

# Civic crowdfunding as a marketplace for participation in urban development

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## **Abstract**

The emergence of civic crowdfunding projects and platforms that seek to crowdfund public services, offers a challenge to incumbent mechanisms offered by government and non-profit organizations, and presents a fresh means of political participation. However, just as civic crowdfunding can be seen as the latest manifestation of public-private fundraising initiatives — from nineteenth-century UK public parks subscriptions to Pulitzer’s Statue of Liberty campaign — it also faces questions related to the distribution of resources and opportunities. This paper analyzes whether civic crowdfunding represents an open and well-distributed means of participation. It finds that present civic crowdfunding opportunities are heavily concentrated in major cities and skew towards environmental and green space-related projects, and that there is steep inequality in the size of successful projects consistent with a Pareto distribution. Furthermore, while there is evidence of broad-based participation in smaller projects, larger projects (in which the majority of resources are currently concentrated) are more likely to derive the majority of their funding from a small number of large-value donations. While these distributional inequalities may be neither surprising nor troublesome in a market for consumer goods, they have political and ethical implications for civic crowdfunding actors endorsing the idea that the field can serve the interests of a broad public.

Keywords: crowdfunding, civic crowdfunding, participation, urban planning

The rise of pledge-based crowdfunding as a multi-million dollar industry, spurred by the success of for-profit organizations such as Kickstarter and IndieGoGo, has led to the proliferation of specialist platforms that serve particular communities and interests, from scientific research to journalism. Among the most ambitious and contested of these sub-genres is civic crowdfunding: projects and platforms that seek to crowdfund parks, community centers and social services. In some cases these crowdfunding campaigns seek to produce classic public goods, while in others their outputs are privately or quasi-publicly held non-excludable goods. In either case, these projects offer a challenge to incumbent mechanisms for action offered by government and non-profit organizations, and the opportunity for the crowd to co-produce ‘civic goods’ in this way is emerging as a fresh means of political participation (**davies’civic’2014**).

However, just as civic crowdfunding can be seen as the latest manifestation of public-private fundraising initiatives from nineteenth-century UK public parks subscriptions to Pulitzer’s Statue of Liberty campaign it also faces questions related to the distribution of resources and opportunities and the complex interplay of public and private interests that are long established and largely unresolved. Unlike conventional conceptions of crowdsourcing, which prefer the independence of individuals within a crowd, civic crowdfunding usually depends on intentional relations between actors to mobilize resources and is subject to the natural contest associated with political participation. This paper seeks to interrogate whether civic crowdfunding in its current state represents an open and well-distributed means of participation by examining the extent to which the opportunities it presents are concentrated in particular geographic areas, towards certain types of endeavour and typically attract large or small donations.

In pursuing these questions I have written a series of web crawlers to construct an original dataset of 1,119 crowdfunding projects drawn from seven platforms based in Brazil, Spain, the UK and the US: Citizinvestor, Catarse, IOBY, Neighborly, Goteo, Kickstarter and Spacehive. The projects, which include successful, failed and open campaigns, have collectively recorded 139,984 pledges, and completed projects collectively raised \$13.68 million. The paper analyzes the distribution of those projects in terms of scale, type of project, number of backers, average donation and geographic location. To reconcile differences in classification systems between platforms, it presents an 8-member typology of civic crowdfunding projects to allow descriptive analysis of the field.

The data show:

- 1,224 project campaigns have been launched since 2010
- 771 projects have been successfully funded
- \$10.74 million was raised (completed projects)
- 113,468 pledges were recorded (for all projects)
- The median pledge to all projects was \$62
- The median fundraising goal for a project was \$8,000
- The median amount raised by completed projects was \$6,357

The analysis that follows shows that the majority of civic crowdfunding projects currently are occurring on generic platforms that cater to a range of project types, but that the subgenre of dedicated civic crowdfunding platforms is growing. Projects on both types of platforms vary greatly in size and rate of participation, and a small

number of large-scale projects have, to date, attracted the majority of the funds raised for civic crowdfunding projects.

There is an emerging *typical* crowdfunding project, which tends to be a small-scale garden or park project in a large city that produces a public good for an underserved community. These projects are by far the most numerous but have attracted less attention than large-scale endeavors. There is also early evidence that civic projects enjoy higher success rates than other types of crowdfunding project, but the data is not yet comprehensive enough to allow a robust claim to be made about the relative success rate of civic projects. Similarly, while the geographic distribution of projects shows a bias towards large cities, there is insufficiently granular geographic data to allow an analysis of the relationship between project distribution and demographic and socio-economic indicators.

The paper finds that in its present, nascent state, civic crowdfunding offers opportunities for participation that are heavily concentrated in major cities (especially those in which platforms are headquartered, such as London, New York and San Francisco) and skew towards environmental and green space-related projects. A small minority of projects seek to provide services to underserved communities, although approximately one in ten projects mentions wealth redistribution among its goals. All but one of the platforms studied publishes insufficient project location data to enable a granular exploration of the geography of opportunity, such as analyzing the average household income of neighborhoods in which crowdfunding projects occur.

In terms of the scale of a typical project, civic crowdfunding closely resembles the median project found across all sectors on sites such as Kickstarter and IndieGoGo: the median civic crowdfunding project goal is \$7,534 and attracts an average donation of \$68. However, the paper also finds evidence of steep inequality in the size of successful projects consistent with a Pareto distribution: the top ten percent of projects by value account for eighty percent of the total funds raised in the sector overall. Furthermore, while there is evidence of broad-based participation in smaller projects, larger projects (in which the majority of resources are currently concentrated) are more likely to derive the majority of their funding from a small number of large-value donations.

These distributional tendencies have political and ethical implications for civic crowdfunding and the notion that it can serve the interests of a broad public. As more municipal governments engage with civic crowdfunding, more robust analysis will be required to support its effective application (**davies'four'2015**). This paper is intended as an early contribution to that effort and calls for further mixed-methods inquiry into the field. Finally, it seeks to open a dialog between platforms, public and private organizations, and individual citizens about future course and potential of civic crowdfunding.

## 1 Overview of platforms in the dataset

There are significant differences between the platforms considered: some are non-profit entities, some allow any individual or organization to post while others are restricted to government agencies, and variable platform fees are levied. See Table ?? for a summary

Table 1: Overview of Civic Crowdfunding Platforms

Platform Name	Country	Currency	Open Posting	Flexible Funding	Fee	Entity Type	Est.
Catarse	Brazil	BRL	Yes	No	13%	For-profit	2010
Citizeninvestor	USA	USD	Govt	Yes	5%	For-profit	2012
Goteo	Spain	EUR	Open Source	2nd round only	8%	Non-profit	2011
ioby	USA	USD	Yes	Yes	\$35*	Non-profit	2009
Kickstarter	USA	USD	Individuals, for-profit	No	5%	For-profit	2009
Neighbor.ly	USA	USD	Govt, non-profits	Yes	5%**	For-profit	2012
Spacehive	UK	GBP	Yes	Yes	5%	For-profit	2011

of the differences between the platforms in the dataset.<sup>1</sup>

The seven platforms being considered can be divided into two types, Civic Platforms (CP), which focus exclusively on civic projects, and Generic Platforms (GP), which host a wide range of crowdfunding projects. The four CPs are Citizeninvestor, ioby, Neighbor.ly and Spacehive. The three GPs are Catarse, Goteo and Kickstarter. The CPs have subsections (“categories” or “tags”) that provide a way to identify civic projects, and the project data are drawn from these subsections, as described below.

CP projects offer the closest reading of how civic crowdfunding is operating currently, since the stated goal of the CPs being considered is to support projects that provide services to communities. GP projects are subject to categorization decisions made by platform owners and as such may contain cases that do or do not fit the definition of civic projects. Projects on Goteo were collected from the “Social” and “Cultural” categories, Catarse projects were collected from the “Urbanism” category and Kickstarter projects were collected from the “Civic” tag.<sup>2</sup> IndieGoGo was explored as a possible fourth platform for GP projects, but its current data structure does not support the identification of civic projects: 3,355 projects were collected from its “Community” category, but the data was too broad in scope and goals to be usefully compared to either the CP or GP projects.

Project data from the seven platforms was collected using a series of unique web crawlers, scripts written to capture chosen attributes.<sup>3</sup> The scripts capture all relevant project data that is displayed on the sites at runtime — open, closed, successful and

<sup>1</sup>Notes to Table: \* ioby’s platform fee of \$53 applies to projects over \$1,000 only. ioby charges an additional 5% to organizations that use it as a 501(c)(3) fiscal sponsor. Neighbor.ly founder Jase Wilson said in June 2013 the platform is planning to lower the fee (Wilson, 2013).

<sup>2</sup>Kickstarter does not provide a category for civic projects, but it does allow projects to be tagged as “Civic” by creators and platform administrators. A Kickstarter project can be assigned only one of the 13 categories the site provides, but it may have a theoretically unlimited number of tags.

<sup>3</sup>214 of the successful ioby projects were not indexed on the site, although the URLs remained active. All the fields related to these projects except for the Number of Funders was supplied directly by ioby. Using the URLs present in that data, the Number of Funders field was collected using a web crawler.

unsuccessful projects are captured, and their status recorded. The seven scripts were run on March 23, 2013, and captured eight attributes about each project. These are:

- Project Name
- Location
- Project Goal
- Amount Raised
- Number of Funders
- Funding Open (True / False)
- Summary text

From these fields, two further attributes were calculated, Average Pledge (mean) and Percentage Raised, to record projects that exceeded their goal. From the complete collection of projects, the compiled civic crowdfunding dataset, a number of subsets were constructed. These are referred to below by a label, such as “Compiled Civic Crowdfunding Dataset” and an identifier, such as CCFD1. For a breakdown of the datasets and their identifiers, see ??, p. ??.

## 2 The scale of projects and platforms

The size of the Compiled Civic Crowdfunding Dataset (CCFD1), at \$10 million in a period of just over three years, is a very small percentage of the donation crowdfunding market, estimated at \$1.2 billion per year (Deloitte, 2013).<sup>4</sup> Within this dataset, the relative sizes of platforms tells us a great deal about the maturity and growth rates of different types of platforms. It is clear that civic crowdfunding is largest in the United States, although participation rates and total project sizes are often higher in the projects from the UK and Brazil. Among projects, there is a very wide range in scale. The dataset contains campaigns that raised hundreds of thousands of dollars, and those that raised hundreds of dollars. The great variations in scale speak directly to the differing ambitions and expectations of project owners, and the types of uses to which civic crowdfunding is being directed.

### 2.1 CP projects

There were 489 CP projects with a combined goal of \$8.1M.<sup>5</sup> The projects had raised \$4.1M as of March 25, 2014. Seventy-six projects had raised 50% or more of their target; 46 projects had attracted no backers. The mean percentage raise for a CP project is 31%. The extent to which a project must meet 100% of its target to be considered successful is a contested issue, which will be discussed below. The data show that ioby is currently the leading civic crowdfunding platform in terms of the volume of projects (409), and participation level (5,423 pledges). Spacehive is the largest platform by amount raised for successful projects (\$1.98M); its participation level is the second-highest, at 1,714 pledges.

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<sup>4</sup>See ?? in ??, p. ??.

<sup>5</sup>Throughout this paper, Spacehive projects in GBP are converted to USD at an exchange rate of 1 GBP = \$1.37. These projects are in the ?? described in ??, p. ??.

The median CP project is \$2,099, attracts an average donation of \$58.51 and a median of seven backers. Due to the large number of projects with low participation rates — 203 projects attracted fewer than five backers — it is worth comparing these figures with the 283 projects that raised 50% or more of their target. Among these moderately successful projects, the median goal is \$1,150, the median number of backers for a project is 13, and the average pledge is \$92.17. Among the CP platforms, there is wide variance in project sizes: Neighbor.ly has the largest median goal, at \$39,813, while ioby has the lowest, at \$1,725. The spread of average pledges across Citizinvestor, Neighbor.ly and Spacehive is \$105-\$159, while the average pledge on ioby is \$52.

From this very first exploration of CP projects, we can conclude that ioby projects tend to be smaller-scale and attract more, lower-value donations, while Citizinvestor, Neighbor.ly and Spacehive tend to skew towards higher-value donations, but with a lower rate of participation.

## 2.2 GP projects

The GP projects are much more numerous (726) than CP projects, and account for more than double the amount raised by CP projects (\$7.2M).<sup>6</sup> Kickstarter is, unsurprisingly, as the most commercially successful of the platforms, the largest supplier of GP projects, with 356 projects that have raised \$5.26M. The Goteo categories covered have supported 363 projects worth \$1.88M, and Catarse has produced 15 urbanism projects totaling \$23,148.<sup>7</sup> Kickstarter also has the highest level of participation in civic projects, with 72,360 pledges, compared to 31,374 and 1,079 for Goteo and Catarse projects respectively. Kickstarter and Goteo are each larger producers of projects that may be considered civic than the entire civic crowdfunding platform space combined.

The median GP project aims to raise \$7,672, attracts an average donation of \$60 and a median of 77 backers. GP projects, or more accurately, the platforms hosting them, have many fewer instances of low participation — 28 projects (3.8%) attracted fewer than five backers. As a result we observe less discrepancy when adjusting for projects that raised 50% or more of their target. Among this subset of moderately successful GP projects, the median goal is \$7,330, the median number of backers is 86 and the mean donation is \$65.74. This is very close to the mean donation reported by Kickstarter, \$70.<sup>8</sup> The average pledge per individual is relatively high compared to charitable giving overall, since it represents just under one tenth of the amount that US households give to non-religious charities each year.<sup>9</sup>

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<sup>6</sup>These projects are collected in the ???. For an explanation of the dataset, see ??, p. ??.

<sup>7</sup>Exchange rates used: 1 EUR = 1.39 USD for Goteo; 1 USD = 0.43 BRL for Catarse.

<sup>8</sup>See Kickstarter (2012) 2012. Kickstarter reported that the mode donation is \$25. Since CCFD1 does not contain every donation paid to the platforms, it is not possible to calculate the mode donation.

<sup>9</sup>Among the 67% of US households who donate to charity, those that give to secular causes donate around \$863 per year, according to the 2013 Giving USA annual report (USA, 2013).

Table 2: Overview of Project Sizes (CP and GP)

Platform	Projects	Raised	Median
GP Projects	726	\$7.2M	\$7,672
CP Projects	481	\$4.1M	\$2,099

### 3 Growth of projects on civic and generic platforms

Constructing a time series of data collected from the platforms was challenging due to the lack of reliable date information on some of the platforms. For many of the unsuccessful projects, date information was entirely absent. In some cases, approximate dates (sufficiently accurate to group projects by quarter) could be derived using the completion date of the projects and postings by project owners. This section focuses on 271 CP projects for which accurate date information could be obtained, and all 429 successful Kickstarter projects, in order to analyze rates of growth.<sup>10</sup>

The number of completed, successful projects on civic platforms continues to grow, although the rate of growth has fluctuated significantly by quarter and by year. 2012 saw the biggest overall rate of growth for successful CP projects (92%), with quarterly growth ranging between 5% (Q4) and 39% (Q1). The explosive growth in 2012 is partly explained by the fact that three of the platforms launched during this year and were actively recruiting projects. The rate of growth stabilized in 2013 to 30% growth year-on-year, with quarterly growth rates of between 2% and 10%. Civic projects on Kickstarter show a similar growth trend, with rapid growth in 2012 (628%) followed by stabilization in 2013, although the annual growth rate (84%) is still very high. Taken together, there were 141 successful CP and Kickstarter projects by 2011, rising to 442 by 2012 and 700 by 2013. These findings are summarized in Tables 2.3 and 2.4.

The posting of successful CP projects and civic projects on Kickstarter has yet to find a consistent, steady rate of growth, but platforms continue to add projects each quarter and the annual growth rate is strong. Figure ?? shows that during 2011, CPs had posted more civic projects than Kickstarter, and that Kickstarter appears to have overtaken CPs in the final quarter of 2012. While this crossing in fortunes is intriguing, it is difficult to draw firm conclusions from it, since Kickstarter did not introduce a “Civic” tag until January 2013 and projects posted before this date were retrospectively tagged.<sup>11</sup> What is clear is that in the past year, the growth in civic projects on Kickstarter continues to outpace CPs, which is not surprising given the platform’s dominance of the donation crowdfunding market.

While three years’ of data makes long-term trend analyzes problematic, it is notable that in each of the three years, the fourth quarter was the slowest in terms of growth. Several civic crowdfunding campaign managers have remarked in interviews for this project that the fourth quarter of the year is the least attractive moment in the year to seek financing since foundations and potential large donors are likely to be finalizing

<sup>10</sup>For more on methodology and collection process, see “??” described in ??, p. ??.

<sup>11</sup>See the following section, “The problem with success rates and Kickstarter’s hidden civic success”.

Table 3: Successful projects posted 2011-2013, quarterly growth

Period	CP Total	QoQ	Rate	KS Total	QoQ	Rate	CP + KS	QoQ	Rate
Q1 2011	6	6		6	6	100%	12	12	
Q2 2011	92	86	1533%	12	6	100%	104	92	767%
Q3 2011	100	8	9%	18	6	50%	118	14	13%
Q4 2011	109	9	9%	32	14	78%	141	23	19%
Q1 2012	151	42	39%	55	23	72%	206	65	46%
Q2 2012	171	20	13%	90	35	64%	261	55	27%
Q3 2012	199	28	16%	154	64	71%	353	92	35%
Q4 2012	209	10	5%	233	79	51%	442	89	25%
Q1 2013	230	21	10%	301	68	29%	531	89	20%
Q2 2013	244	14	6%	349	48	16%	593	62	12%
Q3 2013	265	21	9%	410	61	17%	675	82	14%
Q4 2013	271	6	2%	429	19	5%	700	25	4%

Table 4: Successful projects posted 2011-2013, annualized growth

Period	CP Total	CP YoY	Rate	KS Total	YoY	Rate	CP + KS	YoY	Rate
FY 2011	109	100		32			141		
FY 2012	209	100	92%	233	201	628%	442	301	213%
FY 2013	271	62	30%	429	196	84%	700	258	58%

commitments from the past year and are less willing to invest in new projects than at the start of the year. The variations in quarterly growth can be seen in Figure ?? below.

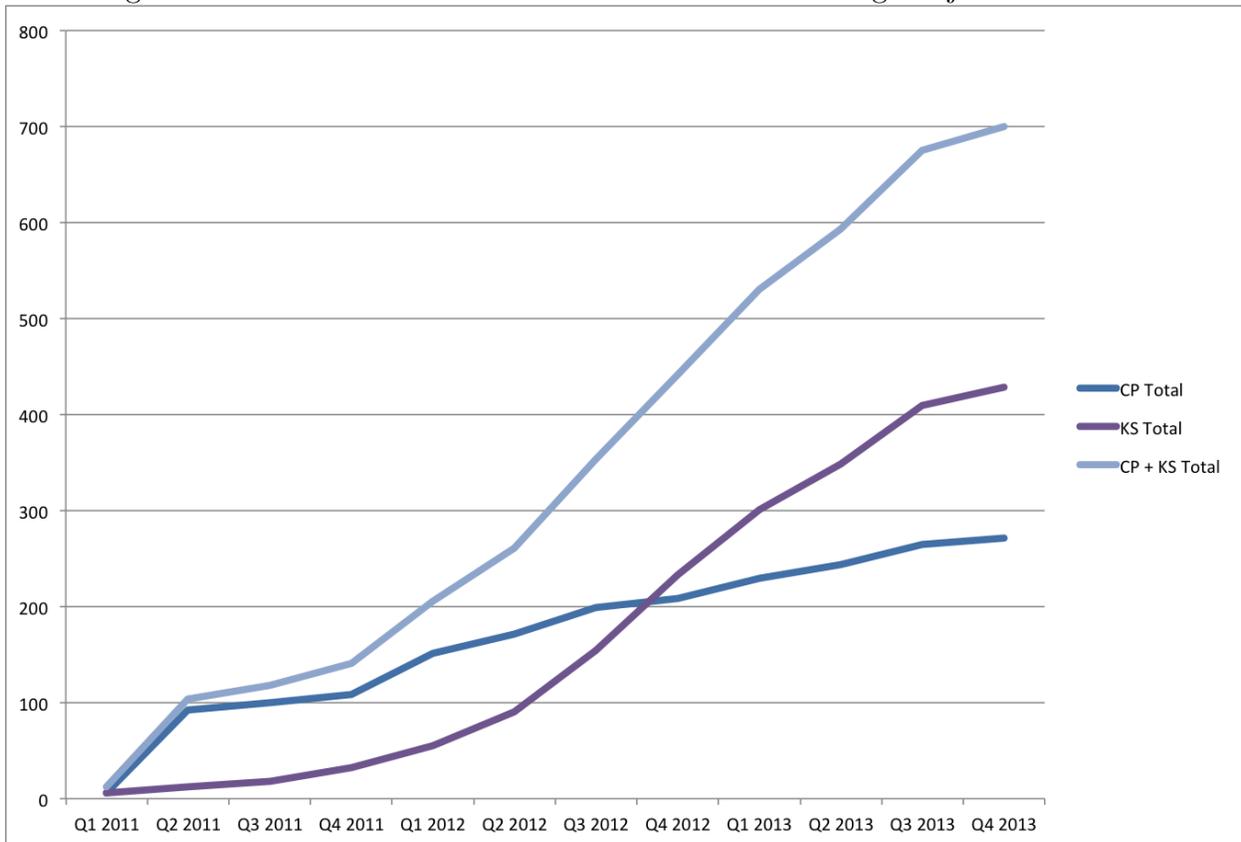
These data are further evidence that civic crowdfunding is a nascent subgenre, and that CPs are yet to establish themselves as brand names of the caliber of Kickstarter. Nevertheless, they continue to supply a small but steady stream of success stories that are helping to re-confirm the idea that civic crowdfunding is a viable form of financing for these projects.

## 4 The problem with success rates and Kickstarter’s hidden civic success

In the description above, I used the assumption that projects that raise more than 50% should be considered moderately successful. This approach was necessary because the CP platforms in the dataset all offer “flexible funding”, which means that project owners may receive the funds even if the project doesn’t reach its goal. Without this clear marker of success or failure, analysis of the success rate of CP projects is problematic and may be an area that platform owners change as they seek to build their reputation and improve their position as competition for their services increases.<sup>12</sup>

<sup>12</sup>See Conclusion, “Data Quality and Transparency”.

Figure 1: Total Number of Successful Civic Crowdfunding Projects 2011-2013



In GP projects, however, we have a clearer indication of success, since each of the three platforms specifically designates projects as successful only if they reach either their target amount (Kickstarter and Catarse) or an agreed minimum (Goteo).<sup>13</sup> Here we see some striking indications of the success of GP civic crowdfunding projects. Catarse urbanism projects have a success rate of 33% (4 of 12 completed projects), Goteo projects have a 68% success rate (223 of 327) and Kickstarter “Civic” projects have a success rate of 80% (281 of 352).

The performance of Kickstarter civic projects is striking. While the median size of a successful civic project on Kickstarter (\$6,437) is similar to the average successful project across categories (the mode is between \$1,000 and \$10,000), if Kickstarter were to have a “Civic” category for projects on the site alongside the likes of music, video games and movies, it would be the platform’s most successful category in terms of proportion of projects funded. Its 81% success rate surpasses Dance (70%) and is almost twice that of the average project (43.86%).<sup>14</sup> However, despite civic projects’

<sup>13</sup>Goteo campaigns occur in two rounds: the first round is an *all-or-nothing* campaign in which the project owners only receive the money if they raise their target amount, and the second round is a flexible funding campaign in which the project needs to reach at least the agreed minimum for the project, which is published when the project launches.

<sup>14</sup>Statistics published by Kickstarter on March 22.

Figure 2: Successful Projects Added, Quarter on Quarter



success, they remain a minority pursuit on Kickstarter. The total of 356 projects bearing the civic tag would make it a quarter of the size of the smallest category (Dance) and the smallest category by project value (\$5.26M compared to \$5.99M for Dance). Assuming that Kickstarter collects 5% on every civic project and does not offer differential rates to certain campaigns (there is no evidence to suggest that it does), civic projects earned Kickstarter \$263,000 in revenue up to March 4. This suggests that civic projects are a small but significant subset of Kickstarter projects, but further growth is likely necessary for the company to consider either recognizing civic projects as a separate category.<sup>15</sup> Were Kickstarter to create a civic category rather than manually tagging projects at the time of creation, it is likely that the number of civic projects would increase, but it is unclear what impact that would have on its success rate. Currently projects are tagged at the time of creation. Projects that began before the civic tag was introduced in January 25, 2013 were reviewed and tagged retrospectively by Kickstarter, although the platform has not published a clear methodology for the tagging process.

<sup>15</sup>Kickstarter is understood to have considered creating a Civic category in the past, but rejected the idea due to problems defining and delimiting civic projects from other categories.

Table 5: Overview of Project Sizes (CP and GP)

Variable	Projects	Mean	Std. Dev.	Min	Max
Goal	1223	\$14,740	52750.57	0	\$1,083,670
Raised	1223	\$9,502	40855.78	0	\$1,085,040
No of Funders	1222	92.97	204.7256	0	3,175
AvgPledge	1222	\$204.36	1069.424	0	\$25,030.56

## 5 The distribution of wealth and activity in civic crowdfunding

Is civic crowdfunding in its current state an open and well-distributed means of participation? If civic crowdfunding has the potential to supplement or replace existing public services, does it distribute resources evenly, or does it privilege certain groups and activities? While these questions demand analysis over several years, we can begin to address them by examining the extent to which the opportunities crowdfunding has supported to date are concentrated towards particular sizes and types of endeavour.

The data show clearly that there is significant variation in the size of civic crowdfunding projects, shown by the high standard deviation of project sizes. The amount raised varies a similar amount, since the amount campaigns raise is conditioned by their goal amount, and on most platforms it is possible, though less common, for campaigns to raise more than their target amount, often called *overfunding*. The highly variable scale of expected and actual activity means that the number of funders participating in projects also varies significantly, from zero to 3,175.

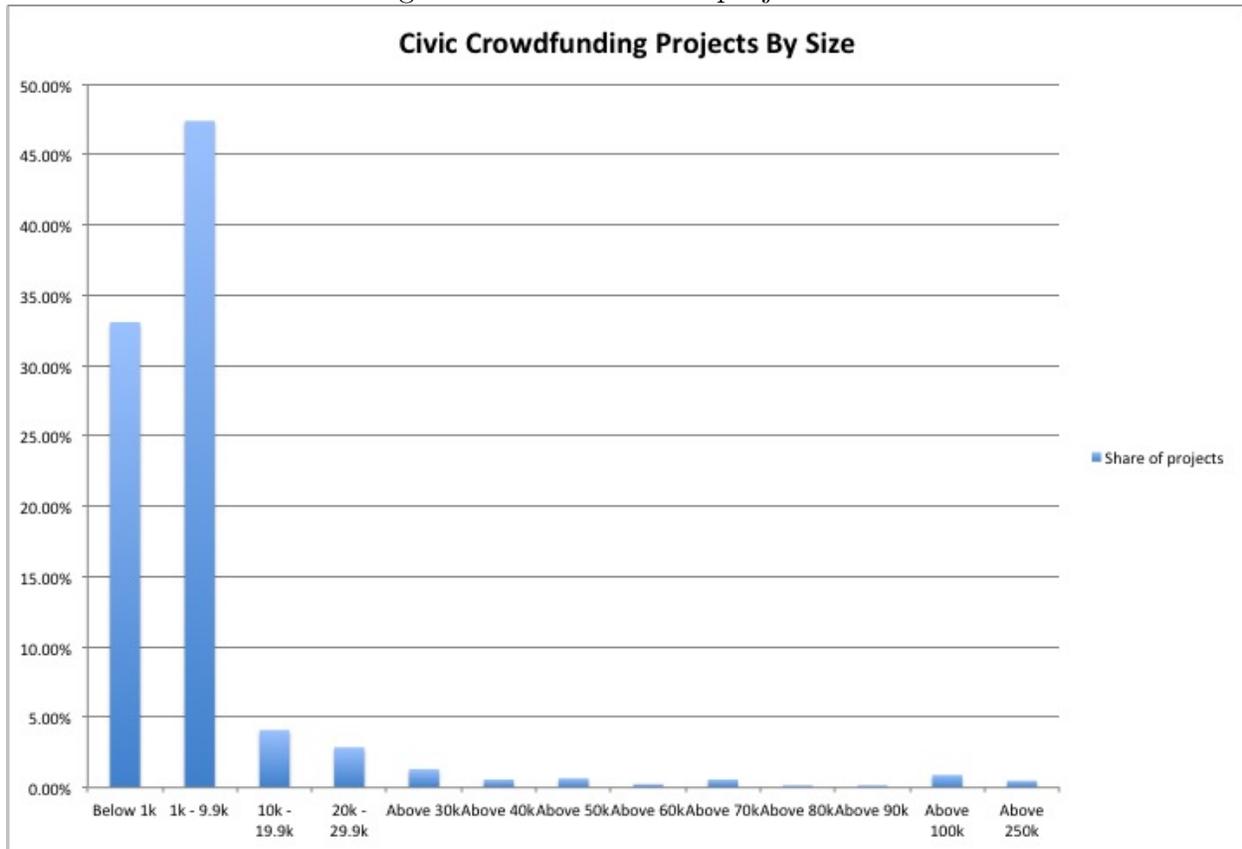
This distribution is not all that surprising, given that large open online markets commonly produce Pareto, or “Long Tail” distributions (Clauset, Shalizi, and Newman, 2009). Agrawal, Catalini, and Goldfarb (2013) 2013 find that crowdfunding platforms tend towards highly skewed markets, where a small number of projects account for the vast majority of funds raised. In the case of the civic crowdfunding dataset, the top ten projects by value (0.8% of the total number of projects) accounted for 29% of the total revenue raised (\$3.2M). The civic project data shows two remarkable similarities in distribution to Kickstarter projects across all categories: 11 percent of civic projects have raised more than \$20,000; while 12.5% (7,295) of Kickstarter projects have done so. Meanwhile the same share of Kickstarter and civic projects — 2% — have raised above \$100,000.<sup>16</sup>

Figure ?? and Table ?? show the distribution of civic crowdfunding projects by value.

The great disparity in project sizes is an indicator of the immaturity of the civic crowdfunding market. It has been proven many times as a means of delivering small-scale outcomes, and on a few very visible occasions it has been applied to large ones, but participants are yet to apply it to the full range of possible projects. A very large size distribution also suggests that competition between civic crowdfunding projects

<sup>16</sup>1,181 Kickstarter projects and 14 civic projects have raised above \$100,000. Figures published by Kickstarter on March 22, 2014.

Figure 3: Distribution of project sizes



for attention and resources may become a challenge, since larger projects are likely to be much better resourced and therefore able to attract a disproportionate amount of media attention, and therefore potential donor attention.

## 6 Types of projects and the goods they produce

Does this disparity in size, and the large number of relatively small projects, reflect the abundance of a particular type of project? To analyze the types of work being performed by civic crowdfunding, I applied a 14-member typology to CP projects.<sup>17</sup>

As Table ?? shows, most projects appear in typically lower-cost categories. The most common Garden / Park project is a community garden for which the project owners are attempting to raise funds for gardening supplies such as soil and seeds, and therefore does not require large capital investment. Alongside lower cost projects, the data also show a bias towards temporary or less permanent projects. For instance,

<sup>17</sup>The development of the typology and the coding of projects in this section was carried out as part of the research for Goodspeed and Davies (2014), which contains its own analysis of the dataset with respect to the planning process. One project in the set, Discover NYC Pop-Up Cafes on ioby, could not be categorized or coded due to an HTTP Redirect Loop. Its size and amount raised were given in the ioby dataset.

Table 6: Distribution of crowdfunding projects by size

Project size	Share of projects	Civic Platforms	Generic Platforms	Total Projects
Below 1k	33.09%	293	112	405
1k - 9.9k	47.39%	158	422	580
10k - 19.9k	4.08%	18	32	50
20k - 29.9k	2.86%	3	32	35
Above 30k	1.31%	2	14	16
Above 40k	0.57%	1	6	7
Above 50k	0.65%	2	6	8
Above 60k	0.25%	0	3	3
Above 70k	0.57%	4	3	7
Above 80k	0.16%	1	1	2
Above 90k	0.16%	0	2	2
Above 100k	0.90%	3	8	11
Above 250k	0.49%	4	2	6

Table 7: CP Project Categories

Category	Count	%	Mean Goal
Garden / Park	140	28.6%	\$14,165
Event	70	14.3%	\$8,042
Education and Training	56	11.4%	\$5,179
Food	35	7.1%	\$3,060
Environment and Wildlife	28	5.7%	\$1,516
Maintenance and Renovation	26	5.3%	\$43,365
Public Art and Monuments	24	4.9%	\$28,752
Technology	21	4.3%	\$30,910
Organization	18	3.7%	\$4,464
Facility	15	3.1%	\$97,585
Streetscape	13	2.7%	\$23,220
Media	20	4.1%	\$3,749
Other	11	2.2%	\$17,690
Sport	6	1.2%	\$2,876
Mobility	5	1.0%	\$146,015

Table 8: Goods Produced by CP projects

Type of Good	Count	%
Public Good	242	49.5%
Private Good	104	21.3%
Club Good	89	18.2%
Common Pool Resource	53	10.8%

if we make the assumption projects in the events, education and training, food and media categories are short-term in focus (181 projects in total), we can conclude that at least 38% of projects are short term interventions.

The task of categorization of projects (See Table ??) was often challenging. In some cases project owners' intentions for spending the money they raised are not entirely clear: some organizations outline their mission and a range of activities, such as education and outreach, events and specific projects. In these cases, projects were categorized "organization" to reflect that the funds would likely be used, at least in part, to fund running costs. In other cases it was necessary to decide on the primary focus of a project: for instance, several of the maintenance and renovation projects were focused around a specific event, such as a cleanup day. They were coded as Maintenance and Renovation rather than events since the principal outcome of the project is presumed to be the maintenance and renovation of a specific area or monument, not the fact of the gathering itself.

Understanding the type of activity or good that civic crowdfunding projects produce (See Table ??) is critical to analyzing their locations on the public-private spectrum. To address this question, each of the CP projects was coded along the two classic economic dimensions of goods: whether the good being produced is excludable or non-excludable, and whether the good is rival or non-rival.

The data suggest that civic goods are typically non-excludable, since the majority of projects are either classic public goods or common pool resources. Nevertheless, the high proportion (20%) of private goods indicates that a large number of users of civic crowdfunding platforms believe that the *civic* quality of a project relates to the overall goals of the organization / person involved, rather than the production of a specific type of good, since many of the private good projects involved fundraising for the maintenance or organizational costs of non-profit organizations.

The process of coding which type of good was being produced by a project was not straightforward. For example, the accessibility of gardens and parks to the general public or lack thereof (their excludability) was not always clear from the project pages. Gardens with clearly limited audiences, such as gardens created within schools, were categorized as club goods while gardens that offered a reasonable expectation of public access were coded as public goods. Meanwhile, many of the Education and Training projects have a broader civic mission that may involve a public good, but the training programs themselves are in practice are both excludable and rival, since they have limited capacity and are often recruiting directly. Therefore it is important to make a distinction between the specific good being funded in the campaign and the broader mission of the organization, as suggested above.

Table 9: The matrix of goods produced by CP projects

Private Good (21%)	Common Pool Resource (11%)
Club Good (18%)	Public Good (50%)

Below are four example cases of each type of good.

Private Good: Somerville Mobile Farmers' Market (Citizinvestor). The City of Somerville raised \$3,240 in December 2013 to fund matching grants for low-income families at two housing projects to spend at a mobile farmers' market (Citizinvestor, 2012). The scheme could not be funded using tax revenues due to state law restricting the spending of tax dollars on excludable goods, and had previously been funded by a corporate donation. Due to high demand for the scheme, the donation was spent and consequently the city decided to experiment with a crowdfunding campaign to meet the additional demand. Since the grants are only available to particular households (they are excludable) and they are finite in number, and therefore rival, the scheme is a private good.

Common Pool Resource: Pollos del Pueblo (ioby). Cypress Hill Local Development corporation, a registered non-profit, raised \$6,286 from 71 donors in July 2012 to fund the creation of a community chicken farm in Brooklyn, New York, from which the group distributed free eggs to local residents and visitors to promote healthy eating (IOBY, 2012b). The eggs are a natural example of a common pool resource, since they were provided to any member of the public seeking them, but were finite in number, and therefore rival goods.

Club Good: Paint the Town Green (Neighbor.ly). Give us a Gig, a non-profit organization, raised \$11,136 from 111 backers in September 2012 to fund the expansion of Google Fiber to underserved neighborhoods in Kansas City, MO and KS (Neighbor.ly, 2012). In the context of the campaign, access to fiber was only supplied to the targeted neighborhoods, and therefore the good being produced (fiber access) was excluded from residents from elsewhere in the city. The good was non-rival since, once provided, all households in those neighborhoods could use the service without reducing their neighbors' ability to do so.

Public Good: Make Mansfield YOUR hotspot! (Spacehive). Mansfield Business Improvement District, a public-private partnership between the town of Mansfield UK and the local business community, raised \$50,484 from 27 funders in January 2013 to provide a free public WiFi internet network (Spacehive, 2012). Access to WiFi was open to residents and visitors to the town, and the proposed capacity was theoretically infinite, therefore the good being provided was public.

## 7 Replicability

While the CP data shows a tendency towards low-cost, temporary public goods, there is some evidence of emerging replicability of crowdfunding as a strategy, evidenced most prominently in three ways: 1) a single group using the technique repeatedly for different types of projects in the same geographic community, 2) a single group or individual crowdfunding repeated iterations of the same project (usually an event) over several years, and 3) groups crowdfunding projects in different locations based on a common model. I derived the following observations on projects with similar names, cross-checking to verify whether the group or individual organizing the campaign was consistent. In the CP data I found 17 examples of projects or groups that had used crowdfunding twice, five examples of three-time crowdfunding users and one example of four-time usage.

The most common method of replication was annual events held over consecutive years. Going Green is a free environmental conference held in Queens, New York, which has met its fundraising target on ioby every year since 2011, raising \$443.00, \$2,038.00 and \$1,000.00 respectively. Hike the Heights, a sponsored hiking event to promote walking in Brooklyn, met its targets of \$1,502.00 and \$2,493.00 in 2011 and 2012, and in 2013 raised \$2,640.00 of a \$4,139 project (the campaign is still marked as open on the ioby site).

Other campaigns used replication to expand a project or create it in phases. The Java Street Garden in Brooklyn, New York, had two successful phases of crowdfunding: the project met its target of \$625 in its first campaign, and more than doubled its second campaign target (\$472), raising \$1,027. The Garden is currently seeking \$21,809, but has not yet recorded any donations according to the ioby site. Sustainable Flatbush, also in Brooklyn, funded a garden (raising \$1,090), a compost scheme (\$421) and is in the process of fundraising for a herb garden (\$2,772 raised of \$3,104 as of March 22).

There was only one clear example of a project using more than one platform for a similar purpose: The Brownsville Student Farm raised \$24,282 on Kickstarter in November 2011, but was unable to complete the construction as planned, and in October 2012 used ioby to raise \$5,339 to finish the project.<sup>18</sup>

## 8 Projects by location

In the final phase of the data analysis, I coded both CP and GP projects by city and state location (Table ??). Close to two-thirds of the projects (768, or 63%) were based in the United States. For the purposes of comparison with population data and to enable an exploration of the geographic distribution of civic crowdfunding, the following analysis will focus on US-based projects.

The states that provide the greatest number of projects are New York, California, Illinois, Florida and Oregon (Figure ??). The dominance of New York-based projects (49.5% of US projects) is not surprising, since both ioby and Kickstarter are based in

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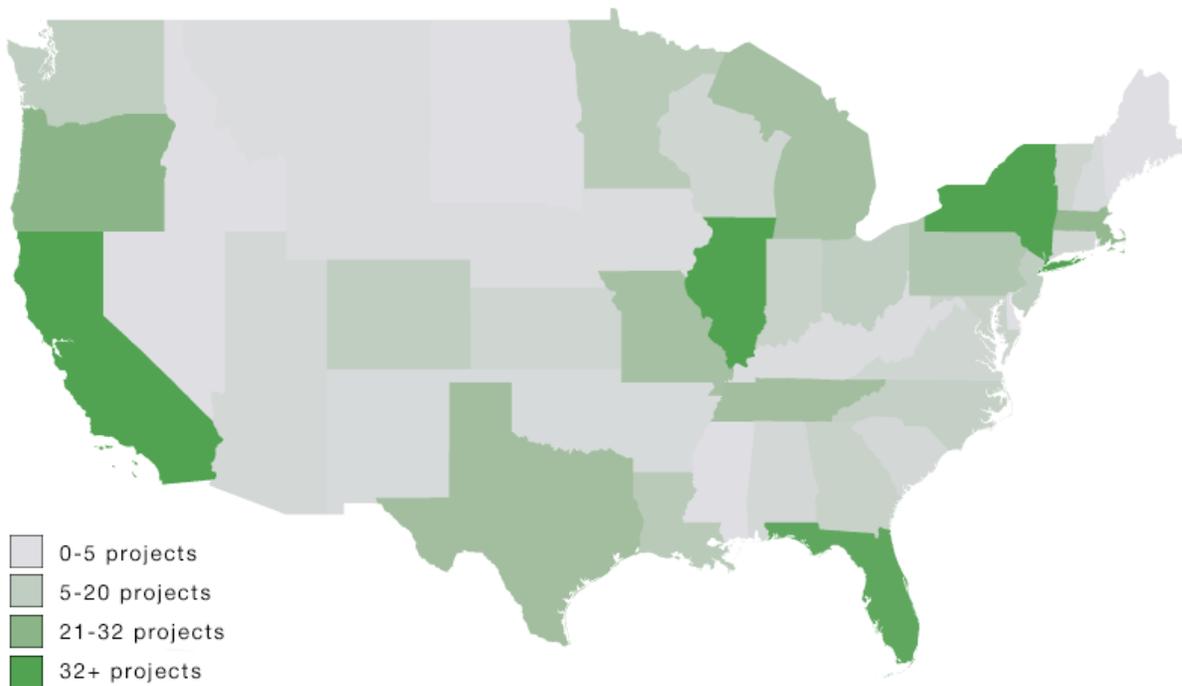
<sup>18</sup>Brownsville Student Farm Project, Kickstarter. <https://www.kickstarter.com/projects/89439509/brownsville-student-farm-project>. Brownsville Student Farm, ioby. <https://ioby.org/project/brownsville-student-farm>.

State	T1	T2	Total	Share of US
NY	313	67	380	49.48%
CA	16	57	73	9.51%
IL	5	28	33	4.30%
FL	25	5	30	3.91%
OR	7	14	21	2.73%

Table 10: US civic crowdfunding projects by state

the city, and ioby tends to recruit projects for its platform. This might also explain the performance of Florida, since ioby has a secondary headquarters in Miami. The remaining states provide 30% of the projects, led by Massachusetts, Tennessee, Texas, Missouri, Michigan and Pennsylvania.

Figure 4: Indicative map of projects by state

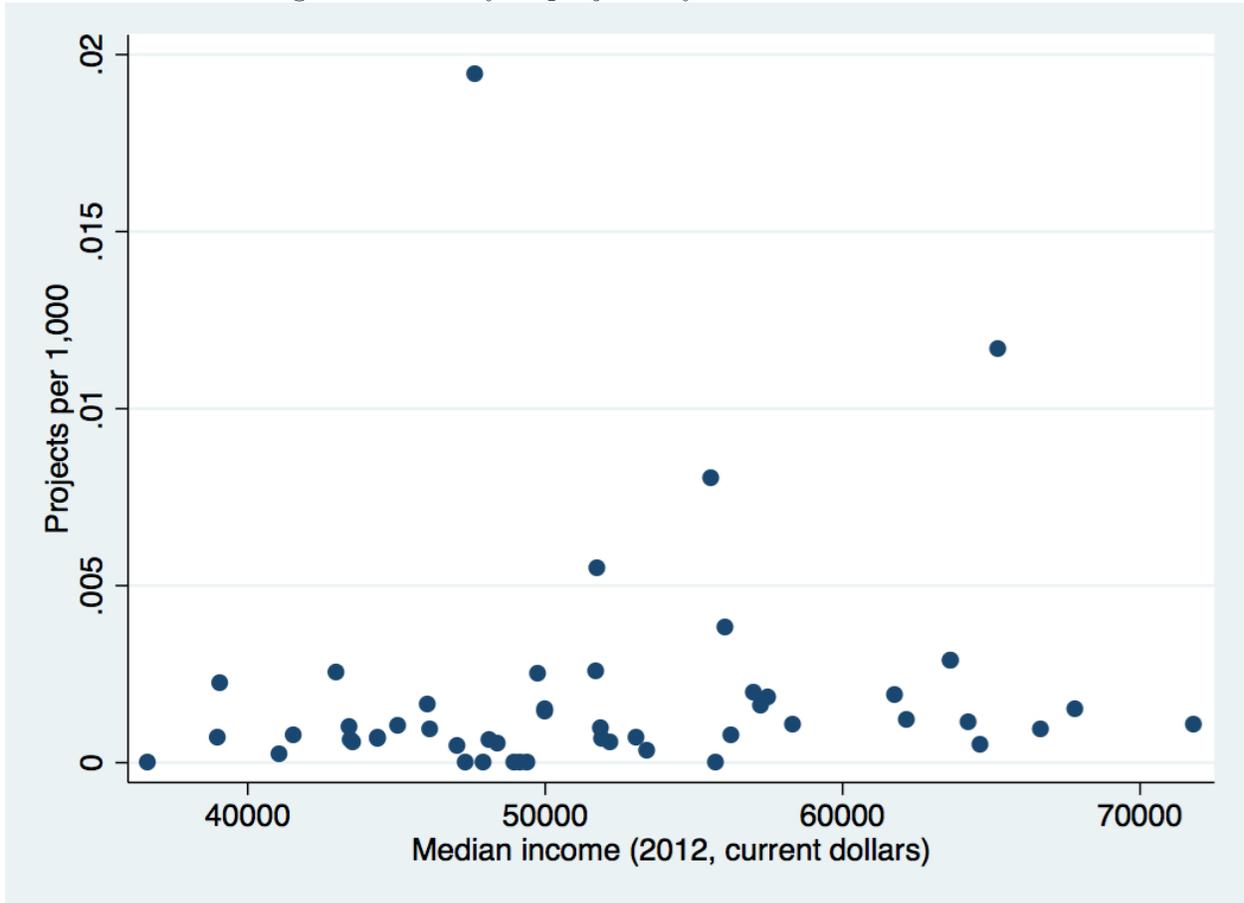


This clustering in headquarter cities is also borne out by comparisons with state median income and population data. Neither population nor median income is a strong determinant of the density of projects in a given state, as Figures ?? and ?? show.<sup>19</sup>

The states that have the five densest areas of civic crowdfunding activity, as indicated by number of projects per capita, are New York, DC, Vermont, Oregon and Rhode Island (Table ??). Four of the five states have a median income of above the

<sup>19</sup>Median household income 2012, current dollars, taken from Median Household Income by State - Single-Year Estimates (<http://www.census.gov/hhes/www/income/data/statemedian/>).

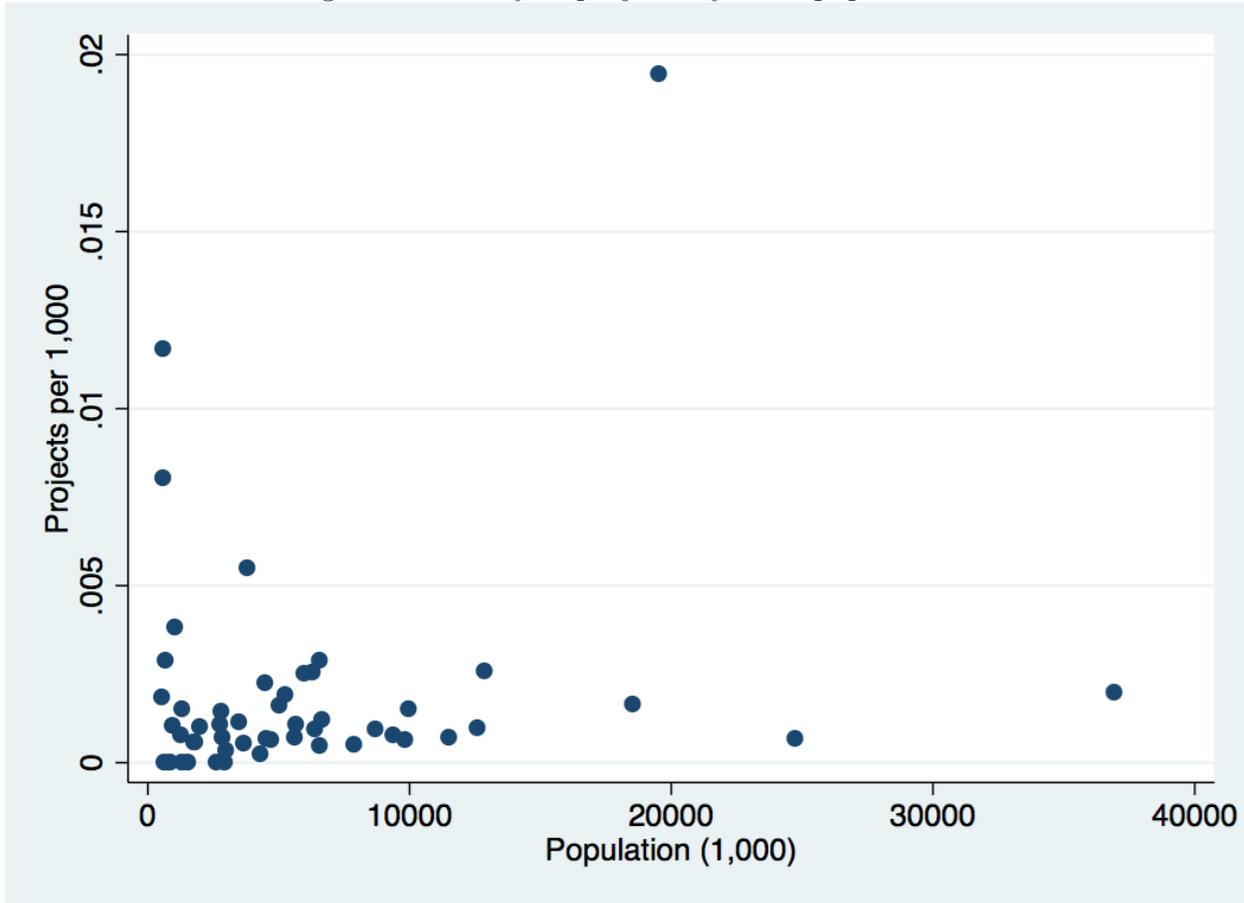
Figure 5: Density of projects by state median income



2012 national average of 51,017. Nevertheless, the number of data points for the majority of states is too small to draw strong conclusions regarding the relationship between the state a project is located in and the demographic profile of the state.

The dataset does not contain sufficiently granular location information to enable a mapping of all T1 and T2 projects by neighborhood, and therefore to allow a thorough analysis of the demographic profile of project locations. Goodspeed and Davies (2014), analyzing a subset of the ioby projects in the complete dataset, find little evidence of a link between the presence of ioby projects and lower median income, although the analysis shows that the percentage of residents with an income below the poverty line is slightly higher (20.2% compared to 18.3%). Internal research by Citizinvestor finds that the median household income in the neighborhood in which a project occurs “has little to no bearing on the project’s chance of success” on the platform, although the research does not give details on the overall distribution of projects by median household income (Citizinvestor, 2014).

Figure 6: Density of projects by state population



## 9 The typical civic crowdfunding project

Using what we know about the median CP project — that it seeks to raise \$2,099, is most likely a park or garden project, attracts an average donation of \$58.51 and produces either a public or club good — it is possible to describe the most typical civic crowdfunding project using a real example. For this discussion I have chosen “Philadelphia’s Mill Creek Urban Farm”, a project on ioby that raised \$2,039 from 45 donors in March 2012 (IOBY, 2012a).

Four aspects of the campaign mark it out as a typical example of those found in the dataset: the fact that the project occurs in a major city (Philadelphia), the campaign’s goal of producing a club good, Mill Creek’s clearly articulated and locally-focused civic mission and its established history as a community organization.

The principal good produced by the campaign is the farm stand, which is a club good since it is excludable (the food is not given away for free). There are also other secondary goods being produced. The campaign text describes using donations to fund four linked activities: operating a farm stand, buying supplies for the stand, training apprentices to run the stand and organizing a youth leadership program. It seems

State	Total	Share (US)	Pop (1,000)	Projects / 1,000	Median income	vs Nat Median
NY	380	49.48%	19,541	0.019446292	47,680	-3,337
DC	7	0.91%	600	0.011666667	65,246	14,229
VT	5	0.65%	622	0.008038585	55,582	4,565
OR	21	2.73%	3,826	0.005488761	51,775	758
RI	4	0.52%	1,053	0.00379867	56,065	5,048

Table 11: The densest US states for civic crowdfunding by median income profile

reasonable to conclude that the farm stand was the principal good being produced and funded; it is possible that the organization could have funded the training program as a separate project, given education and training programs were the third-most popular project category in the dataset.

The project makes its social justice mission and interest in economic redistribution very clear in the campaign materials. Its appeal is also very locally-focused to residents of Philadelphia:

Our neighborhood farm stands provide fresh, organically-grown produce to an under-served community that has otherwise limited access to healthy food. Local residents can buy the food at affordable, below-market prices, and we are also the only stand in the area that accepts Farmers’ Market Nutrition coupons and Supplemental Nutrition Assistance Program (SNAP) benefits.

Furthermore, the project page highlights the problem of vacant lots in Philadelphia and the issue of “food deserts” — neighborhoods lacking access to fresh food — and in the section “Why We’re Doing It”, describes its ideal that “local communities work together to build an environmentally and economically sustainable urban food system.” This suggests the primary focus of the campaign is on the local communities that would participate directly in the creation of that food system, i.e. the communities of Philadelphia.

Finally, Mill Creek’s ability to raise the funds seems to be at least partly contingent on the fact that it is a well-established non-profit with organizational structures. It was first registered as a 501(c)(3) organization in 2005 and has a five-member board of directors, one of whom is a professor. In 2012 the group sold \$6,000 worth of fresh produce to 665 customers, and worked with 600 volunteers who gave a total of 2,000 hours of labor to the organization. Therefore the organization was likely well practiced in the types of organizing activities that would have been instrumental to a successful crowdfunding campaign.

The fact that Mill Creek was started by a non-profit organization with an eight-year track record raises the question of whether crowdfunding is most likely to succeed when used by established groups or whether it can provide a means of organizing and a pathway to funding entirely new projects. Civic crowdfunding platforms often suggest that their goal is to be transformative by engaging new audiences in community-based activity. In much the same way that civic crowdfunding aspires to large-scale projects but currently delivers smaller-scale change, this goal seems yet to be fully realized — although there are examples of groups becoming involved in community-based work

for the first time through a crowdfunding campaign.

## 10 Problems with the data

The process of collecting the data described above revealed that there are significant knowledge gaps due to the lack of reliable and consistent project data across platforms. First, the dataset was assembled through a combination of web crawlers and individual requests made to platforms. None of the platforms was willing to grant access to a functioning API, and in most cases this was due to the site’s developers not having built an API, even for internal use. Data collected through web crawlers was vulnerable to changes in sites’ page structures — a problem that arose three times during data collection — and the process was much slower overall than consuming an API.

In the civic crowdfunding space, where platforms are keen to establish their credibility and provide high quality, transparent data to institutions and communities, it would be advantageous for platform owners to create APIs to allow properly structured access to project data. Platforms could determine the level of data to make accessible to the public and to researchers, although public agencies should demand that projects that involve public funding be subject to a high level of transparency, as is consistent with existing policy in most municipalities.

In several cases the data published on the web by platforms later proved to be incomplete or incorrect. For instance, in some cases, unsuccessful projects were found to have been deleted from websites, while in others, successful projects were found to be incorrectly indexed following completion. Location information for projects was only available at the city level except in the case of ioby, meaning that detailed geographic analysis of projects was not possible. In most cases it was impossible to determine the exact block location of a project even after reading all the published campaign material. Measures to improve the quality of platforms’ published data would be an invaluable contribution to research and participation in civic crowdfunding (**davies’need’2014**). Furthermore, understanding how crowdfunding campaigns are operating, and the impacts they are having on community organizing and civic engagement are in many of these cases only possible through participant interviews and close readings of campaign materials. Combining these insights with quantitative approaches will enable us to move in the direction of broad and deep understanding of crowdfunding, towards what Tricia Wang calls “thick data” (Wang, 2013).

## 11 Conclusions

The compiled dataset and the subsets of it discussed in this paper show that there is an emerging “typical” crowdfunding project, and that it tends to be a small-scale garden or park project in a large city, and likely produces a public good. It is also notable that the average civic crowdfunding project is more likely to be successful than a crowdfunding project in another category, such as music or film. However, it is also clear that there is a very wide spectrum of civic crowdfunding project sizes, types and experiences. While there is no conclusive evidence to suggest that civic crowdfunding

is more likely to serve underserved or wealthier communities, spatial analysis shows that the distribution of resources and attention is extremely unequal across the United States. While certain cities have begun to build a base of organizations that are familiar with civic crowdfunding, some of whom have been able to use it successfully more than once, the vast majority of the country has not yet experimented with civic crowdfunding in its contemporary form. We can also observe that the specialized civic crowdfunding platforms have yet to build the same following that Kickstarter or Goteo has. This has led to clustering of projects around the cities in which platforms are headquartered, rather than a generalized spread of the concept.

While these distributional tendencies may be neither surprising nor troublesome in a market for consumer goods, they have political and ethical implications for civic crowdfunding actors endorsing the idea that the field can serve the interests of a broad public. As more municipal governments engage with civic crowdfunding as a means of incubating community-led projects, and in some cases, as a new method of disbursing discretionary investments, more robust analysis of the field will be required to support the effective application of civic crowdfunding. Since the analysis reveals significant gaps in platform data that impair that work, it will become incumbent on participants to highlight, and on platforms to address, issues of data quality, transparency and accountability.

From the point of view of community members, civic crowdfunding remains too new to be seen as a natural part of participating in one's community. Currently it is a very intentional form of participation, and is not an ambient feature of the participatory landscape. In the future, if the density of projects increases, it may be possible for individuals to browse for projects in their community and use crowdfunding sites as a means to source opportunities to contribute to local projects, either as a donor or volunteer. In its current state, civic crowdfunding offers a useful snapshot of the activities of many existing small-scale non-profits and points to the emergence of new ad-hoc groups seeking to perform similar work, but does not in itself seem to encourage longer-term engagement. It may well be a highly productive research topic to follow the longer-term impact of projects on the attitudes of residents in crowdfunding project locations to their neighborhood, but that work is outside the scope of the data collected.

The typical civic crowdfunding project as described in this paper also does not serve to illustrate the ambitions of the field, and particularly platform owners. While the Mill Creek case (see p. ??) is a coherent example of an existing organization leveraging crowdfunding to support independent public service work, it does not speak to the potential of civic crowdfunding to create new links between the crowd and government, or to fund large-scale public goods that might otherwise have been provided by government, with the assistance of the private and prominent non-profit organizations. These ambitions are far from being realized in the majority of typical civic crowdfunding projects, but they are present in a minority of cases.

## 12 Appendix: Data Collection and Dataset Descriptions

This section describes the datasets used in this project, collection methods and known issues. Each dataset is referred to by a descriptive label and an identifier, CCDF(x).

### Compiled Civic Crowdfunding Dataset (CCFD1)

The Compiled Civic Crowdfunding Dataset contains projects collected from the seven platforms studied (Catarse, Citizinvestor, Goteo, ioby, Kickstarter, Neighbor.ly and Spacehive) between June 2012 and March 23, 2014. Data was collected using scripts written in Python and run on MIT servers and my local machine. For verification purposes, data was sought from all platforms, and was successfully obtained from ioby, Neighbor.ly and Spacehive. Manually obtained data was in most cases used to add missing or deleted projects to the dataset. The dataset includes projects that were both open and completed at the time of the final data collection, on March 23, 2014.

The following attributes are recorded for each project in CCFD1.

- Project Name
- Location
- Project Goal
- Amount Raised
- Number of Funders
- Funding Open (True / False)
- Summary text

From these fields, two further attributes were calculated, Average Pledge (mean) and Percentage Raised, to record projects that exceeded their goal. See ??, “??”, p. ??.

### Civic Platform Projects Dataset (CCFD2)

CCFD2, Civic Platforms Dataset, is a subset of the Compiled Civic Crowdfunding Dataset that includes only projects from the four civic platforms (CP): Citizinvestor, ioby, Neighbor.ly and Spacehive. For dates of collection and reliability information, see CCFD1 above. See ??, “??”, p. ??. The typology of CCFD2 projects with respect to activity type, good produced (“??”, p. ??) and location (“??”, p. ??) was carried out as part of the research for Goodspeed and Davies (2014) and is described further in that paper.

### Generic Platform Projects Dataset (CCFD3)

CCFD3, Generic Platforms Dataset, is a subset of the Compiled Civic Crowdfunding Dataset that includes only projects from the three generic platforms (GP): Catarse, Goteo and Kickstarter. Catarse projects were collected from the site’s “Urbanism” category, Goteo projects were collected from the “Social” and “Cultural”, and Kickstarter projects. See ??, “??”, p. ??.

## **Dated Projects Dataset (CCFD4)**

CCFD4, Dated Projects Dataset, contains 271 projects from CCFD2 and the 429 Kickstarter projects from CCFD3 for which accurate date information could be obtained. For many of the projects in CCFD2, no start or end date was published on the platform’s website. In some cases dates were given in the data supplied directly by the platforms themselves. In other cases, I derived estimated project activity dates by collecting the dates of comments published on project pages. In most cases this allowed an estimate of project start and end dates. In cases where the dates of a project’s fundraising campaign, the project was excluded from CCFD4 to avoid errors in relative growth data. See ??, “??”, p. ??.

## **Case Study Backers Dataset (CCFD5)**

CCFD5, Case Study Backers Dataset, contains data concerning the backers of the three case studies described and was obtained from the platforms directly — Spacehive, Neighbor.ly and Catarse. The data was supplied in anonymized form and was derived from platforms’ payment processing records and user databases. All subsequent analysis was conducted independently for the purposes of this research project. No further verification of the data was sought.

## **Discourse Dataset (CCFD6)**

CCFD6, Discourse Dataset, is an earlier subset of 274 projects in CCFD1 that was collected and analyzed on December 5, 2012. Using the “Summary Text” field, projects were tagged for explicit references to four themes. 1) place-based community, 2) interest-based community, 3) redistribution of wealth between communities, and 4) shortfalls or reduction in public spending. One day later, I repeated the tagging process on the same data for consistency. See ??, “??”, p. ??.

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