## Predicting Mission Alignment and Preventing Mission Drift: How Revenue Sources Matter?

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### Abstract

Activities of nonprofit organizations do not always align with their missions, a managerial problem termed as "mission drift." Mission drift is difficult to operationalize and quantify thus, as a critical issue, only a few conceptual pieces or empirical case studies explored this topic. This paper develops innovative measures to operationalize "mission alignment" using data science methodology and examines how different revenue sources influence the mission alignment of Chinese foundations. Specifically, four measures of mission alignment are devised based on the cosine similarity of text between mission statement and program description (i.e., the sum cosine similarity, average cosine similarity, weighted sum cosine similarity, and weighted average cosine similarity). The text analysis of programs indicates that the majority of the foundations' projects have educational purposes and for-profit businesses play a significant role in foundations' projects and funding. The regression analysis shows that personal donation and service revenue can increase mission alignment while organizational donation and membership dues decrease mission alignment. The results suggest validity of the mission alignment measures.

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#### Introduction

An organization's mission statement conveys the concise and clear goals and motivations of the organization. It has long been the focus of organizational studies and business consulting (Minkoff & Powell, 2006). Since the late 1990s, several empirical studies have highlighted the positive impact of a well-written and well-implemented mission statement. The positive impact of a mission statement includes expressing the focus of the organization and claiming the organizational identity, sharing the vision of the future with funders, bringing employees together around a common goal, employee retention, shaping a shared organizational culture, and helping the organization survive during a crisis (Bart & Tabone, 1998; W. A. Brown & Yoshioka, 2003; W. Brown, Yoshioka, & Munoz, 2004; Crotts, Dickson, & Ford, 2005; Forbes & Seena, 2006).

Nonprofit organizations' activities, however, may not always align with their missions. This challenge is vividly described as the choice between "following the money" or "following the mission." In the literature, this issue is termed as "mission drift" or "goal displacement" which is "the process through which organizational goals can be deflected or sacrificed in the interests of organizational survival, or as the result of a loss of focus" (Powell & Steinberg, 2006, p. 592). Mission drift has various negative effects including the possible distortion of organizational activities and projects, difficulties with donor relations, and financial destabilization (Bennett & Savani, 2011, pp. 219–220).

Mission drift can occur for a variety of reasons. For example, nonprofit organizations have been engaging in commercial activities to increase their revenues, however, the commercial activities were thought to distract the time and resources from implementing the organization's mission (Salamon, 2012, Chapter 14; Weisbrod, 2004). Furthermore, private, foundation, and government support also have goal displacement effects and the extent of the effects varies by the source of revenue (Jones, 2007). The private contributions, including donations from individuals, corporations, and foundations effect mission drift because the organizational activities and projects may be modified to satisfy the mandate of contributors. Compared to private donations, the goal displacement effect of government funding is weaker, and that of commercial activity is the weakest among all the revenue sources (Froelich, 1999). Although existing literature has identified the negative outcomes of mission drift, very few empirical studies explored what factors lead to mission drift. As mission drift is difficult to operationalize and quantify, most of these studies, are qualitative case studies or conceptual papers (Bennett & Savani, 2011; Hawkins, 2014; Jones, 2007; Weisbrod, 2004). In response to the paucity of quantitative research on this critical topic, this paper develops an innovative approach to quantify "mission alignment" based on data science methodology and examines to what extent different revenue sources influence the mission alignment of nonprofit organizations.

This empirical study examines the impact of revenue from different sources on the alignment between the mission statement and project activities (mission alignment, or MA). We divide revenue sources into three categories: private contribution (PC), government funding (GF), and commercial income (CIN). The private contribution includes membership dues and donations from individuals or organizations (e.g., foundations and companies). The commercial income includes investment return, service revenue, and sales revenue. By including control variables (CV), we thus construct the following model to test the impact of revenue from different sources on mission alignment:

$$\mathbf{MA} = \alpha + \beta \cdot \mathbf{PC}_i + \gamma \cdot \mathbf{GF}_i + \delta \cdot \mathbf{CIN}_i + \mu \cdot \mathbf{CV}_i + \varepsilon_i$$

### Methods

### Dataset

This study utilizes data from the Research Infrastructure of Chinese Foundation (RICF) project. RICF is a comprehensive database that collects information about Chinese foundations from three categories: basic information about organizations, financial information, and project information (Ma, Wang, Dong, & Li, 2017). Basic information consists of descriptive data about the organizations including the foundation's name, date of establishment, the number of full-time employees, etc. Financial information includes the financial position, cash flow, and activities. Project information provides descriptions of foundations' projects, including project summary and project revenue and expense. RICF includes more than 300 variables in total. For this study, we are using data from 2014 because the program information from the other years is incomplete or unavailable.

The quality of RICF is verified by four criteria: data source reputation and believability, completeness, accuracy, and timeliness. Data records of RICF are compiled from six sources: annual reports and audited financial reports, information disclosed by supervising government departments, information disclosed by the China Foundation Database, information disclosed by the China Foundation Center, news from the foundation's official website, and news from credible magazines or websites. Data are triangulated among these sources to verify accuracy. By comparing RICF data to the China Foundation Center and Yearbook, it is suggested that RICF has collected more than 95% of the total population of Chinese foundations. The latest version of RICF includes data from 2013, 2014 and 2015.

### Variables and Operationalization

*Mission alignment.* This variable measures the textual similarity between the mission statement and project description. To calculate text similarity, we employ a bag-of-words model. First, we performed sentence segmentation on the text using the Python Jieba library (Junyi, 2016) and extracted words from all sentences in the statements. Then we removed the stop words (e.g., "and"和, "is" 是, "of"的, etc.) or commas and for each pair of the mission statement and program description for a foundation, we calculated the tf-idf score for each remaining word in the text to evaluate its importance (Leskovec, Rajaraman, & Ullman, 2014, p. 8). The tf-idf score is calculated as

tf-idf 
$$(t,d,D)=f_{t,d} \cdot \log(N/|\{d\in D: t\in d\}|$$

where  $f_{t,d}$  is the frequency of word t in document *d*, *N* is the total number of documents, and  $|\{d \in D: t \in d\}|$  is the number of documents in which term *t* appears. This method picks up the most important words in each document while being able to rule out words that are merely frequent but without contextual significance (e.g., "the"). Finally, we calculated the similarity between two documents by representing

each document as a vector containing the tf-idf score of each word in the document and calculated the cosine similarity between the two vectors.

We calculated four different cosine similarity values: the *sum value*, the *average value*, the *weighted sum*, and the *weighted average*. The dataset contains multiple program descriptions but only one mission statement for each institution. We first computed the textual similarity between each pair of program description and mission statement then take the sum of all individual similarity values as the *sum cosine similarity* between an institution's program descriptions and mission statement. Dividing the sum cosine similarity by the number of projects is the *average cosine similarity*. Weighting the individual similarity by the percentage of program expense in proportion to the total expense, we get the *weighted sum* and *weighted average* cosine similarity.

*Private contribution.* This category includes *personal donation, organizational donation*, and *membership dues.* Personal donations are contributions made by individuals from the general public. Organizational donation includes grants from corporations, foundations, and other incorporated legal entities. Membership dues are contributed by the members of foundations.

*Government funding*. This variable records the cash flow from the government to foundations and includes grants and subsidies.

*Commercial income*. This category includes revenues generated from providing services, selling products, and investment returns. Foundations can generate income from services, for example, day care services for autistic children. They can also sell products like souvenirs and books to generate sales revenue. Investment returns are generated from short-term and long-term investment activities of foundations.

*Control variables.* Control variables (CVs) include *asset size*, *organizational age*, and *average wage*. According to the studies from organizational ecology, the size and age of an organization can significantly influence its success. This phenomenon is referred to as "liability of smallness" and "liability of newness" (Baum & Shipilov, 2006, pp. 62–63). Foundations with a larger asset size may have a stronger organizational capacity and be more capable to pursue their missions. Foundations established earlier have more experience in directing the programs to the mission and negotiating with donors on the mission. Average wage, according to the theory of compensating differentials, can reflect the capacity of staff, i.e., staff with higher average wages are more skilled in their work (Powell & Steinberg, 2006, p. 161).

### Results

# **Keyword Frequencies**

A total of 16,573 projects were funded by 3,127 foundations in 2014, amounting to 31.2 billion Chinese Yuan (approximately 4.5 billion US dollars). The 10 most popular keywords in project descriptions and aggregated amounts of funding are presented in Table 1. Among these keywords, "student" is most popular and appears in 2,853 project text descriptions (17.21% of all the projects). The keyword "poor" or "poverty" produces the highest aggregated amount of funding – about 7.4 billion Chinese Yuan (approximately 1.1 billion US dollars, accounting for 23.72% of the total funding). Surprisingly, the keyword "limited liability corporation" appears in 1,369 text descriptions of projects (accounting for 8.26% of the total projects) and amounts to 2.2 billion Chinese Yuan (about 320 million US dollars, accounting for 7.12% of the total funding).

English Translation	Chinese Term	# of Program <sup>*</sup>	Funding** (10 Thousand Chinese Yuan)
Student	学生	2,853 (17.21%)	422,733.29 (13.54%)
Education	教育	2,325 (14.03%)	587,631.36 (18.82%)
School	学校	1,728 (10.43%)	451,717.20 (14.47%)
Family	家庭	1,538 (9.28%)	368,937.63 (11.82%)
Poor/poverty	贫困	1,430 (8.63%)	740,792.53 (23.72%)
Limited liability corporation	有限公司	1,369 (8.26%)	222,444.75 (7.12%)
Life	生活	1,235 (7.45%)	255,434.76 (8.18%)

Table 1: The top 10 most popular keywords in project summaries.

Culture	文化	1,201 (7.25%)	226,819.80 (7.26%)
Teacher	教师	1,052 (6.35%)	220,684.32 (7.07%)
Scholarship	奖学金	987 (5.96%)	95,513.82 (3.06%)

Note:

\* Indicating the number of projects which have the term in the project summary.

\*\* Indicating the sum of all related projects.

# Descriptive Statistics and Correlations

Table 2 provides the descriptive statistics for all variables. Distributions of most statistics are highly skewed. Annual revenue and assets follow a heavy-tailed distribution, indicating our data covers a broad range of institutions. The average age is 8.71 years (SD = 7.67) with a median of 5.76 years. The median of membership dues, government funding, investment return, service revenue, and sales revenue are all zero, indicating more than half of the foundations do not have revenues generated from these sources.

Variable	Mean	SD	Median	Min	Max
Dependent Variables					
Sum Cosine Similarity	0.42	0.94	0.23	0.00	32.11
Average Cosine Similarity	0.08	0.08	0.06	0.00	0.85
Weighted Sum Cosine Similarity	0.09	0.08	0.06	0.00	0.85
Weighted Average Cosine Similarity	0.04	0.07	0.01	0.00	0.85
Private Contribution					
Personal Donation	2,034,017	7,171,990	37,337	0.00	107,381,100
Organizational Donation	10,362,330	62,563,680	654,555	0.00	2,130,343,000
Membership Dues	28,225	611,586	0.00	0.00	24,106,600
Government Funding	1,679,139	28,448,860	0.00	0.00	885,289,500

#### Table 2: Descriptive statistics of variables. N = 1,958.

Commercial Income					
Investment Return	1,112,270	9,975,708	0.00	-2,931,372	275,737,300
Service Revenue	160,220	1,973,229	0.00	0.00	57,878,290
Sales Revenue	6,502	172,270	0.00	0.00	6,893,204
Control Variables					
Annual Revenue	17,002,830	86,592,090	2,505,771	0.00	2,162,600,000
Asset	41,415,910	197,432,900	8,388,451	0.00	4,400,407,000
Average Wage	29,558	64,961	9,288	0.00	1,842,760
Organizational Age (year)	8.71	7.67	5.76	1.02	34.76



Figure 1: Correlation matrix of variables.

As shown in Figure 1, a correlation analysis was conducted to examine the potential correlations among the independent variables and control variables. The correlation between dependent and independent variables are relatively week (|r| < 0.3).

Regression analysis

To test our hypotheses, we performed an ordinary least squares (OLS) regression to fit each of the models. Because more than half of the foundations have no revenue from membership dues, government funding, investment return, service, and sales, these variables are dummy coded in regression analysis. All the other variables are log-transformed because of the high variances as presented in Table 2. The results of the regression are reported in Table 3.

	Sum Cosine Similarity	Average Cosine Similarity	Weighted Sum Cosine Similarity	Weighted Average Cosine Similarity
Private Contribution				
Personal Donation (1.21)	0.04**	0.02	0.02	-0.01
Organizational Donation (2.15)	0.05	-0.08***	-0.14***	-0.28***
Membership Dues (1.01)	-1.70***	-0.57	-0.54	0.59
Government Funding (1.06)	0.16	0.14	0.18	0.16
Commercial Income				
Investment Return (1.11)	-0.01	-0.09	-0.02	-0.11
Service Revenue (1.04)	0.43**	0.31**	0.31	0.19
Sales Revenue (1.02)	0.69	0.38	0.41	0.09
Control Variables				
Asset (2.71)	0.12**	0.09**	0.14***	0.11
Organizational Age (Days) (1.35)	-0.04	-0.02	-0.09	-0.07
Average Wage (1.28)	0.13***	0.00	0.04	-0.09
#Observation	508	508	508	508
Adjusted $R^2$	0.16	0.02	0.03	0.09

Table 3: Regression results of three types of operationalization of mission alignment

Note:

- 1. \*\*\* p < .01, \*\* p < .05;
- The numbers in brackets are variance inflation factor (VIF) values. All the VIF values are significantly lower than 5, suggesting little possibility of multicollinearity in the regressions (O'brien, 2007, p. 688).

As presented in Table 3, the effects of private contributions were mixed. Personal donation was positively related to sum cosine similarity (p < .05), while organizational donation was negatively associated with the other three measures of mission alignment (p < .01). Intriguingly, membership dues were negatively related to sum cosine similarity (p < .01). This is likely because the more members an organization has, the more difficult it can be to reach consensus to pursue the mission of the organization.

Government funding was not found to be statistically significant in increasing the similarity values (p > .05). Among the three sources of commercial income, service revenue was positively related to the sum cosine similarity and average cosine similarity (p < .05), suggesting its positive impact on maintaining mission alignment. Sales and investment revenues were not significant (p > .05). This result indicates that service income can enhance mission alignment, rather than weaken it, echoing the social marketization thesis that commercialization and marketization does not erode civil society but strengthen it (Han, 2017).

In terms of control variables, asset and average wage were positively associated with the similarity measures (p < .05), while organizational age was not statistically significant (p > .05).

## **Discussion and Concluding Remark**

The working domains of Chinese foundations

In terms of the foci of foundations' projects, the frequency analysis of keywords reveals the majority of the projects at foundations have educational purposes, since half of the top 10 keywords are directly related to education (i.e., student, education, school, teacher, and scholarship). The aggregated amount of funding suggests that nearly a quarter of the total funding goes to poverty relief. For-profit

business also plays a significant role in foundations' philanthropic projects and funding. We surprisingly observed that the term "limited liability corporation" was in the top 10 keywords list and accounts for a substantial proportion of total projects (8.26%) and funding (7.12%).

The patterns of keywords in projects are different from those in the United States. For example, the total estimated amount of giving in 2014 in the U.S. was 358.38 billion USD. The largest category was religion (114.9 billion USD, 32% of total giving) followed by education (\$54.62 billion USD, 15% of total giving). In terms of giving sources, individual donation accounts for the largest proportion (258.51 billion USD, 72% of total giving) because giving in the U.S. is driven by mass philanthropy (Zunz, 2014), while corporate giving is the smallest (17.77 billion USD, 5% of total giving; The Giving Institute, 2015).

Comparing China to the U.S., we could predict some giving trends in China. First, there is substantial room for donations to increase in China. Total giving in 2014 in the U.S. accounts for about 2% of the total GDP, while total giving in China for the same year was only four basis points. Second, for-profit organizations will continue drive the growth of giving, since business elites are playing an increasingly significant role in China's nonprofit sector (Ma & DeDeo, 2017). Third, unlike the U.S. where religion is the most popular field of giving, religion is still a sensitive area in China due to political considerations (Yang, 2011).

### Impact of revenue sources on mission alignment

Revenue from different sources have varying impact on mission alignment. Even within the same category, the impact of income sources varies. For private contributions, personal donations can increase mission alignment. This is probably because donations from individuals tend to be unrestricted funds, allowing foundations to fulfill their missions without constrictions. However, the impact of organizational donations and membership dues have the opposite effect. In the majority of the cases, giving from organizational donors requires more fundraising efforts and negotiations. Organizational donors are more likely to raise their requirements on the giving during the process of negotiation, and these requirements may drift the foundations from their mission. If the organization has more members who have the power

to influence programs, it will be more difficult to reach consensus. This explains why the impact of membership dues are negative.

Existing studies do not distinguish private contributions from different sources and regard this type of donation generally as having a negative impact on mission alignment (Froelich, 1999). However, this paper suggests private contributions can be further divided into different sub-types that have varying impact on mission alignment: personal donation improves mission alignment, while organizational donation (e.g., giving from business companies) and membership dues drift foundations from mission fulfillment.

The impact of commercial revenue on mission alignment has been debated for a long time. Some scholars hold a negative attitude because they argue that the commercial activities may drift organizational resources away from organizational mission (Jones, 2007; Weisbrod, 2004), while others suggest the impact of commercial activities is complicated. Although business practice may undermine the nonprofit's social mission, such a disadvantage is avoidable through the improvement of management (Cooney, 2006; Salamon, 2012, Chapter 14). This argument leads to the discussion of a critical managerial ability in nonprofit or hybrid organizations: the ability of activity integration, i.e., the managerial skill for integrating social and commercial purposes (Battilana & Lee, 2014, pp. 414–415). In this study, the service revenue has a significant positive impact on the dependent variables, providing direct evidence to support the positive influence of commercial activities on mission alignment. Future research could examine whether the positive impact is the function of high activity integration ability.

### Contribution, Limitation, and Future Studies

First, this paper fills a gap in the literature. The quantitative test of the relations between funding sources and mission alignment has been missing in nonprofit studies as existing studies are largely theoretical or conceptual on this topic. Secondly, this study develops four innovative measures of mission alignment based on cosine similarity (i.e., sum cosine similarity, average cosine similarity, weighted sum

cosine similarity, and weighted average cosine similarity). Future studies can apply these metrics to address related questions on mission drift or develop new algorithms based on these measurements.

The limitation of this paper is that the RICF only has project information for foundations for the year 2014. The statistical analyses can be improved by using panel data when it becomes available in the near future. More data of RICF is scheduled to be released dating back to 2008. When panel data is available, time series analysis will be possible and should be more powerful in examining the research questions.

Future research could examine the impact of private contributions on mission alignment and fulfillment. In this research, we found the impact of private contributions from different sources can vary. The effect of personal donations on mission alignment is positive, while that of organizational donations and membership dues are negative. The nature of these donations and the mechanisms through which these donations function can be explored in the future.

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