Kickstarter Campaign Data Analysis Report

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1. Introduction

Kickstarter is an online fundraising platform that allows individuals and early-stage companies to crowd source their projects through user donations. This report analyzes Kickstarter fundraising campaigns dating from May 2009 to March 2017. The data is analyzed for possible trends in successful and failed campaigns based on campaign category, money goal, creation date, and backer count. Data set limitations are also discussed. A successful campaign is defined as the total amount of pledge money exceeding the goal amount.

In the following sections, these questions will be addressed:

1. Given the provided data, what are three conclusions we can draw about Kickstarter campaigns?
2. What are some limitations of this dataset?
3. What are some other possible tables and/or graphs that we could create?

2. Analysis

Question: Given the provided data, what are three conclusions we can draw about Kickstarter campaigns?
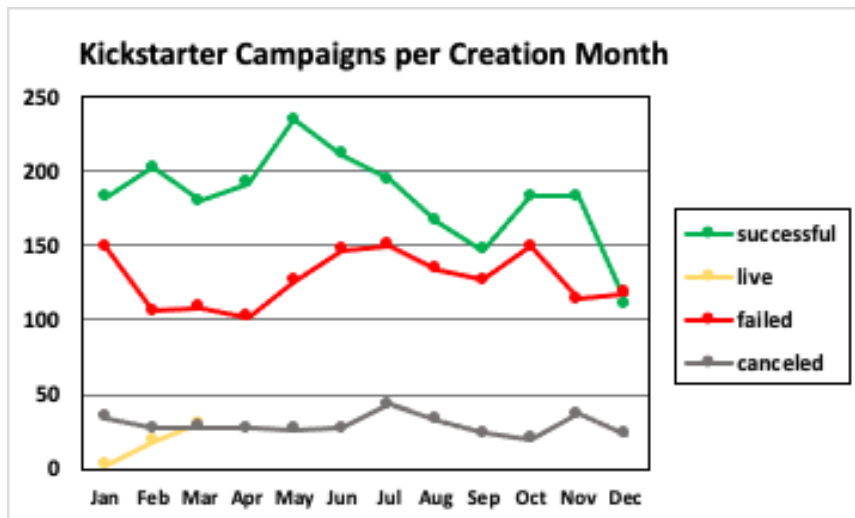
2.1 Campaign Outcome per Creation Month

Figure 1: Number of Successful, Failed, Canceled, and Live Kickstarter Campaigns per Creation Month across entire data set.

Figure 1 indicates that on average, independent of other factors like goal amount and category, a campaign is more likely to be successful in the months of February through June. The peak success rate is 60.6% in May, and the lowest success rate is 44.1% in December.

One potential cause of low campaign success rate in December is that individuals may be less likely to donate money near the holiday season. In December, many people are spending money on gifts for major holidays like Christmas. This would lead them to have fewer financial resources to devote to fundraising efforts.

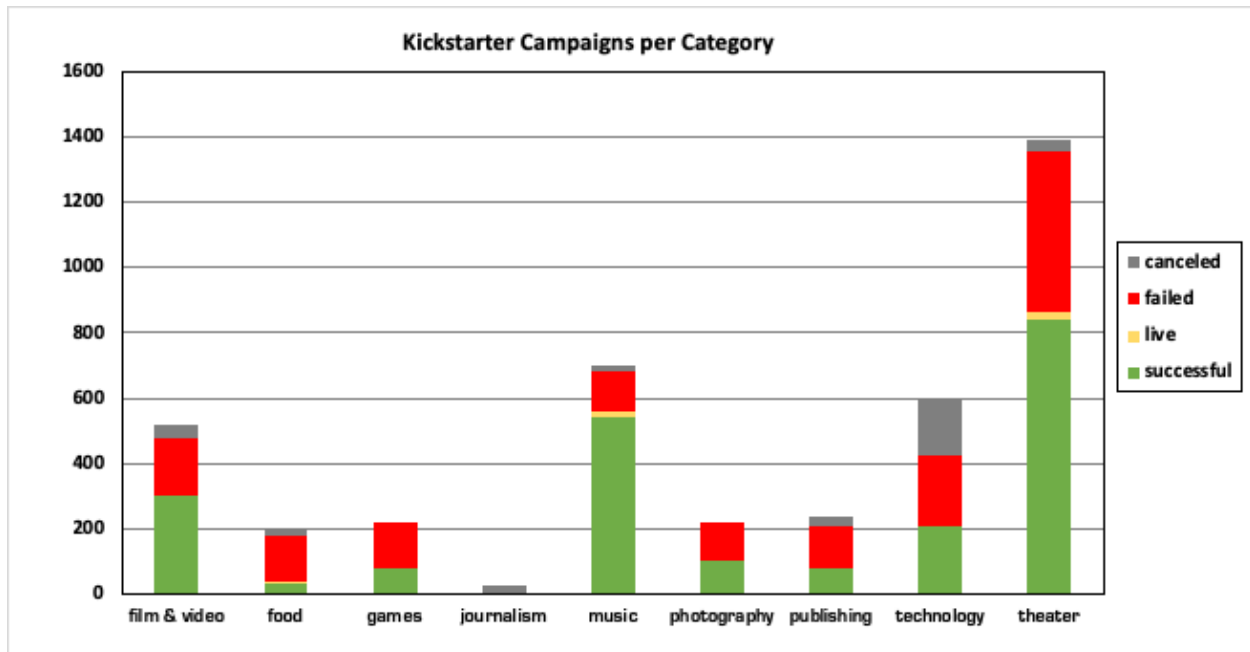## 2.2 Campaign Outcome per Category & Sub-Category

Figure 2: Number of Successful, Failed, Canceled, and Live Kickstarter Campaigns per Category across entire data set.

Figure 2 shows that the most frequent Kickstarter campaign category is theater. The greatest number of successful (839) and total (1393) campaigns are categorized primarily as theater. However, the music category holds the highest success rate of 77%. The food category holds the lowest success rate of 17%, although limited by small sample size of 200 fundraising attempts (4114 total).
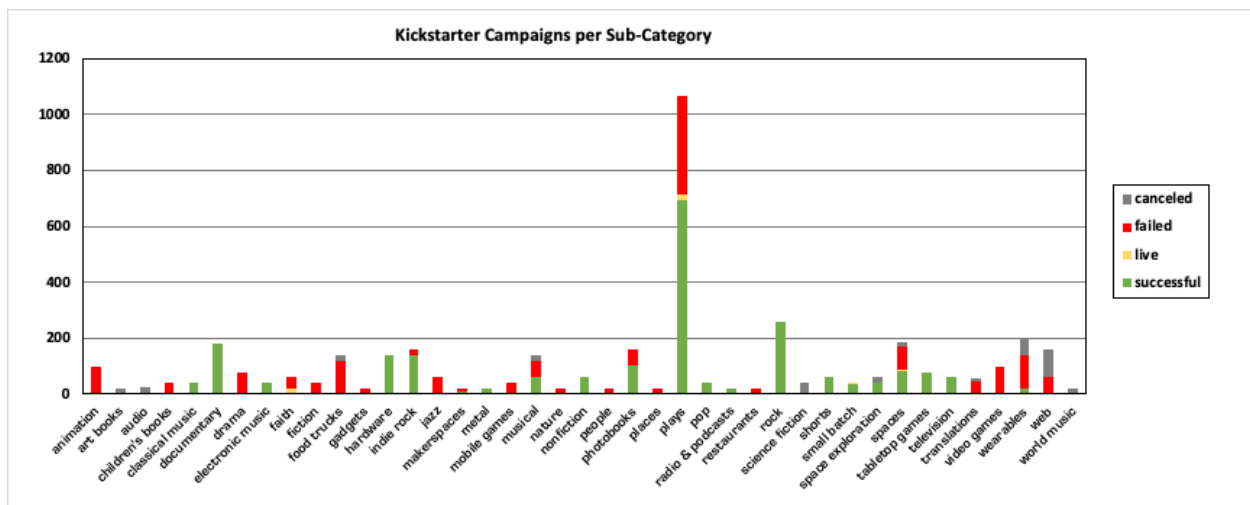

Figure 3: Number of Successful, Failed, Canceled, and Live Kickstarter Campaigns per Sub-Category across entire data set.

Figure 3 indicates the most popular sub-category is plays. This is expected since plays is the predominate sub-category of the theater main category. There are 12 sub-categories that have a 100% success rate: classical music, documentary, electronic music, hardware, metal, nonfiction, pop, radio and podcasts, shorts, small batch, tabletop games, and television. Rock has the highest total campaigns in this 100% group with 260 campaigns.

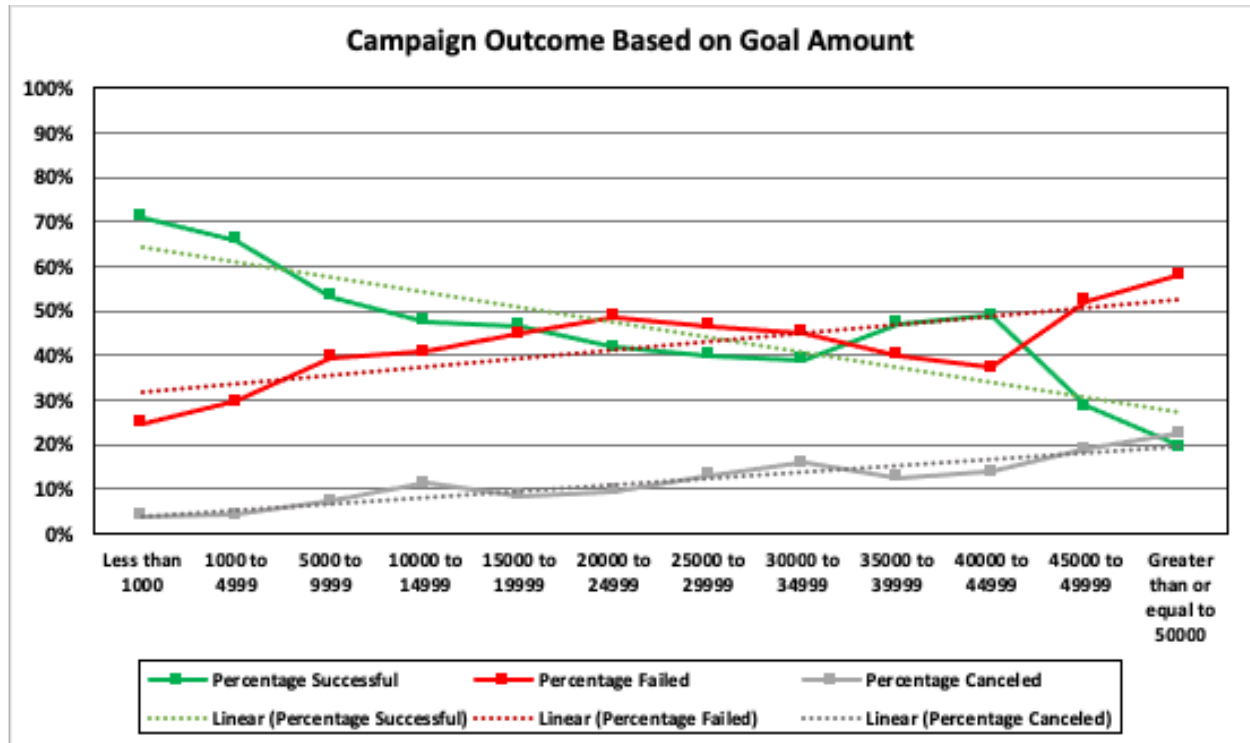## 2.3 Campaign Outcome vs. Goal Amount (Bonus 1)

Figure 4: Percentage of Successful, Failed, and Canceled Kickstarter Campaigns per Goal Amount Bin across entire data set. Including Trendlines for each Outcome.

Figure 4 clearly indicates that the campaign success rate is inversely proportional to the goal amount. The success rate is 71% for goals under 1,000 and 19% for goals greater than or equal to 50,000.

2.4 Backer Count Statistical Analysis (Bonus 2)

Table 1: Statistical Analysis of Backer Count Totals
for Successful and Failed Campaigns.

Statistical Analysis		
	Successful	Failed
Mean	194	18
Median	62	4
Minimum	1	0
Maximum	26457	1293
Variance	712841	3773
Std Deviation	844	61
1st Quartile	29	1
3rd Quartile	141	12
InterQuartile Range	112	11
Lower Outlier Bound	-139	-16
Upper Outlier Bound	309	29
Adjusted Mean (excluding Outliers)	75	5

The median value for the number of backers for successful and failed campaigns summarizes the data set more meaningfully than the mean. The large difference between the 3rd quartile values and the maximum values in each case indicate that the mean value is heavily skewed by the highest values.

Data points outside the upper outlier bound are removed from the mean value (Adjusted Mean) utilizing ± 1.5 x IQR Outlier bounds. This adjusted mean value is significantly closer to the median value than the total mean value for each data set. This further indicates the median value is a better representation of central tendency for these two data sets.

The variance of the number of backers for successful campaigns is 712,841, compared to 3773 for failed campaigns. Therefore, the number of backers for successful campaigns is much more volatile compared to the failed campaigns.

Successful campaigns have a much higher number of backers on average so it makes sense that the variability in successful campaigns is larger since each backer can contribute an arbitrarily high amount. A campaign can be successful with just one backer if the donation size is large enough to satisfy goal. However, failed campaigns will have a reduced tendency to have large single contributions, otherwise they would most likely be a successful campaign.

Question: **What are some limitations of this dataset?**

The goal amount money value is not appropriately scaled based on the currency conversions between different countries. Since the conversion rates change on a day-to-day basis, it would be necessary to utilize conversion rates based on the campaign creation date. Historical currency rates are readily available online.

Question: **What are some other possible tables and/or graphs that we could create?**

Another useful plot would be the length of time a campaign was open compared to the success rate. Intuitively, one think that with a long amount of time to gain traction in a campaign the higher the success rate. However, it is possible that a closer deadline encourages donors to act fast.

It would also be interesting to correlate the success rate with whether the campaign was Staff Picked or not. It would be interesting to discover if the Kickstarter Staff has any influence on success rate or the number of backers a campaign receives.

3. Conclusion

The Kickstarter dataset is analyzed from May 2009 to March 2017. The peak success rate is 60.6% in May, and the lowest success rate is 44.1% in December. The greatest number of successful and total campaigns are categorized primarily as theater. However, the music category holds the highest success rate of 77%. The campaign success rate is inversely proportional to the goal amount. The success rate is 71% for goals under 1,000 and 19% for goals greater than or equal to 50,000. The median value of the number of backers for both failed and successful campaigns is a better measure of central tendency due to the large dispersion and variance in both cases. However, the number of backers for successful campaigns is more variable than failed campaigns.

Appendix I

Table 1: Successful, failed, and Canceled Campaign Totals and Percentage of Total Campaigns by Month.

Row Labels	successful		failed		canceled		Total Count of state
	Count of state	Success Rate	Count of state	Fail Rate	Count of state	Cancel Rate	
Jan	182	49.86%	149	40.82%	34	9.32%	365
Feb	202	60.30%	106	31.64%	27	8.06%	335
Mar	180	56.96%	108	34.18%	28	8.86%	316
Apr	192	59.81%	102	31.78%	27	8.41%	321
May	234	60.62%	126	32.64%	26	6.74%	386
Jun	211	54.81%	147	38.18%	27	7.01%	385
Jul	194	50.13%	150	38.76%	43	11.11%	387
Aug	166	49.85%	134	40.24%	33	9.91%	333
Sep	147	49.33%	127	42.62%	24	8.05%	298
Oct	183	51.99%	149	42.33%	20	5.68%	352
Nov	183	54.79%	114	34.13%	37	11.08%	334
Dec	111	44.05%	118	46.83%	23	9.13%	252
Grand Total	**2185**	**53.76%**	**1530**	**37.65%**	**349**	**8.59%**	**4064**

Table 2: Successful, Failed, and Canceled Campaign Totals and Percentage of Total Campaigns by Category.

Row Labels	successful		failed		canceled		Total Count of state
	Count of state	Rate	Count of state	Rate	Count of state	Rate	
film & video	300	57.69%	180	34.62%	40	7.69%	520
food	34	17.00%	140	70.00%	20	10.00%	200
games	80	36.36%	140	63.64%		0.00%	220
journalism		0.00%		0.00%	24	100.00%	24
music	540	77.14%	120	17.14%	20	2.86%	700
photography	103	46.82%	117	53.18%		0.00%	220
publishing	80	33.76%	127	53.59%	30	12.66%	237
technology	209	34.83%	213	35.50%	178	29.67%	600
theater	839	60.23%	493	35.39%	37	2.66%	1393
Grand Total	**2185**	**53.11%**	**1530**	**37.19%**	**349**	**8.48%**	**4114**

Table 3: Successful, Failed, and Canceled Campaign Totals and Percentage of Total Campaigns by Sub-Category.

Row Labels	successful		failed		canceled		Total Count of state
	Count of state	Rate	Count of state	Rate	Count of state	Rate	
animation		0.00%	100	100.00%		0.00%	100
art books		0.00%		0.00%	20	100.00%	20
audio		0.00%		0.00%	24	100.00%	24
children's books		0.00%	40	100.00%		0.00%	40
classical music	40	100.00%		0.00%		0.00%	40
documentary	180	100.00%		0.00%		0.00%	180
drama		0.00%	80	100.00%		0.00%	80
electronic music	40	100.00%		0.00%		0.00%	40
faith		0.00%	40	100.00%		0.00%	40
fiction		0.00%	40	100.00%		0.00%	40
food trucks		0.00%	120	85.71%	20	14.29%	140
gadgets		0.00%	20	100.00%		0.00%	20
hardware	140	100.00%		0.00%		0.00%	140
indie rock	140	87.50%	20	12.50%		0.00%	160
jazz		0.00%	60	100.00%		0.00%	60
makerspaces	9	45.00%	11	55.00%		0.00%	20
metal	20	100.00%		0.00%		0.00%	20
mobile games		0.00%	40	100.00%		0.00%	40
musical	60	42.86%	60	42.86%	20	14.29%	140
nature		0.00%	20	100.00%		0.00%	20
nonfiction	60	100.00%		0.00%		0.00%	60
people		0.00%	20	100.00%		0.00%	20
photobooks	103	64.38%	57	35.63%		0.00%	160
places		0.00%	20	100.00%		0.00%	20
plays	694	66.28%	353	33.72%		0.00%	1047
pop	40	100.00%		0.00%		0.00%	40
radio & podcasts	20	100.00%		0.00%		0.00%	20
restaurants		0.00%	20	100.00%		0.00%	20
rock	260	100.00%		0.00%		0.00%	260
science fiction		0.00%		0.00%	40	100.00%	40
shorts	60	100.00%		0.00%		0.00%	60
small batch	34	100.00%		0.00%		0.00%	34
space exploration	40	66.67%	2	3.33%	18	30.00%	60
spaces	85	46.70%	80	43.96%	17	9.34%	182
tabletop games	80	100.00%		0.00%		0.00%	80
television	60	100.00%		0.00%		0.00%	60
translations		0.00%	47	82.46%	10	17.54%	57

video games		0.00%	100	100.00%		0.00%	100
wearables	20	10.00%	120	60.00%	60	30.00%	200
web		0.00%	60	37.50%	100	62.50%	160
world music		0.00%		0.00%	20	100.00%	20
Grand Total	**2185**	**53.76%**	**1530**	**37.65%**	**349**	**8.59%**	**4064**

Table 4: Successful, Failed, and Canceled Campaign Totals and Rates per Goal Amount

Goal	Number Successful	Fumber failed	Number Canceled	Total Projects	Percentage Successful	Percentage Failed	Percentage Canceled
Less than 1000	322	113	18	453	71.08%	24.94%	3.97%
1000 to 4999	932	420	60	1412	66.01%	29.75%	4.25%
5000 to 9999	381	283	52	716	53.21%	39.53%	7.26%
10000 to 14999	168	144	40	352	47.73%	40.91%	11.36%
15000 to 19999	94	90	17	201	46.77%	44.78%	8.46%
20000 to 24999	62	72	14	148	41.89%	48.65%	9.46%
25000 to 29999	55	64	18	137	40.15%	46.72%	13.14%
30000 to 34999	32	37	13	82	39.02%	45.12%	15.85%
35000 to 39999	26	22	7	55	47.27%	40.00%	12.73%
40000 to 44999	21	16	6	43	48.84%	37.21%	13.95%
45000 to 49999	6	11	4	21	28.57%	52.38%	19.05%
Greater than or equal to 50000	86	258	100	444	19.37%	58.11%	22.52%