation approaches [25]. Thus, while most public administrations may naturally be hesitant about disclosing their internal processes, for an increasing number, the “demand for innovation” outweighs the possible ambiguities of doing so [33].

In this paper, we focus on business process innovation in the public sector. Business processes are understood here as as “manners of supply” e.g. the procedure of applying and issuing a new identity card. All citizens are in some way involved in public administration processes, but beyond their perspective as “customers” can also contribute beneficially to the innovation process with their individual skills and creativity [24, 26].

2.2 Crowdsourcing for Innovation

Crowdsourcing typically means the common effort of a non-hierarchical group of interested people to solve a given problem with the explicit intention to access their diversified knowledge [17]. Hence, organizations’ internal functions are opened up to external actors based on the assumption that “crowds of people are remarkably intelligent and often smarter than the smartest people in them” [35].

The collaborative aspect of crowdsourcing represents an important facet of innovation processes in general [8, 9, 27]. Originally a concept from the private sector, it is also becoming increasingly clear to decision makers in the public sector that “complementary knowledge is needed in breeding innovative ideas” [3]. More precisely, network-based collaborative innovation entails the potential “to enhance the range and quality of innovation outcomes or solutions” [22, p. 37].

Crowdsourcing is categorized along dimensions like reward mechanisms, target crowd and task structure. For the crowdsourcing of public sector innovation processes, we highlight

the distinction between “integrative” and “selective” crowdsourcing [31].

Integrative crowdsourcing aims to have as many people as possible perform simple, routine tasks whose output accumulates to solve the actual problem addressed by the crowdsourcing effort [15]. For this type of crowdsourcing, usually no specific skills are needed.

In contrast, selective crowdsourcing typically poses complex tasks to generate rivaling solutions from which only one is chosen. Usually, this type of crowdsourcing does not aim to indiscriminately involve as many people as possible, but rather selected experts with adequate skills. Further, the process is often time intensive so the number of participants may be deliberately capped to keep the process manageable [31].

Table 1: Integrative vs. Selective Crowdsourcing

	Integrative Crowdsourcing	Selective Crowdsourcing
Target crowd	Indiscriminate	Discriminate
Complexity of tasks	Simple	Complex
Output mechanism	Accumulation of results	Selection of best solution
Time effort	Low	High

While integrative citizensourcing can be helpful in identifying problems and demands, especially business process innovation is a complex, coherent and time intensive process which calls for selective crowdsourcing. As public administrations often lack the resources and expertise to implement complex innovation processes, involving a selected group of expert citizens should not be seen as a form of token citizen participation but as an efficient way of problem solving.

2.3 Motivation

One major concern for crowdsourcing initiatives as well as modes of citizen participation is motivation. Citizens only actively participate if they are for some reason motivated to do so. This issue is even more relevant for selective crowdsourcing, where one tries to motivate a very specific group of citizens.

Generally, motivation can be categorized in intrinsic motivation, i.e. doing something “because it is inherently interesting or enjoyable”, and extrinsic motivation, i.e. “doing something because it leads to a separable outcome” [30, p. 55]. Research on private sector crowdsourcing has already shown that participants’ motivations are quite diverse in different settings [38, p. 29]. For our focus on selective crowdsourcing in public sector innovation processes, two findings in the literature have to be highlighted:

1. While it is critical for selective crowdsourcing to suit the crowdsourcing design to the target groups motivations, selective designs actually offer specific incentives: Lakhani et al. show that the challenge of sophisticated tasks is a strong intrinsic motivation in itself for the relevant experts [18]. Further, motivations like skill development, career advancement and reputation building are more relevant in selective crowdsourcing designs.
2. Financial incentives are not necessary for all crowdsourcing designs. Some work solely based on intrinsic motivation, others offer non-monetary rewards for participants. However,

if financial incentives are offered, they are usually the most prominent motivation for participants [6].

It can be assumed that crowdsourcing for the public sector may hold additional motivations in comparison to private sector crowdsourcing. Contributing to the public good is a strong motive known from civic participation [34, p. 392]. Brabham finds that “love of the community” is a widespread motivation even in some private sector crowdsourcing designs [6].

2.4 Research Gap

Open innovation and crowdsourcing in the public sector has been a subject of discussion for several years. However, to date there has not been a concise look on the central actors in public innovation crowdsourcing, namely the citizens [10, 21]. Citizensourcing is typically discussed in the form of integrative crowdsourcing with the goal of increasing legitimacy. Further, the literature on crowdsourcing motivation suggests that it may actually be easier to attract expert citizens to complex tasks and even more so with financial incentives.

Thus, an empirical examination of citizens’ willingness to work as co-innovators in selective crowdsourcing for public administrations is an important stepping stone for further assessment of the potential of citizensourcing with or without financial incentivization.

2.5 Research Objective

The overarching goal of this paper is to examine the willingness of citizens to participate in public sector innovation crowdsourcing. More specifically, we scrutinize the citizen side of selective crowdsourcing for public sector innovation to assess its basic potential for overcoming public sector restraints to innovation.

Thus, our findings should not only identify areas for future research but also provide basic recommendation for citizensourcing pioneers.

3. RESEARCH DESIGN

3.1 Research Question & Hypotheses

Based on our research objective and the literature review, our underlying research question reads:

RQ: *What are citizens’ patterns of motivation to collaborate in complex task selective crowdsourcing?*

In our survey, we use business process innovation in public administration as an instance of innovation that can be complemented by simple and complex crowdsourcing tasks.

The literature on motivation in crowdsourcing suggests that experts are more willing to participate in crowdsourcing processes suitable to their expertise [6], i.e. simple tasks in their specific realm of expert knowledge and especially more intellectually challenging complex tasks. Possible explanations are the satisfaction of applying their skills, building a reputation in the specialist community and career advancement. Thus, we propose:

H1: *Expert citizens are more willing to collaborate in both simple and complex citizensourcing tasks than non-expert citizens.*

Taking this argument further, we hypothesize that expert citizens are also more willing to take on complex crowdsourcing tasks. This hypothesis is also based on the idea that collaborators in complex tasks are strongly motivated by the challenge of the task itself [18].

H2: *Expert citizens are more willing to collaborate in complex citizensourcing tasks than non-expert citizens.*

Brabham finds that financial incentives are a major motivation for crowdsourcing participants in general [6]. However, as expert citizens are driven by a number of additional intrinsic and extrinsic motivations, we suspect that these may crowd out the effect of monetary incentives. Therefore, we suggest:

H3: *Financial incentives are less effective with expert citizens than with non-expert citizens.*

3.2 Variables

3.2.1 Dependent Variables

According to our hypotheses, we have two sets of dependent variables: Constructs measuring the willingness of citizens to collaborate in simple and more complex phases of public sector process innovation and items measuring the general willingness with and without monetary incentives.

3.2.1.1 Willingness for Simple and Complex Tasks

In line with the distinction of integrative and selective crowdsourcing practices, we aggregate two constructs which measure the citizen’s willingness to collaborate in simple tasks (which would be suitable for integrative crowdsourcing) and complex tasks (which work best for selective crowdsourcing).

Table 2: Constructs of willingness for simple/complex tasks

Construct	Definition	Items
Willingness for simple tasks (Schenk & Guittard 2011)	Willingness to give feedback, provide data	WILL_SIMPLE1: “I would like to point out problems in public sector processes.”
		WILL_SIMPLE2: “I would use a website to point out concrete problems in public sector processes.”
		WILL_SIMPLE3: “I would use a website where I can give feedback on alternative public sector processes.”
Willingness for complex tasks (Schenk & Guittard 2011)	Willingness to engage in problem solving and design processes	WILL_COMPLX1: “I would like to point out ideas for process improvement for public administration.”
		WILL_COMPLX2: “I would like to support the development of solutions for process improvement.”
		WILL_COMPLX3: “I would like to help implement adequate solutions.”
		WILL_COMPLX4: “I would use a website where I can create new/improved public services.”

Questionnaire items that refer to providing feedback on citizen satisfaction with existing or hypothetical business processes are categorized as simple tasks as they demand a low intensity of involvement and are intellectually hardly challenging. Items that ask for the willingness to participate in high-intensity, intellectually demanding tasks like problem solving and process design are labeled as willingness for complex tasks. (see Table 2)

All items are measured on a 5-point Likert scale (ranging from 1 “I strongly disagree” to 5 “I strongly agree”). The constructs are aggregated using the arithmetic means of their respective items.

3.2.1.2 Financial Incentives

One survey item directly measures the general willingness to participate in public sector process innovation crowdsourcing if financial incentives are offered. (see Table 3)

Table 3: Variable of willingness with financial incentives

Variable	Item
Willingness with financial incentive	WM1: “If public administration offered me monetary incentives, I would collaborate in process innovation.”

3.2.2 Independent Variables

Contributors for complex task crowdsourcing are typically selected based on their experience, skills and qualifications [38, 15]. For our example of public sector process innovation, we identify two dimensions of relevant expertise: experience in public administration and experience with business process management. (see Table 4)

Table 4: Construct of expert status

Construct	Definition	Items
Expert Status (Zwass 2010)	Experience as public administration or business process management professionals	ES1: “I have work experience in public administration” ES2: “I have work experience in business process management.”

Both items for experience in public administration and business process management are measured binarily. Accordingly, the expert status construct is dichotome with the category “expert” for respondents with experience in public administration and/or business process management and the category “non-expert” for everyone else.

3.2.3 Control Variables

All results are controlled for age which is known to be a significant factor for civic participation [7]. In line with existing literature on civic participation, initial tests of our data show that gender does not have a significant influence and is therefore not included in the model [32].

3.3 Research Models

We employ two research models to test our hypotheses:

1. For H1 and H2, we measure the influence of the expert status (controlling for age) on the willingness to participate in simple and complex tasks.
2. For H3, the influence of expert status (controlled for age) on the willingness to participate in citizensourcing with financial incentives is calculated.

3.4 Method Selection and Data Analysis

Since the main variable “Expert Status” is dichotome, we examine the effects proposed in the hypotheses with comparisons of means. The significance of the observed differences in means is validated with an independent samples t-test. To isolate the influence of expert status from possible age effects, we run linear regression models including both variables as predictors. Further, the internal validity of the constructs willingness for simple and complex tasks is tested for by calculating their Cronbach’s alpha values.

3.5 Data Collection

Data was collected through random personal interviews in public spaces of a German mid-sized city. The standardized questionnaire consists of three blocks of questions on willingness to hypothetically participate in citizensourcing for public sector process innovation, citizen expertise and demographic basics.

Our final sample consists of 128 citizens aged 17 to 83.

4. RESULTS

4.1 Results for Hypothesis 1 & Hypothesis 2

The constructs of willingness for simple and complex tasks display robust internal consistency with Cronbach’s alpha values of 0.814 and 0.870, respectively.

Comparing the means of the willingness to participate in simple and complex tasks, it is obvious that citizens more readily take part in integrative crowdsourcing than selective citizensourcing.

In the comparison between experts and non-experts, we first of all notice that experts are more willing to participate in both kinds of tasks. As expected, the difference is more pronounced for selective citizensourcing (M=3.68 for experts compared to M=2.43 for non-experts). The differences in means prove significant in an independent samples t-test (p=0.001 for simple tasks, p=0.000 for complex tasks) and are therefore unlikely to be the result of random distributions.

Looking closer at the relation between expert status and the willingness to collaborate in complex tasks while controlling for age in a linear regression model, we find both expert status and age to be highly significant factors. However, with $\beta=0.375$, expert status exerts a considerably stronger influence on the willingness to collaborate in complex tasks than age with $\beta=0.247$.

Figure 2: Boxplot of Willingness for Simple Tasks by Expert Status

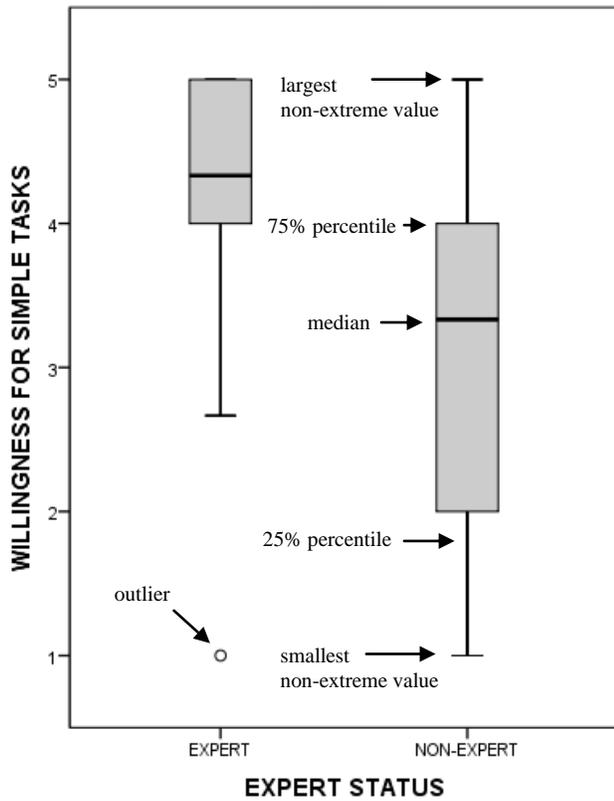


Figure 1: Boxplot of Willingness for Complex Tasks by Expert Status

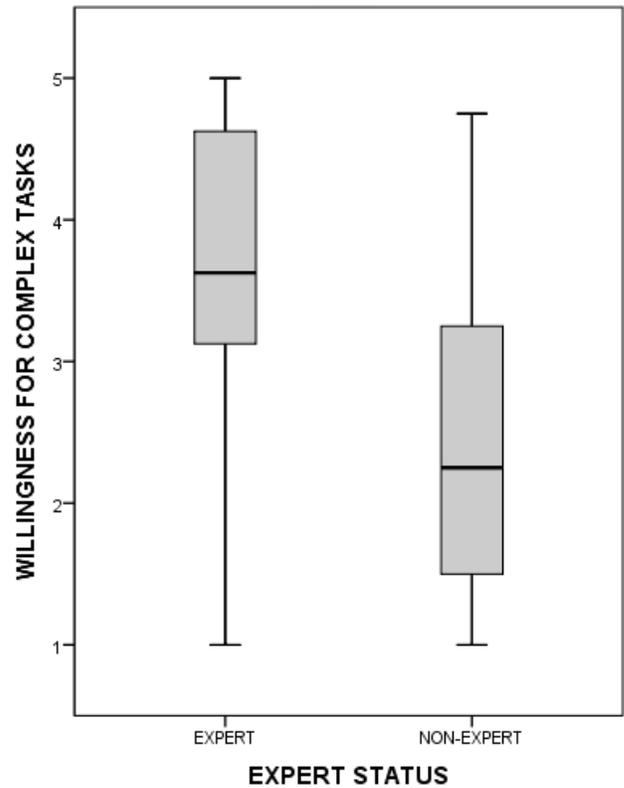


Table 5: Comparison of means for willingness for simple and complex tasks according to expert status

EXPERT STATUS		WILL_SIMPLE	WILL_COMPLX
EXPERT	Mean	4,1296	3,6875
	N	18	16
	Std. Deviation	1,03620	1,08205
	Variance	1,074	1,171
NON-EXPERT	Mean	3,1848	2,4382
	N	92	93
	Std. Deviation	1,08420	1,06044
	Variance	1,175	1,125
Total	Mean	3,3394	2,6216
	N	110	109
	Std. Deviation	1,12789	1,14797
	Variance	1,272	1,318

Table 7: Model summary for linear regression model for dependent variable willingness for complex tasks with predictors expert status and age

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,469a	,220	,205	1,00973

Table 6: Coefficients for the linear regression model for willingness for complex tasks

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	4,316	,336		12,853	,000			
	AGE	-,016	,006	-,247	-2,839	,005	-,283	-,268	-,246
	EXPERT	-1,187	,275	-,375	-4,315	,000	-,399	-,390	-,374

With a coefficient of determination $R^2=0.22$, our expert-age-model already explains more than 20 percent of the variance in the willingness to collaborate in complex tasks. This points towards additional factors for selective citizensourcing motivation that can be revealed through further research.

4.2 Hypothesis 3

With means of $M=3.21$ for non-experts and $M=4.00$ for experts, we see that both groups react well to financial incentives. The higher willingness of citizens classified as experts to take part in citizensourcing, which we already found for hypotheses 1 and 2, also occurs under financial incentives.

Combining expert status, age and willingness to participate in citizensourcing if financial incentives are offered in a linear regression model, we try to isolate the influences of expert status and age. Both age ($p=0.000$) and expert status ($p=0.040$) prove to be significant at the 5 percent level. However, with $\beta=0.638$, age is clearly the dominant factor in this model, compared to expert status with $\beta=0.152$.

Here, we find that age has a strong negative correlation with the motivation through financial incentives. Taking into account that this model explains almost 50 percent ($R^2=0.45$) of the variance in willingness with financial incentives, we witness an unexpectedly strong age effect. In comparison, being an expert only slightly affects the probability receptiveness for financial incentives.

5. DISCUSSION

5.1 Summary of Findings per Hypothesis

Our analysis confirms H1 and H2 while H3 has to be rejected: Consequently, expert citizens are more willing to participate in integrative as well as selective citizensourcing in general, more readily take on complex tasks, and are quite receptive to financial incentives.

Additionally, we have found our control variable “age” to be surprisingly influential, which should be explored further.

5.1.1 Findings on H1: Expert Citizens Are More Willing to Collaborate in Both Simple and Complex Citizensourcing Tasks than Non-Expert Citizens.

In the comparison of means, experts indeed report a significantly higher willingness to collaborate on citizensourcing tasks. Thus, we confirm similar findings from private sector crowdsourcing for public sector citizensourcing.

Figure 3: Boxplot of Willingness with Financial Incentives according to Expert Status

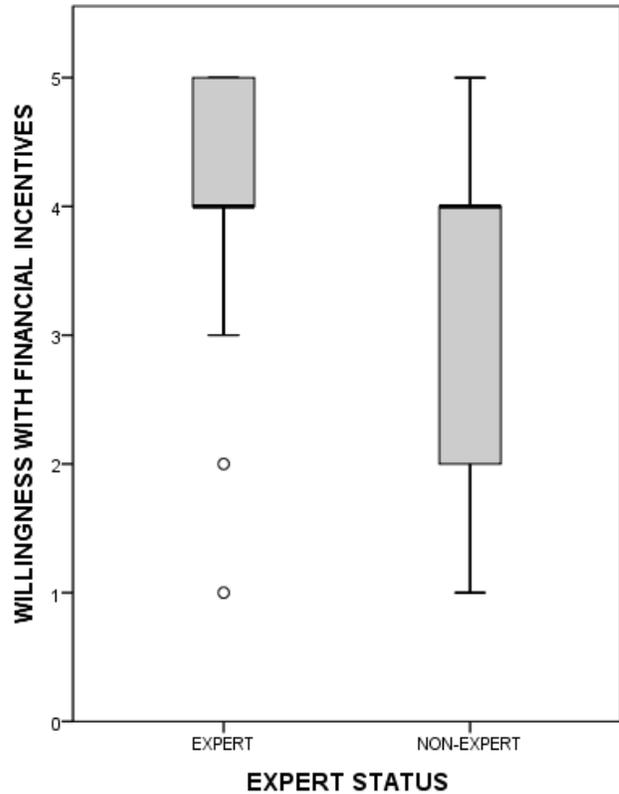


Table 9: Model summary for linear regression model for dependent variable willingness for complex tasks with predictors expert status and age

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,671a	,451	,440	1,032

Table 8: Coefficients for linear regression model for willingness with financial incentives

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	5,965	,331		18,000	,000			
	AGE	-,051	,006	-,638	-8,727	,000	-,654	-,650	-,634
	EXPERT	-,558	,268	-,152	-2,079	,040	-,220	-,200	-,151

5.1.2 Findings on H2: Expert Citizens Are More Willing to Collaborate in Selective Citizensourcing than Non-Expert Citizens.

Experts report a considerably higher average willingness to work in selective citizensourcing tasks than non-experts. Although the age does have an influence, expert status remains dominant when controlled for age. Thus, the specific motivational factors that experts experience in sophisticated selective crowdsourcing designs identified by Lakhani also hold in our public sector setting [18].

In addition, our results point towards further important determinants of willingness to take part in selective citizensourcing.

5.1.3 Findings on H3: Financial Incentives Are Less Effective with Expert Citizens Than With Non-Expert Citizens.

The hypothesis that expert-specific motivational factors may crowd out the effect of financial incentives has to be rejected. To the contrary, the experts in our sample report a higher average willingness to participate in citizensourcing if financial services are offered than non-experts. While our analysis reveals this phenomenon to be mostly attributable to age, we cannot find a negative correlation between expert status and reaction to financial incentives.

5.1.4 Findings on Control Variable “Age”

Controlling for distorting influences of age on our main independent variable “expert status”, we found age to be more relevant to citizensourcing motivation than the reviewed literature indicated. In our models, age is negatively correlated with willingness to take part in citizensourcing, meaning elder people are less motivated. For financial incentives, we see that younger citizens react well but older people are hardly moved by the promise of remuneration.

5.2 Implications

Our results suggest that findings from private sector crowdsourcing can well be transferred to public sector citizensourcing. Based on our findings, further research should expand our understanding of citizen motivation to participate in public sector crowdsourcing. Motivational aspects such as e.g. citizens’ perception of contributing to the public good can eventually be analyzed in combination with outcomes (e.g. legitimacy increase, cost effects etc.) of such designs in order to expand the knowledge basis on optimal combinations of reward mechanisms for citizensourcing. Here, research can deliver assessments of the synergistic potential that such public sector innovation with citizens can open up. This might provide insights for political science, public administration and computer sciences – enabling the latter to design online interfaces for more user-centric public sector crowdsourcing. With regard to practice, the findings might also inform public administrations to design and implement citizensourcing projects.

Regarding the specific cases of selective and integrative crowdsourcing, we see various implications for theory and practice. First, our findings have shown that expert citizens show higher levels of willingness compared to the mean of non-expert citizens to participate in both types of crowdsourcing. Hence, public administrations implementing crowdsourcing projects need to – after defining the task that should be accomplished – decide

which type of crowdsourcing is most likely to deliver the desired outcome. Carefully taking citizens’ motivations into consideration for the crowdsourcing design, sufficient and adequate collaborators even for complex tasks can be mobilized.

Second, to increase legitimacy as a positive side-effect, integrative crowdsourcing seems intuitively the most promising. However, selective crowdsourcing through expert citizens can – if these experts act as innovative lead users and opinion leaders – achieve increased legitimacy [36]. As mentioned above, the selection of the citizensourcing design always depends on the output the initiating entity is looking for.

Finally, the influence of age as found in our analysis should be further investigated as this is rather specific to public sector citizensourcing and has been of little interest to private sector crowdsourcing research so far. The age divide in crowdsourcing might actually reflect the digital age divide as most crowdsourcing projects to date are web-based. Further, senior citizens may be less familiar with our example of business processes. However, elder people, with lifetimes of experience and arguably more disposable spare time than the working and parenting population, are among the most attractive target crowds for citizensourcing for innovation. However, we find for instance that elder people are less receptive for financial incentives. This is an interesting aspect bearing in mind the looming challenge of demographic change that is growing increasingly relevant for societies all over the globe. Hence, future research should aim to understand and explore the effects of age on citizensourcing. Apparently, we need to find novel means and tools to activate the social group with the highest levels of experience: the elderly.

6. SUMMARY, LIMITATIONS AND OUTLOOK

6.1 Summary

In this research paper, we have shown that citizens are indeed motivated to collaborate in selective. Although mobilizing adequate experts for complex tasks may seem challenging, we find that experts have a higher willingness to collaborate on complex tasks than non-experts. As we cannot find a crowding out effect for financial incentives, these remain a relevant instrument in the design of citizensourcing projects. Also, we could show that age has a negative relationship with willingness to participate in citizensourcing: this represents obviously a fertile starting point for future research.

6.2 Limitations

Generalizability of our study results is obviously limited due to the small sample size, in particular when it comes to our previously identified expert group. Therefore, future research on crowdsourcing in the public sector should - besides taking into consideration more aspects of citizen engagement in such collaborative endeavours like general reward systems - aim at a larger sample in order to increase the generalizability of results. However, due to the probability sampling of respondents, we still see a clear added value that our research delivers to the academic literature on citizensourcing for complex tasks. Although our study looked at process innovations, the results should be transferable to other areas of public sector innovations. Such a transfer would of course also need systematic research in order to become empirically grounded.

Internal validity has been achieved through the random sampling of individuals in a mid-sized German city. With regard to external validity, we are aware of the possibility of social desirability bias with respondents reporting higher levels of willingness to participate because they want to please the interviewer. Nevertheless, as participants were neither pre-informed about the goal of our study nor were chosen because of certain characteristics, we think that our results possess a relatively high degree of external validity.

Through the quantitative research approach via regression analysis we could achieve a high level of reliability. A potential replication of this study with different respondents in other geographical regions is likely to deliver similar results. Also, we can imagine that the willingness of expert citizens to take part in crowdsourcing efforts might differ according to the level of acceptance and therewith legitimacy of public administrations in the respective country.

6.3 Outlook

With this research paper, we have attempted to take a first step into the important issue of complex public sector innovation through selective crowdsourcing. With the tremendous possibilities that the development of the internet is offering to societies, this topic is likely to become even more important in the future. Especially for developing and emerging nations crowdsourcing in the public sector offers enormous opportunities to build efficient public administration structures from the early stages onwards. Furthermore, bureaucracy and red tape can be reduced due to increased transparency. Simultaneously, legitimacy of public organizations might potentially be increased through the inclusion of citizens in different stages of the development and innovation process.

As mentioned, public administration can tap useful knowledge resources with citizensourcing by opening up the innovation process and overcome its specific restrictions (e.g. socio-political support and organizational cultural) for innovation. In addition, age as an influence on selective crowdsourcing appears to be a fruitful future research field – especially in the face of demographic change. Finally, we see the specific case of selective citizensourcing as a highly relevant and useful tool to complex public administration innovations which urges the need to be researched further and more deeply.

7. ACKNOWLEDGMENTS

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