

Exploring Grant Opportunities and Trends for buildOn

NLP Analysis for buildOn
Development Team





1. PROJECT OVERVIEW

Organization Development Goal:

- Increase share of revenue from major (\$10k+) and transformational (\$100k+) gifts

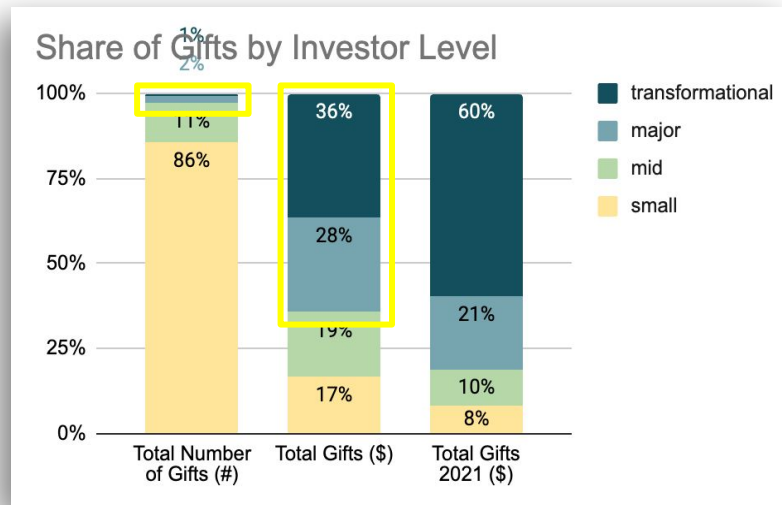
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Major Gifts are Key to Scaling

- Only 3% of donors at major-gift level make up >60% of revenue
- Larger returns to major gift cultivation





1. PROJECT OVERVIEW

Strategy:

- Improve potential major donor identification for fundraising team



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Metis Project Scope:

- Using an NLP algorithm to explore historical grant information, identify the following:
 - **Topic trends** in giving comparing mid/major vs transformational level gifts
 - **Recommended grantmakers** to target

2. METHODOLOGY | DATA

- **Source:** Foundation Directory
- **n = 1,038**
- **Unit of Analysis:** Individual grant
- **Corpus:** Grant Descriptions
- **Features:**
 - *Grantmaker / Grantee*
 - *Amount*
 - *Year*
 - *Description*



2. METHODOLOGY | METHOD

Text Preprocessing:

- Tokenization, lemmatization, n-grams, entities identification | *spaCy*
- Doc-Term Matrix vectorization | *TFIDF (sklearn)*

Document Similarity Analysis:

- Topic Modeling | *scattertext, NMF (sklearn)*

Recommender:

- Content Based Filtering | *numpy.linalg.norm*





3. RESULTS

Topic Modeling for Major v. Transformational Grants

Overview: Topic Modeling analysis comparing Mid/Major v. Transformational Grants, using Grant Descriptions as the corpus

74% Mid/Major Grants (\$5-100k)

- Shorter Descriptions (1-2 sentences)

26% Transformational Grants (\$100k+)

- Longer Descriptions (paragraph)

Topic Modeling for Major v. Transformational Grants

Mid/Major	Transformational
0: 'General Support'	0: 'School/Student Programs'
1: 'Equipment'	1: 'General Support'
2: 'College/Career Success'	2: 'Arts'
3: 'General Operating'	3: 'NY/Boston'
4: 'General Operations'	4: 'After School Programs'
5: 'Scholarship/Fund'	5: 'Early Education'
6: 'Gift Matching'	6: 'Scholarship'
7: 'Youth Ed/Arts Programs'	7: 'College & Career Success'
8: 'Unrestricted/Grants'	8: 'Health/Foster'
9: 'School Student Support'	9: 'Job/Career Training'

- More tactical/administrative funding for mid/major gifts

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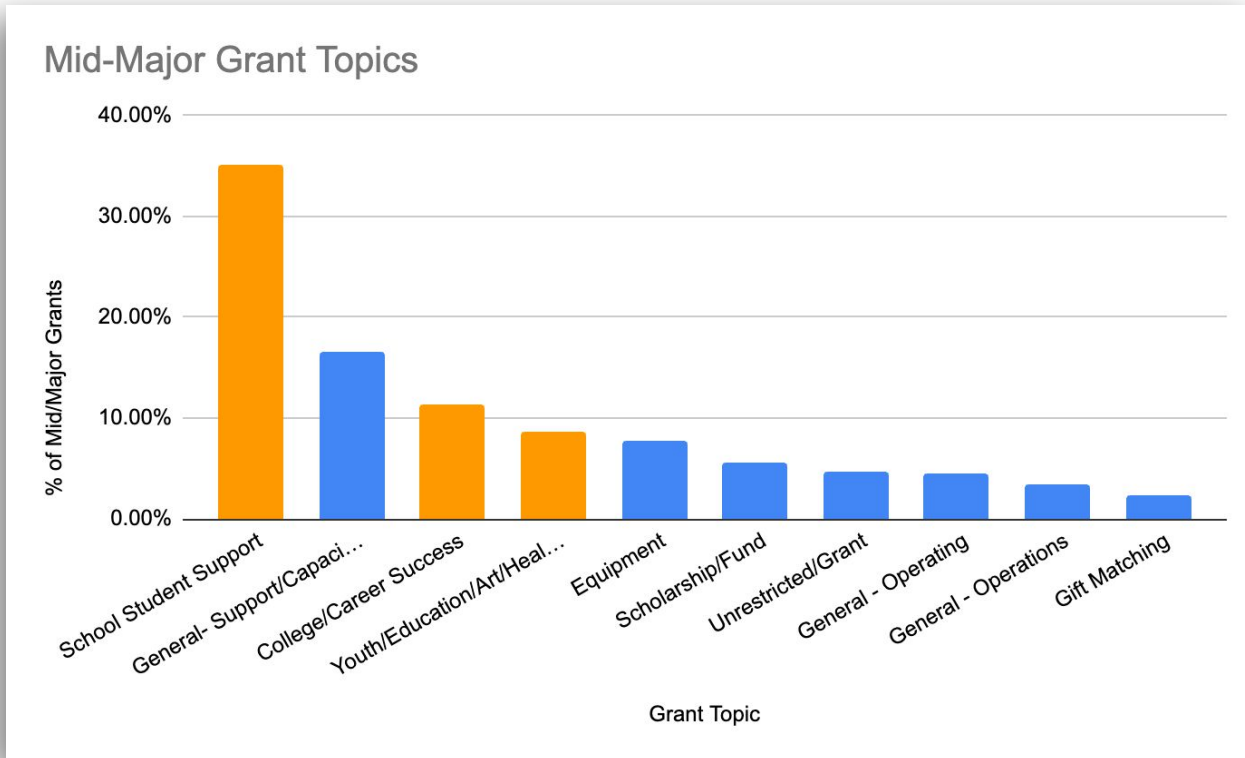
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- More tactical/administrative funding for mid/major gifts
- NY & Boston is a hub for transformational giving
- Youth Arts / After School programs and Job/Career Training appear in both models
- Early Education & Health/Foster Services are more prevalent in Transformational Giving

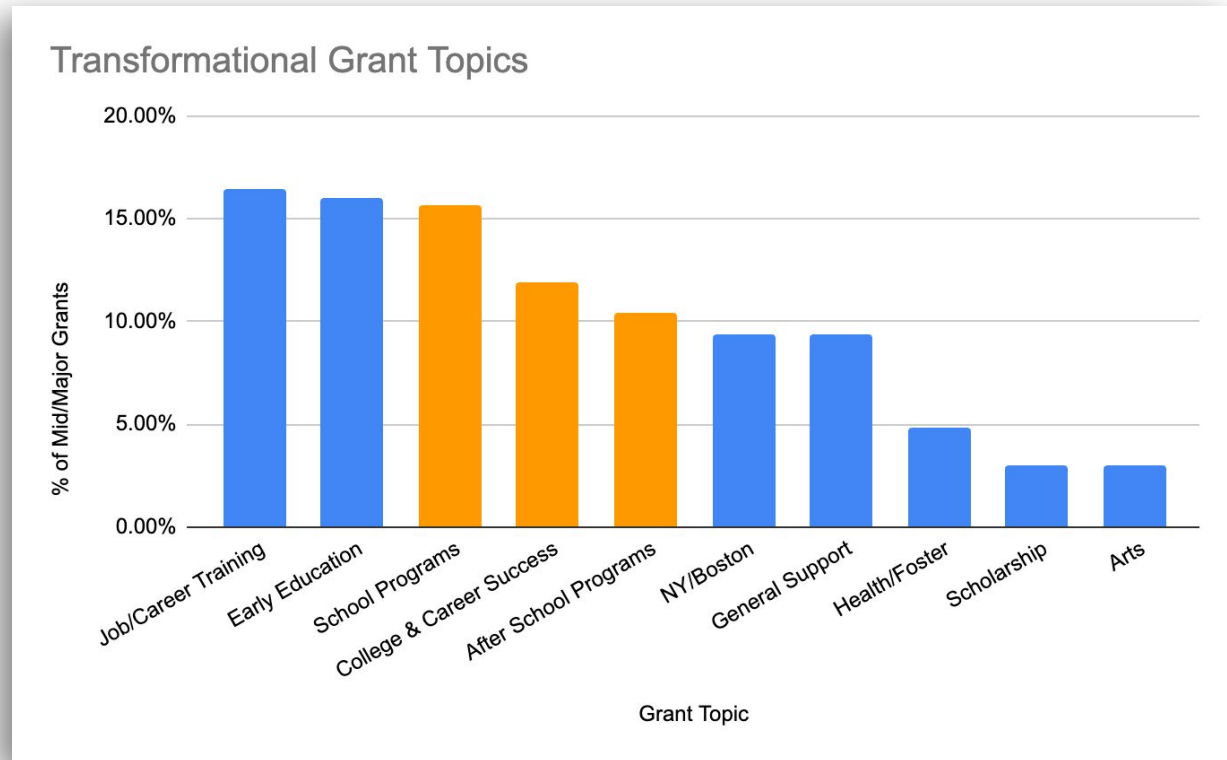
buildOn Alignment with Grant Topics: *Mid-Major Grants*



Among the topics buildOn is most aligned (in **orange**):

442 grants representing **\$15 million** for 2021-2022

buildOn Alignment with Grant Topics: *Transformational Grants*



Among the topics buildOn is most aligned (in **orange**):

102 grants
representing
\$262 million for
2021-2022

buildOn Grantmaker Recommendations: *Major Grants*

Grantmaker	Granted 2021-22	# Grants Authorized
Paul M. Angell Family Foundation	\$865,000	22
New York Community Trust	\$517,500	15
The Wicklander Foundation	\$24,000	4
Best Buy Foundation	\$190,500	13
J. E. & Z. B. Butler Foundation, Inc.	\$316,475	8

These orgs had the highest TFIDF scores for buildOn related topics.

62 grants
representing
\$2.5 million for
2021-2022

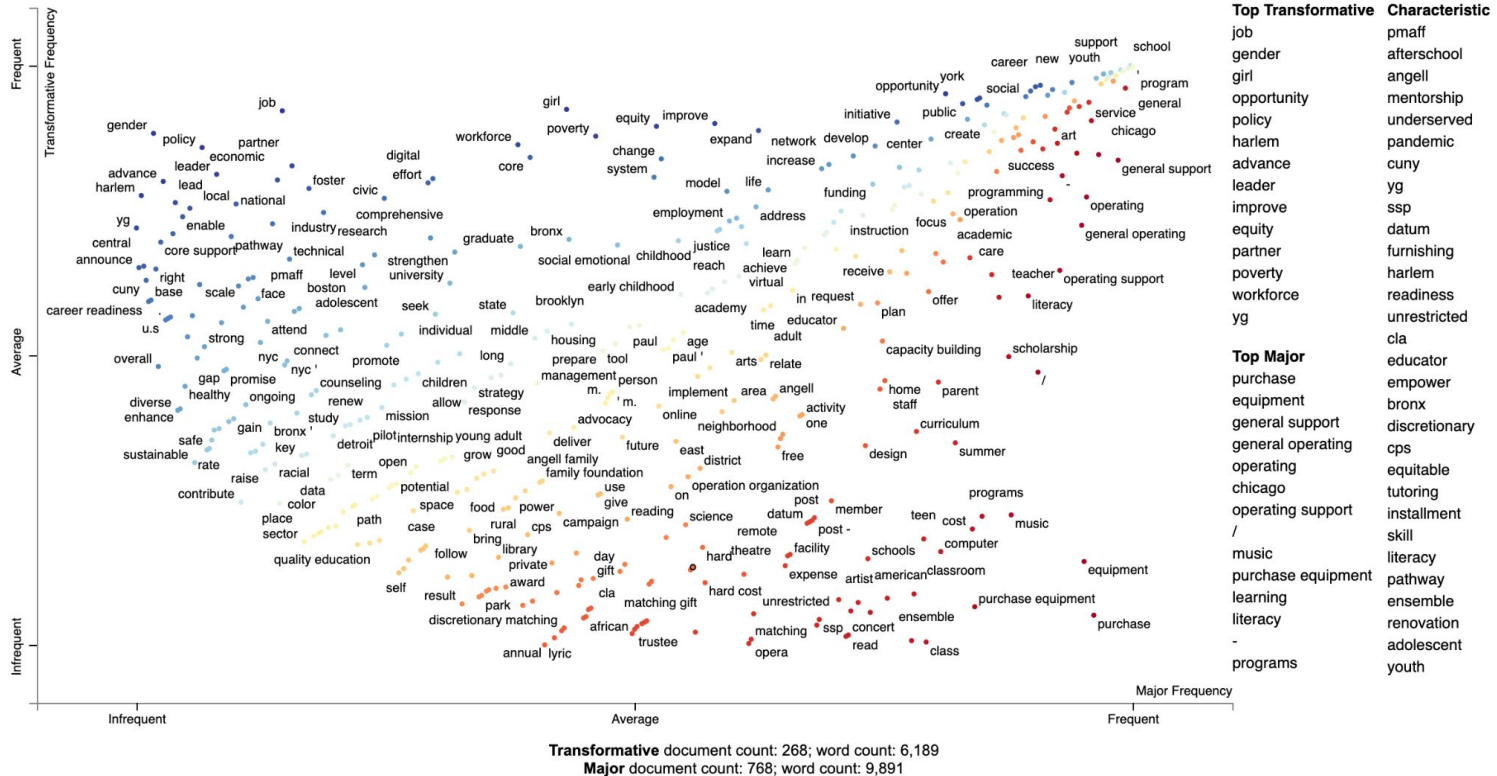
buildOn Grantmaker Recommendations: *Transformational Grants*

Grantmaker	Granted 2021-22	# Grants Authorized
New York Community Trust	\$4,666,000	24
Carnegie Corporation of New York	\$5,520,000	20
Charles Hayden Foundation	\$4,455,000	23
East Bay Community Foundation	\$5,850,000	10
The Harry and Jeanette Weinberg Foundation, Inc.	\$2,010,000	10

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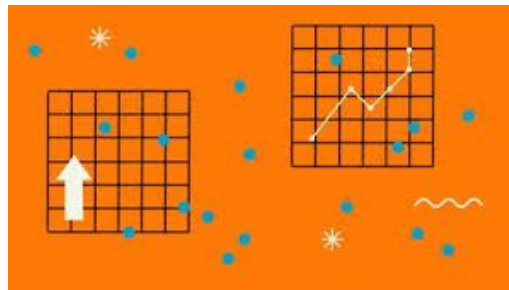
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buildOn Grantmaker Recommendation Tool: Scattertext



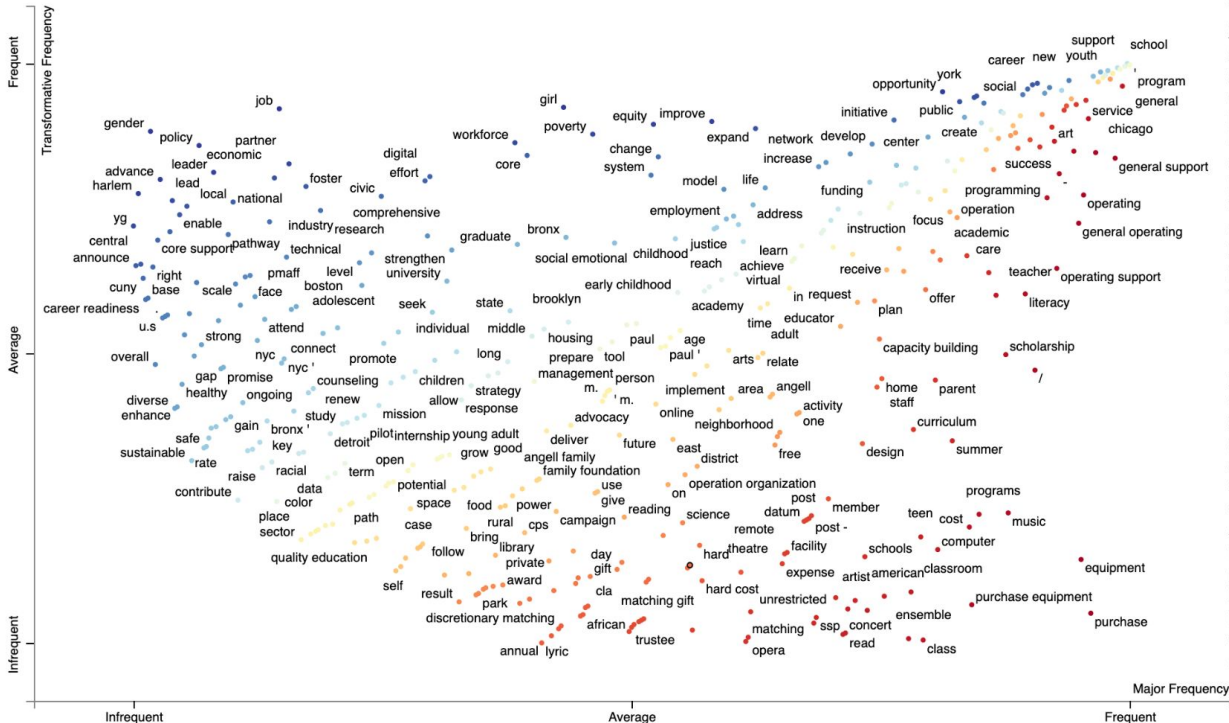
4. CONCLUSIONS

- Mid/Major Grants have a larger percentage of general funding and tactical funding, while Transformational Grants are more topical
- Topic Modeling allowed finer filtering to build on related grants and grantmakers
- Great initial set of prospects / prospecting tool with scattertext
- Further work to do:
 - *Identify better corpus dataset for international funding*
 - *Build bigger corpus across several years*
 - Improve Topic Modeling esp for mid/major
 - Analyze trends over time





buildOn



3. RESULTS | Transformative v Mid/Major

Transformational	Topic 00 / School Programs school (6.07) high (3.88) student (3.01) program (2.33)	Topic 01 / General Support general (32.68) support (24.47) operating (7.40) operation (6.18)	Topic 02 / Arts/Culture attend (9.06) bronx (8.53) instruction (8.06) provide (7.11)	Topic 03 / NY/Boston Schools new (10.03) york (9.92) city (6.36) boston (3.38)	Topic 04 / After School Programs college (10.01) program (3.70) career (2.53) success (2.48)
	Topic 05 / Early Education education (4.25) early (3.79) childhood (3.44) quality (2.25)	Topic 06 / Scholarship fund (19.66) scholarship (13.90) paul (3.91) 19 (2.68)	Topic 07 / College & Career Success youth (7.60) health (4.19) foster (3.91) service (3.07)	Topic 08 / Health / Foster afterschool (14.00) improve (10.86) reading (10.05) instruction (8.42)	Topic 09 / Job/Career Training training (3.10) job (2.73) career (2.18) workforce (1.42)
Mid - Major	Topic 00 / General Support/ Capacity Building general (50.14) support (36.97) capacity (1.35) building (1.32)	Topic 01 / Equipment purchase (29.46) equipment (28.48) computer (9.89) furnishing (5.37)	Topic 02 / College/Career Success program (16.40) college (12.02) success (4.74) bound (3.62)	Topic 03 / General - Operating operating (52.79) general (7.81) support (4.02) give (3.44)	Topic 04 / General - Operations operation (26.58) organization (21.39) general (12.93) operations (2.58)
	Topic 05 / Scholarship/Fund scholarship (34.20) student (7.84) fund (7.07) award (2.85)	Topic 06 / Gift Matching matching (17.95) gift (17.12) discretionary (16.91) trustee (16.66)	Topic 07 / Youth Edu/Art Programs education (19.90) youth (3.91) music (2.97) chicago (2.80)	Topic 08 / Unrestricted/Grant grant (19.89) unrestricted (18.25) give (12.77) honorary (11.84)	Topic 09 / School Student Support school (3.79) student (2.21) high (1.69) support (1.22)



3. RESULTS | Grant Recommendations