Kickstarter Versus Indiegogo

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An analysis of crowdfunding project success across two major platforms

Crowdfunding platforms allow users to raise money for their projects by collecting small donations from anyone on the internet. The following is an analysis (using R (https://www.r-project.org/)) of two of the most popular such platforms, Kickstarter (https://www.kickstarter.com) and Indiegogo (https://www.indiegogo.com). I'll be looking at how much money projects raise on each platform, and how that relates to their categories and funding goals.

The data

The data on Kickstarter projects (https://www.icpsr.umich.edu/web/NADAC/studies/38050/summary) used here come from the Inter-university Consortium for Political and Social Research. The Indiegogo project data (https://webrobots.io/indiegogo-dataset/) are from Web Robots, a company that uses bots to scrape websites.

I also made use of the International Monetary Fund's data on exchange rates (https://www.imf.org/external/np/fin/ert/GUI/Pages/CountryDataBase.aspx) to convert currencies into US Dollars.

Data processing

Here's a look at the data:

```
## [1] "Indiegogo Data"
```

```
## Rows: 32,384
## Columns: 13
## $ category             <chr> "Wellness", "Wellness", "Wellness", "Wellness", "~
## $ close_date           <date> 2022-12-10, 2022-09-19, 2022-12-29, 2021-05-22, ~
## $ currency             <chr> "USD", "USD", "AUD", "USD", "USD", "USD", "USD", ~
## $ funds_raised_amount  <dbl> 770, 15500, 20524, 27989, 637, 20, 100, 150, 5605~
## $ funds_raised_percent <dbl> 0.7700000000, 0.3100000000, 0.0820960000, 2.40380~
## $ open_date            <date> 2022-10-31, 2022-07-21, 2022-10-30, 2021-03-23, ~
## $ project_id           <dbl> 2781071, 2763309, 2778720, 2667683, 2751874, 2792~
## $ project_type         <chr> "campaign", "campaign", "campaign", "campaign", "~
## $ tags                 <chr> "[\"community\",\"family\",\"students\",\"food\"]~
## $ title                <chr> "Students for Students", "HUM Yoga & Barre", "JR ~
## $ goal                 <dbl> 1.000000e+03, 5.000000e+04, 2.500000e+05, 1.16436~
## $ raised_frac          <dbl> 0.7700000000, 0.3100000000, 0.0820960000, 2.40380~
## $ state                <chr> "failed", "failed", "failed", "successful", "succ~
```

```
## [1] "Kickstarter Data"
```

```
## Rows: 506,195
## Columns: 15
## $ raised_frac    <dbl> 0.00000000, 0.00000085, 0.00000010, 0.00000001, 0.00000~
## $ project_id     <dbl> 2137925650, 1501531085, 953415668, 1371386304, 17208427~
## $ category       <chr> "Film & Video", "Film & Video", "Technology", "Publishi~
## $ category_id    <dbl> 11, 11, 16, 18, 1, 13, 16, 16, 18, 11, 11, 18, 1, 1, 16~
## $ subcategory    <chr> "Science Fiction", "Fantasy", "Software", "Publishing",~
## $ subcategory_id <dbl> 301, 296, 51, 18, 22, 360, 16, 342, 323, 11, 298, 47, 1~
## $ open_date      <date> 2016-08-11, 2019-12-19, 2017-03-01, 2018-06-04, 2015-0~
## $ close_date     <date> 2016-10-10, 2020-02-14, 2017-03-22, 2018-07-05, 2015-0~
## $ currency       <chr> "USD", "USD", "MXN", "USD", "CAD", "USD", "USD", "USD",~
## $ goal           <dbl> 1e+08, 1e+08, 1e+08, 1e+08, 1e+08, 1e+08, 1e+08, 1e+08,~
## $ pledged        <dbl> 0, 85, 10, 1, 0, 1, 0, 56, 4, 1, 0, 3577, 115, 2, 10005~
## $ goal_usd       <dbl> 100000000, 100000000, 5219374, 100000000, 80610122, 100~
## $ pledged_usd    <dbl> 0, 85, 1, 1, 0, 1, 0, 56, 4, 1, 0, 3577, 115, 3, 10005,~
## $ backers        <dbl> 0, 4, 1, 1, 0, 1, 0, 6, 4, 1, 0, 27, 2, 2, 6, 2, 0, 1, ~
## $ state          <chr> "canceled", "canceled", "failed", "canceled", "failed",~
```

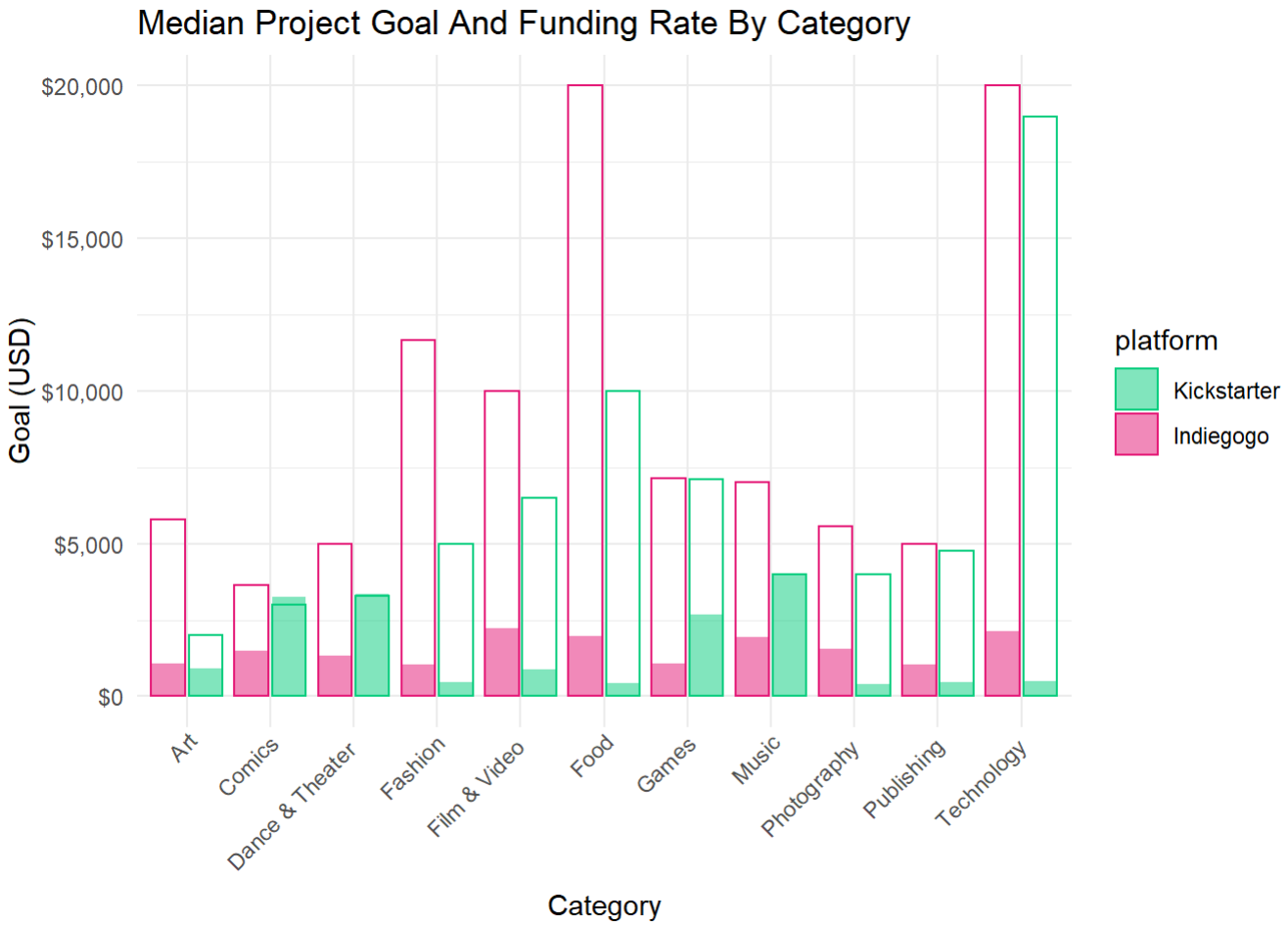
Some things to note here:

- The Indiegogo data set didn't list the funding goals for the projects. In most cases I could back-calculate this based on how much money they raised and what percent of their goal they raised; however, I couldn't do this for projects that raised absolutely no money. Those projects had to be excluded from my analysis.
- There are 30,000 projects in the Indiegogo data and a whopping 500,000 projects in the Kickstarter data. I'm not too worried about statistical power here.

Every project on these platforms has a category, like "Comics" or "Technology," and I wanted to compare the relative success of projects in these categories on the two platforms. However, Kickstarter and Indiegogo don't categorize their projects the same way, so I had to assign somewhat broader categories to each project so they could be compared.

Some categories on one platform didn't have a reasonable analogue on the other platform. This mostly happened with Indiegogo; they permit a wider array of projects, like community spaces and activism, which Kickstarter doesn't support. These projects were excluded from category comparisons.

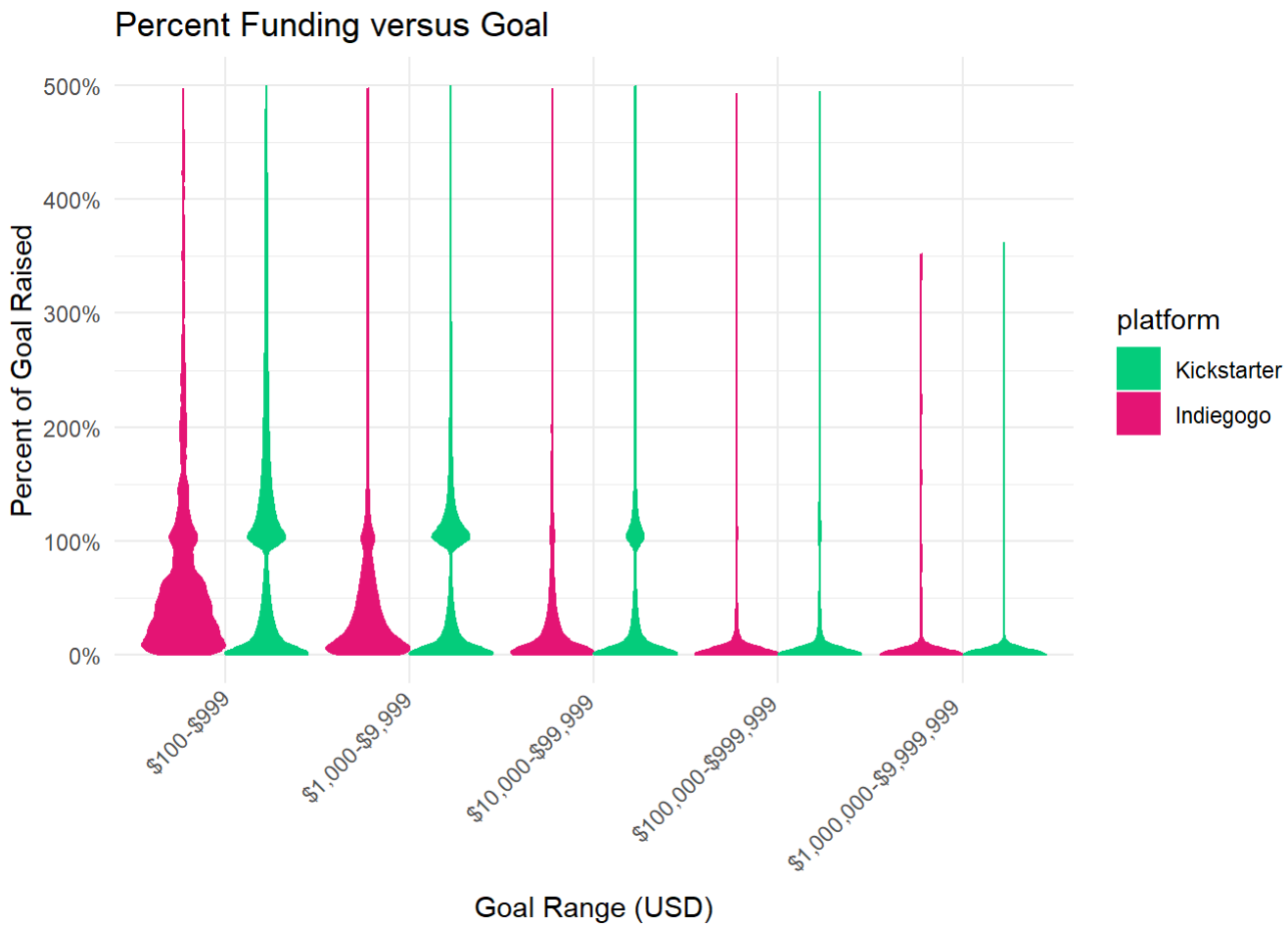
Exploration



This is a breakdown of project success by category. The bar outlines show the median funding goal for each category, and the fill represents the median percent funding for each category (for example, if the bar is all the way full, then the median project in that category met its funding goal). A few observations:

- Most projects do not meet their funding goal. This is especially true for projects with large goals.
- Smaller projects appear to fare better on Kickstarter, while larger projects raise more money on Indiegogo.
- Indiegogo projects are generally more ambitious; this is probably due to a difference in funding rules, which I'll get into shortly.

This tells us something about the average crowdfunding project, but we should look at the spread of values, too:



This violin plot shows the money that projects raised as a percent of their stated goal. The width of a shape varies in proportion to how many projects raised that percent of their goal.

We can see a few things here:

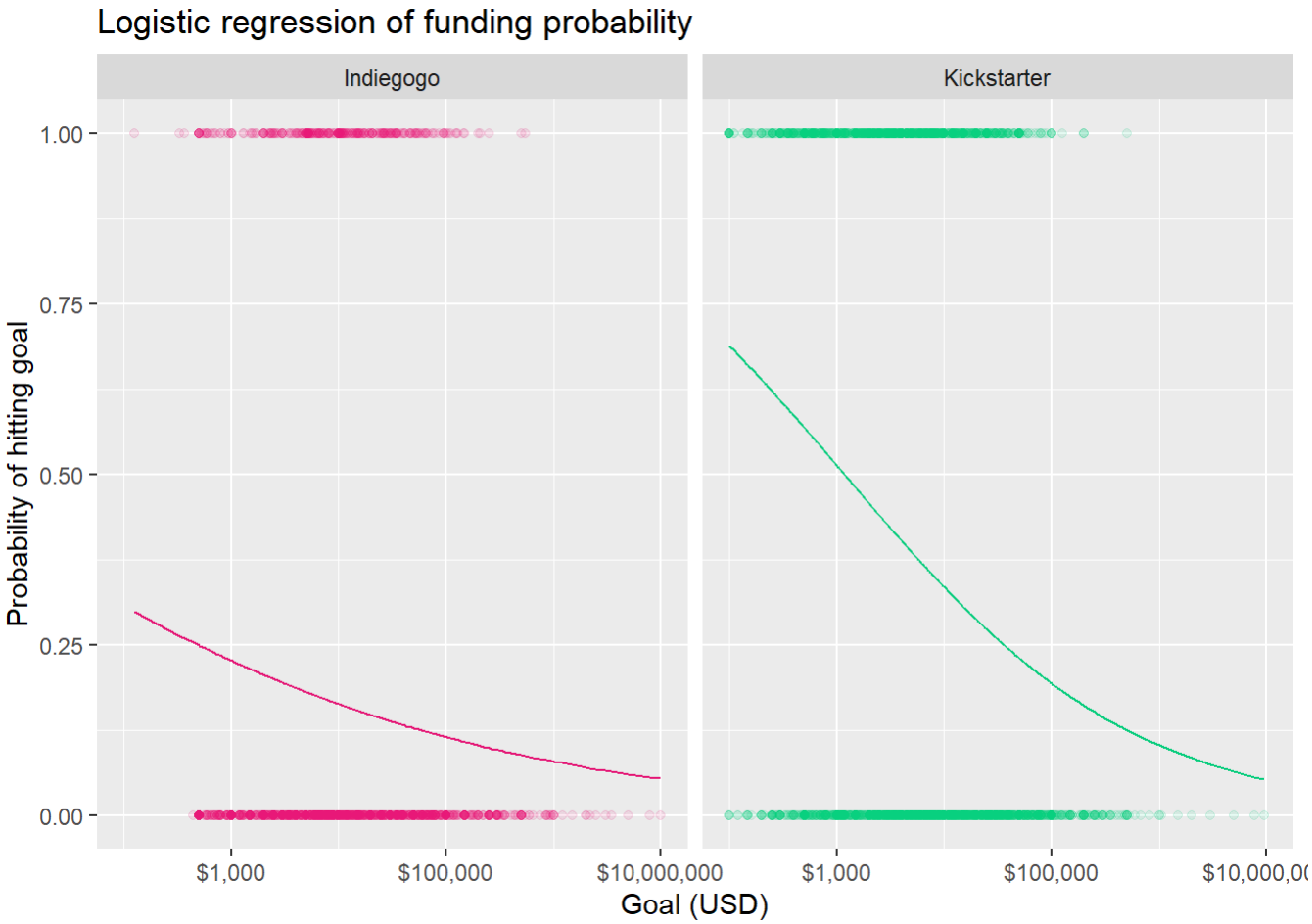
- Like the previous figure, this shows that most projects don't meet their funding goal. Here we also see that projects with higher goals hit them less often.
- The bulges at 100% show that many projects hit their goal exactly or go just past it. This pattern is more pronounced on Kickstarter, probably due to Kickstarter's all-or-nothing funding rule. On Kickstarter, if a project fails to meet its goal, the backers get their money back and the project receives *nothing*, so there's a strong incentive for a project to push towards its goal if it's close. Indiegogo has no such rule; projects keep whatever they raise.

Modeling

I wanted to create a model to predict how much money a project could expect to raise as a function of its goal. The challenge here was, as shown by the odd shapes in the violin plot, the funding rates of these projects don't follow any ordinary statistical distribution. I decided to build a two-part model. The first part estimates the chances of a project meeting its goal, based on the size of its goal, and the second part estimates how much money a project raises conditioned on whether it met its goal.

Chances of meeting the goal

I modeled the probability of a project hitting its goal using a basic logistic regression:



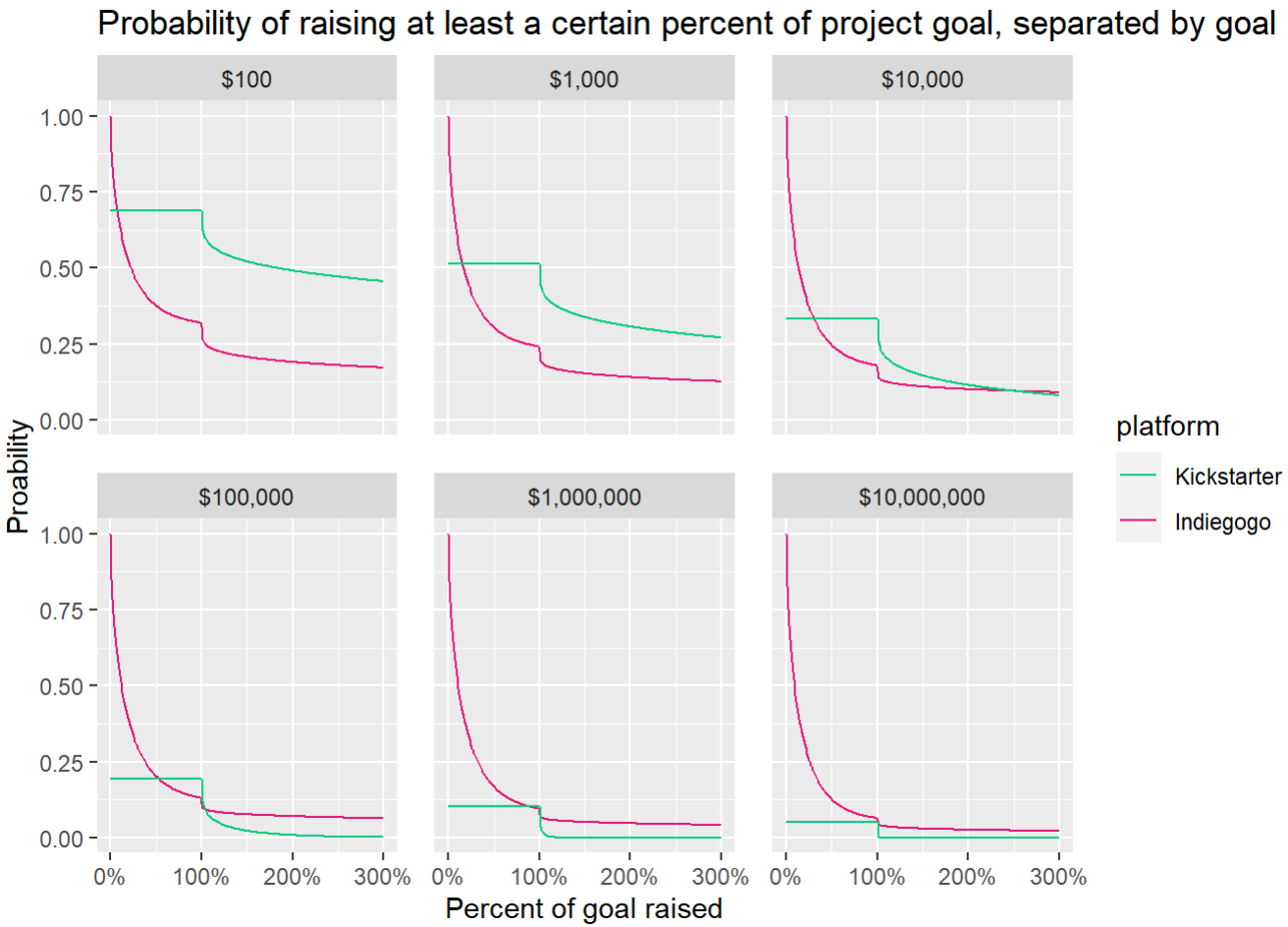
The lines show the estimated probability of a project meeting its goal, and the dots show a sample of the data. Dots at the top are projects that met their funding goal and dots and the bottom are projects that missed their goal. The fit here suggests that projects with low goals have much better odds on Kickstarter.

Money raised

The second part of the model predicts how much money a project will raise, based on whether or not it meets its goal and what that goal is. I did this with a more computationally intensive method involving some Bayesian statistics.

Synthesis

After generating both components of the model, I was able to make predictions about project funding:



This shows the probability that a project will raise at least a certain percent of its goal, with each panel being a different goal. The left sides of the Kickstarter lines are flat because of Kickstarter's all-or-nothing rule; if you don't meet your goal, you get nothing, so anything short of 100% is essentially the same.

According to this model, Kickstarter is much better for projects with goals under $10,000, and Indiegogo is better for projects with goals upwards of $1,000,000. For goals in the middle, Kickstarter is better if really need to hit your goal, but Indiegogo might be better if any amount of money is helpful.

Conclusion

In general, it seems that the amount of money a project raises has little to do with to its stated goal. Kickstarter projects can raise small amounts of money more consistently, but the platform’s all-or-nothing funding rule makes it much riskier than Indiegogo for projects with large goals.