

Evaluating Research Administration: Methods and Utility

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Abstract: *Three studies were jointly conducted by the Office of Research Administration and Office of Proposal Development at Tufts University to evaluate the services within each respective office. The studies featured assessments that used, respectively, (1) quantitative metrics; (2) a quantitative satisfaction survey with limited qualitative questions; and (3) a mixed-methods survey that evaluated both satisfaction and learning using quantitative metrics and equally weighted qualitative responses. These studies are used as case studies, and are described congruently to demonstrate that varying assessment methods have utility, separately and together, in evaluating the research administration enterprise. Findings illustrate that several factors influence which method should be used, including the goals of the evaluation itself. Additionally, findings indicate that judicious use of quantitative metrics supplemented with qualitative measures in mixed methods approaches allows the user to paint a more comprehensive and detailed picture. Finally, methods and inferences from such studies can be leveraged to gain or sustain competitive advantage among peer institutions and position the research administration enterprise for future success.*

Introduction

Metrics are “a means of representing a quantitative or qualitative *measurable* [emphasis in original] aspect of an issue in a condensed form” (Horvath, 2003, as cited in Kreimeyer & Lindemann, 2001, p. 75). Consequently, performance metrics represent “[m]easures used to evaluate and improve the efficiency and effectiveness of business process” (Cole, 2010, p. 14). Examples of quantitative metrics used in the field of research administration include success rate (number of submitted proposals accepted for funding), dollar amount of funding applied for and received, and number of applications submitted. Customer feedback on research administration services is an example of qualitative metrics. The benefits of developing and implementing metrics for research administration offices include defining and monitoring business processes and their impact, defining responsibilities, managing expectations, improving decision making and prioritization, motivating teams and evaluating staff performance (Haines, 2012). These benefits can be condensed to three areas: changing behavior, driving performance, and supporting investments in research administration (Taylor, Lee, & Smith, 2014, slide 5).

Current use of metrics in evaluating research administration

Analyzing metrics in relation to sponsored funding and measuring research productivity is a well-established business practice among academic institutions with a research mission or focus. The University of Minnesota, for example, tracks data related to expenditures; publications and indicators of faculty reputations; proposals and grant awards; invitations and collaborations; indirect cost recovery; student engagement in research; space allocations; and other “common research metrics” (University of Minnesota, 2008, p. 10). Some institutions have incorporated metrics into their daily operations. The University of Iowa posts weekly “Homepage Metrics” on its Division of Sponsored Programs’ website (<http://dsp.research.uiowa.edu>). These metrics consist of the numbers of routing forms that were received; submitted proposals; completed contracts; non-monetary agreements and subawards; and processed awards, and are calculated weekly and during the fiscal year to-date.

Those institutions that do not already use metrics to guide and evaluate their work are now outside the norm. A recent informal survey of research administrators for the Society of Research Administrators (SRA) International’s electronic newsletter, *Catalyst*, found that most research administration offices (78% of those who responded) conduct some kind of evaluation of their services (Davis-Hamilton, 2014). The most commonly used evaluation methods reported include collection of informal feedback from customers, examination of existing management reports and data, and comparison of current internal operational data to those from prior periods.

Pitfalls of current metrics used to evaluate research administration

While the metrics discussed above can be useful and informative assessment tools, some scholars feel that metrics based on financial or other quantitative measures “do not sufficiently capture the quality of the level of service demands” placed on research administration (Cole, 2010, p. viii). By “reducing the complexity of the representation of an issue” quantitative metrics “tend to oversimplify or omit dependencies of an issue, thus making the representation incomplete” (Kaplan & Norton, 1992, as cited in Kreimeyer & Lindemann, 2001, p. 87).

Furthermore, the external environment influences traditional quantitative metrics, like success rates, making it difficult to evaluate the merit of the activities internal to the institution. This can be illustrated by looking at success rates from the perspective of the PESTEL framework, a tool used to identify the external opportunities and threats that may impact an institution’s operation. The PESTEL framework organizes these external “forces” into six major categories: **P**olitical, **E**conomic, **S**ocio-cultural, **T**echnological, **E**cological, and **L**egal (Rothaermel, 2013, pp. 56-57). These forces can drive funds available to support research, which then influences success rates in the public and private sectors.

Research programs outside of a sponsoring agency’s priority areas face increased challenges in securing funds. An example is the recent emphasis placed on obesity research by the United States Department of Agriculture and the National Institutes of Health, linked to the obesity epidemic in the US and the current administration’s personal interest in tackling this public health challenge (socio-cultural and political forces). This presents an opportunity and competitive advantage for organizations with active obesity research programs, increasing their success rate. Conversely, it

serves as a threat, and competitive disadvantage, to other health sciences organizations, lowering their success rate. Similarly, the more recent decline in economic growth has culminated in sequestration and fewer research dollars, lowering success rates nation-wide and threatening the breadth and longevity of many research programs (an economic force). The influence of these external “forces” must, therefore, also be considered when using quantitative metrics to evaluate an institution’s research administration enterprise. While many research administration offices currently use metrics in evaluating their work, the need for an effective, evidence-based metric standard that captures the complexity of the field remains unmet. Adoption of a mixed methods approach, utilizing both quantitative and qualitative measures, may allow research administrators to garner more comprehensive evaluations of their services, either individually or collectively as representative of the research administration enterprise.

The search for effective metrics to evaluate research administration: complexity metrics & satisfaction

The current lack of standard performance metrics for research administration services has far-reaching consequences. According to a recent SRA *Catalyst* survey (Davis-Hamilton, 2014), 15% of those who conduct evaluations of their offices have doubts about their validity. As noted in the same *Catalyst* article, some common platforms for evaluation were utilized but no clear standards emerged from the results of their informal survey. This lack of standard metrics not only creates validity concerns, but also makes comparisons across offices more difficult.

The ability to assess the quality of a research administration enterprise is extremely important. It is critical to ensure that available research administration resources adequately support investigators. As well, such assessment can inform decisions on allocation of additional resources that meet the changing needs of faculty and drive competitive advantage. To quote Janice Besch, Managing Director of the National Institute of Complementary Medicine at the University of Western Sydney, “[r]esearchers require robust management systems to support their activities in a funding environment that is highly competitive and carrying a significant compliance burden. If they are not well supported, they are likely to scale down, or fail in, their grant seeking activities; funding will diminish; and there is a risk that whole research programs could be shut down due to compliance breaches” (Besch, 2014, p. 1). Management systems to support research activities can include the various software and other technological tools research administrators use, but more fundamentally can be viewed as the research administrators themselves and research administration as a whole. Proper assessment of the quality of such instrumental systems, as part of a comprehensive effort to optimize them, is part of the effort to diminish those threats to which research activities are vulnerable, according to Besch’s observations. Another study (Cole, 2010) further posits that the success of research administration offices should be measured by performance metrics grounded in needs and preferences of both faculty and department administrators. Below, we assess two solutions to meet this requirement: complexity metrics and satisfaction surveys.

Complexity metrics. In the quest to develop meaningful metrics of research administration, one must take into consideration the complexities of the tasks performed by research administrators. In this context, the judgment of complexity is in relation to the “more complex grant awards,

which require more time and resources to manage due to the nature of sponsor requirements and/or collaborative activities with multiple researchers and institutions” (Taylor, Lee & Lee, 2014, slide 30). One means of measuring complexity was compiled by Chris Thomson of Moderas (moderas.org). His Proposal Complexity Scoring Matrix aims to judge the complexity of a proposal by the workload that goes into its review, which includes factors related to staffing, budget, human or animal subjects, subcontracts, international collaborations, and others.

Duke University offers another approach to measuring complexity, where management measures the complexity of a department’s sponsored research portfolio and ties it to the compensation of research administrators. The information on complexity and types of grants is supplemented “with information about the department’s practices with training, hiring, and procurement. Each assessment received a score, and the overall score is averaged” (Melin-Rogovin, 2012). A lower score is better, as it indicates that the department manages its portfolio well, has appropriate skills and training, is hiring adequately, and uses existing systems to maintain compliance.

Despite painting a more comprehensive picture of the research administration enterprise, complexity metrics take significant time and effort to develop and may be cumbersome and time-consuming for end-users. Additionally, it is highly subjective how much weight should be assigned to various components of such metrics in evaluations of research administration. Thus, while complexity metrics are the most nuanced quantitative metrics and often present a more accurate account of productivity and performance, they alone may not always be sufficient for a comprehensive assessment.

Satisfaction surveys. In a departure from quantitative and objective complexity metrics, satisfaction metrics focus on how satisfied faculty and staff are with the services provided to them by offices of research administration and development. This information can be assessed using both quantitative and qualitative measures. Giese and Cote (2002) define the concept of customer satisfaction as “a summary affective response of varying intensity” with a “time-specific point of determination and limited duration, that is directed toward focal aspects of product-related experience” (p. ii). In the research administration context, customers are faculty and their support staff that use services of research administration offices. Along these lines, product-related experience is the research administration service itself and the value provided to the customer through the use of said service.

There exist few scholarly studies on faculty’s own perceptions of the administrative resources available to them in the conduct of research (Mullen, Murthy, & Teague, 2008). This leaves a large gap in any attempt to assess the success of research administration offices. As Dr. Sharon Cole notes in the context of describing changes in the research administration system to bring about growth and collaboration, “[r]esearch faculty are the generators of the grants administration workload and recipient of services; therefore, their opinions and participation are deemed important to the improvements of the system of research administration” (Cole, 2007, p. 19). Besch (2014) continues this line of argument, writing, “[a]n effective barometer for excellent research management will undoubtedly be how it is perceived by those who rely on it” (p. 1).

Despite this dearth of formalized scholarship, satisfaction surveys—surveys that include a faculty opinion component—have been used at a variety of institutions to evaluate institutional research resources. These include Cole’s study of faculty at several research universities, which used a non-statistically significant informal online survey distributed via email asking faculty what services they found lacking in existing research administration structures, and what changes were needed in the working relationship between administrators and investigators (Cole, 2007). Besch (2014) moved beyond a customer satisfaction survey to introduce a short, clearly written mixed methods study that she reports, “never failed to produce a rich set of responses and a real sense of how the office was performing” (p. 4). Overall those who use qualitative measures asking for client feedback about and satisfaction with research administration services report high-quality, useful data.

Limits of this largely qualitative and subjective method include a relatively low return rate for surveys among faculty. One survey reported a 20.6% response rate (Mullen et. al., 2008), another only 11% (Cole, 2007), while a third survey of both faculty and administrators rose from 20% to 35% over several administrations (Besch, 2014). However, as qualitative data involves rich and detailed responses, high quality and analytically valuable information can be gathered from a small response group despite the potential lack of statistical power.

Methods and Results

We present below three case studies, the first and second conducted by the Office of Research Administration, and the third conducted by the Office of Proposal Development at Tufts University. Each presents the methods and results of a unique metric analysis and/or a customer satisfaction survey designed to assess key metrics to analyze the success of services within each respective office. While each of these studies was a standalone effort with its own objectives, our goal in describing them together is to analyze the utility of varying methods in evaluating research administration of (1) quantitative metrics; (2) a quantitative satisfaction survey with limited qualitative questions; and (3) a mixed-method survey that evaluated satisfaction and learning using quantitative questions and equally weighted qualitative responses. In our discussion, we will assess this utility, as well as the limitations of each method, followed by examples of how inferences drawn from each can be used to gain or sustain competitive advantage.

Case Study 1: Office of Research Administration (ORA) Metrics Study

Background. The Office of Research Administration (ORA) provides pre-award and non-financial post-award services to Tufts University faculty and department administrators. ORA is representative of two distinct offices: one that serves the Boston Campus (Health Sciences) and the Grafton Campus (Veterinary Medicine), and one that serves the Medford Campus (Arts & Sciences, Engineering, The Fletcher School of Law and Diplomacy, and several Centers).

Methods. In order to assess the performance of the office on a variety of factors, a metrics study took place on the Tufts University Boston Campus during a three-month period of the 2013 calendar year (June through August), representing a quarter-cycle of annual pre-award activity.

The study tracked metrics relating to the four core ORA services: (1) review and submission of proposals; (2) processing of requests to change the award's budget (referred to as "re-budgets" below); (3) processing of requests to extend the award end date without additional costs (referred to as "no-cost extension requests" below); and (4) issuing sub-award agreements to other institutions where Tufts is the prime entity.

In order to quantitatively assess the delivery of these services, each of the four ORA-Boston staff members recorded twice a day all their actions relevant to each of the designated activities (see Table 1). Dates of actions were recorded in an Excel spreadsheet located on a shared drive, and each staff member was scheduled for unhindered daily access during two one-hour intervals, one in the morning and one in the afternoon. Once recorded, the data was used to map and analyze the processes as they progressed over time. It was hypothesized that analysis of metrics relating to documentation flow and length of time for each action would allow for the identification of bottlenecks and opportunities for streamlining as well as improving service delivery.

Results. Results of the study supported the hypothesis, as the metrics tracked uncovered addressable points of delay in each of the areas examined. For example, it was found that 33% of proposals during the study period arrived to ORA for review on the day of the submission deadline. This prevented the full review of these proposals and was correlated with an average resubmission rate of 1.27 (in this example, a resubmitted proposal is one which must be sent to a given funding agency more than once due to errors, warnings, or other deficiencies discovered shortly after the initial submission). It was concluded that additional time for review could reduce or eliminate the resubmission rate.

Results also indicated that 35% of re-budget requests made during the study period required revisions or additional information from the department before they were ready for processing by ORA. Further analysis revealed that only 11.5% of re-budgets processed during the study period required ORA involvement, as agency approval was unnecessary in the majority of the cases. Similarly, results captured that nearly half (44%) of no cost extension requests required additional information that had to be subsequently collected, increasing the time needed to complete the process. Finally, metrics concerning the sub-award process revealed that the largest bottlenecks were centered on the processes of gathering necessary information from a department and waiting for countersignature from the other party.

Case Study 2: ORA Customer Satisfaction Survey

Background. See background for Case Study 1.

Methods. In a separate effort following the case study described above, both Boston/Grafton and Medford ORA locations distributed an IRB-approved satisfaction survey during the three weeks in September–October 2013 to all three of Tufts' campuses. As ORA is a central pre-award office, customers for the purposes of this study were defined as: (1) faculty that either applied for or received at least one grant or other extramural award in the preceding 12 months; (2) department administrators that assist faculty with proposals; and (3) central post-award office staff. A total of 532 individuals were invited to participate, including 463 faculty, 53 department administrators, and 16 staff of the central post-award office. This study was not designed with a hypothesis, but

Table 1. Office of Research Administration (ORA) Metrics Tracked

Core Service	Metrics Tracked
Proposal Submission	ORA is first contacted about proposal ORA conducts initial review of proposal (if applicable) Number of revisions Internal forms received by ORA Full proposal received by ORA Proposal submitted to the agency Number of submissions (if applicable)
Re-budget Requests	ORA receives re-budget request ORA contacts department for revisions (if applicable) Department sends revisions (if applicable) ORA contacts agency for approval (if applicable) Number of contacts with the agency Agency returns determination (if applicable) ORA routes re-budget to post-award office
No Cost Extensions	ORA receives no cost extension request ORA contacts department for additional information (if applicable) Department sends additional information (if applicable) ORA contacts agency for approval (if applicable) Number of contacts with agency (if applicable) Agency returns determination (if applicable) ORA finalizes no cost extension and routes internally
Subawards (Tufts as prime)	ORA receives notification that sub-award is needed ORA contacts department for additional information (if applicable) ORA has complete information for sub-award ORA sends draft to department for review (if applicable) Department returns draft to ORA (if applicable) ORA sends sub-award to other party ORA follows up with other party (if applicable) Number of follow ups with other party ORA receives request for changes from other party (if applicable) ORA responds to other party (if applicable) Number of drafts exchanged (if applicable) Sub-award is executed by the other party ORA signs sub-award Fully executed sub-award distributed internally

rather to gather information about current levels of satisfaction with ORA that could later be used as a benchmark for evaluations and an opportunity for improvement.

The satisfaction survey (see Appendix A) was sent electronically using the Qualtrics online survey tool. It consisted of nine questions grouped as follows: two demographic questions (campus location, faculty or staff); three main questions designed to gather information about the volume

of grant activity and frequency of the individual's interactions with ORA; a general question about overall satisfaction with ORA services, followed by a detailed question about the respondents' satisfaction; and two open-ended questions asking respondents to explain their other answers.

The detailed satisfaction question presented a list of ten service metrics and asked respondents to rank satisfaction with each using a five-point Likert scale ranging from very satisfied to very unsatisfied. The service metrics listed for evaluation were: turnaround time; status updates; communication skills; attention to details; knowledge/expertise; professionalism; collegiality; responsiveness to customers' needs; help in managing the proposal time frame well; and quality and usefulness of information on ORA website. These metrics were selected for inclusion in the survey after conducting a thorough literature review of the performance measures used by other research administration offices in their self-evaluations, as well as the analysis of several existing survey instruments used by other universities in evaluations of their sponsored programs services (Utah State University Survey of the Division of Sponsored Programs; Barry University Office of Grants and Sponsored Programs Evaluation Survey).

The first of the two open-ended questions asked respondents to explain the reasoning behind any or all of the qualitative satisfaction scores they had assigned to the service metrics listed in the survey. The second gave them an opportunity to express any ideas and opinions about what ORA could do to further improve pre-award research administration at Tufts.

Of 117 participants that clicked on the survey link, 83 people (71%) completed the survey, translating to an overall completion rate of 15.6%. Faculty comprised 63% of respondents, while staff comprised the remaining 37%. Overall, 52 faculty members and 31 staff completed the survey. Of note, the survey received 82 responses to one or more of the open ended questions: 46 participants (55% of all responses) commented on what impacted their rating(s), and 36 participants (43% of all responses) commented on what ORA could do to better assist them with their pre-award needs.

Results. The short format required only a brief time and effort investment from the participants, potentially increasing the number of responses. While almost half of administrators (45%) who were invited to participate in the survey completed it, faculty members participated in smaller numbers (11% of those who were invited completed the survey). In analyzing the data, we noted that many participating faculty held a stronger opinion, either positive or negative, regarding ORA services, while the administrators' feedback was more evenly spread across the satisfaction spectrum. While this survey was not designed to explore in detail the services that were evaluated, results showed that it did provide a window for customers to express their satisfaction, both quantitatively and qualitatively.

The survey created a snapshot of faculty and staff satisfaction with ORA on various metrics, giving a baseline that can be used in future surveys, especially those following major change. In addition to quantitative information, insightful qualitative feedback on ORA services was also received. Overall, the majority (67%) of respondents were either very satisfied (28%) or satisfied (39%). An additional 24% of respondents were neutral (neither satisfied nor dissatisfied). A total of 9% (8 participants) were dissatisfied (7%) or very dissatisfied (2%), with all but one of the

dissatisfied respondents being faculty. In service metrics, collegiality and professionalism ranked highest in terms of satisfaction. Attention to detail solicited the most responses with some degree of dissatisfaction.

Case Study 3: Office of Proposal Development (OPD) Faculty Satisfaction Survey

Background. Founded in 2004, the Office of Proposal Development (OPD) at Tufts University is a central research development office that offers grant writing and proposal preparation assistance to faculty. Solely a pre-award office, services currently offered include grant writing; proposal editing and commenting for content; assistance with several other aspects of proposal submission, such as project management; funding opportunity searches and database training; and a variety of trainings and workshops focusing on aspects of proposal preparation.

Methods. For the purposes of this survey, faculty who had availed themselves of OPD services in the period between 2009 and 2014 and were still employed by Tufts were considered part of the target population, totaling 119 faculty. Faculty who met this definition were approached via email to ask for their participation. The survey remained open for a period of six weeks, with an initial request and three reminders sent via email. Faculty who consented to take the IRB-approved survey were directed to an online instrument built using the Qualtrics online survey tool.

The OPD provides skill-building training, as well as a ‘learn to fish’ model of proposal editing. In the ‘learn-to-fish’ model, the grant writer offers comments and edits to successive drafts of a proposal, engaging faculty in an iterative process that improves the current proposal while explaining and demonstrating best practices. The end goal of this process is to improve the faculty member’s proposal writing skills over successive interactions with the office. Given these services, constructs gathered from the literature (Campbell & Longo, 2002; Hoyt & Howard, 1978; Reif-Lehrer, 1992; Sridhar, 2009; Stein, Clair, Lebeau, Prochaska, Rossi, & Swift, 2012; Wasby, 2001) led to the inclusion of metrics relating to satisfaction with services provided, as well as to what extent faculty felt that their own proposal submission skills and confidence had improved after their experience working with the OPD. The survey used a combination of quantitative and qualitative questions to assess two major questions associated with these metrics, both having to do with the perceived benefits of using OPD programs: (1) To what extent, if at all, were you satisfied with the services you received from the OPD during your proposal preparation?; and (2) To what extent, if at all, do you perceive that your skills in grant writing and proposal submission have improved as a result of your work with the OPD?

This mixed-methods satisfaction survey (see Appendix B) asked a total of 23 questions, broken into four sections: (1) background information, which asked information about name (not required, as it removed anonymity) and rank, time at Tufts, number of grants applied to and received, and type of assistance received; (2) experience with the OPD, which asked both quantitative (on a five-point Likert scale from very satisfied to very dissatisfied) and qualitative questions relating to satisfaction with the OPD in general and with specific services; (3) grant submission post-OPD support, which asked quantitative (yes and no, as well as four- or five-point Likert scales tied to the construct of each question) and qualitative questions relating to the faculty’s perception of their grant application preparation abilities after their experience working with the OPD; and

(4), a conclusion section with an open-ended space to provide feedback. The survey was designed so that none of the questions required answers to advance to the next question or section. It was hypothesized that working with the OPD a) has a positive impact on confidence and skills related to pre-award proposal submission; b) increases faculty confidence in the preparation of grant applications, and c) is perceived as having a positive impact on faculty's ability to prepare competitive grant proposals.

Results. A total of 41 faculty clicked on the survey link, with 33 (27.7% of those who were invited) completing the full survey. Controlling for responses inputted over multiple days or hours, indicating that the survey was not completed in one sitting, the mean response time was approximately 10 minutes, with a median response time of approximately 7 minutes. Six responses of 33 were removed from analysis for lack of validity. These responses fell into two categories. Some provided feedback about other pre- or post-award support offices in place of or in addition to the OPD, leading to a lack of clarity about which answers referred to OPD support. Other faculty indicated they did not recall that they had received OPD support. The 27 valid responses represented 22.7% of the target population.

Of services provided by the OPD, grant writing/editing assistance was the most commonly used service, with 92.6% of respondents reporting that they had received writing/editing help. Sixty three percent of respondents report receiving help with extra-narrative elements (such as biographical sketches, resources pages, and letters of support), while 37% received project management assistance. Overall, 92.6% of respondents were very satisfied ($N = 17$) or satisfied ($N = 8$). Of the services offered, respondents were most satisfied with editing (96.3% very satisfied or satisfied, out of 27) and extra-narrative support (90.5% very satisfied or satisfied, out of 21.) Further, 96.3% of respondents would recommend the OPD to a colleague, and 96.3% would also use OPD services again.

Results also showed an increase in confidence in respondents' ability to prepare competitive grant submissions after their experience working with the OPD. Twenty-three of 27 respondents reported being very confident ($N = 17$) or confident ($N = 6$) in their ability to prepare competitive grant submissions; 77.8% of respondents reported that in their perception their experience working with the OPD had a high ($N = 11$) or moderate ($N = 10$) impact on their confidence level. An additional 6 respondents reported no impact. Additionally, 85.2% reported that their experience working with the OPD had a high ($N = 14$) or moderate ($N = 9$) impact on their ability to prepare competitive grant proposals. This indicates that the OPD's intervention has a positive impact on proposals that are not prepared using the office, an important finding that helps to confirm the 'learn to fish' model used by the office does indeed create perceived effects on faculty. One third of respondents ($N = 9$) reported using an OPD tool to teach a colleague, which indicates that OPD has been able to assist not only the faculty they reach directly, but also those faculty's colleagues. Thus, the study results provided confirmation of the office's wider than anticipated impact on the pre-award research enterprise at Tufts.

Results of this study support the hypotheses for the sample population, in that a majority of faculty who responded found that working with the OPD increased their confidence in grant submission and had a high or moderate impact on their ability to prepare competitive grant

proposals. Further, as anticipated, the pairing of long answer qualitative answers with related quantitative questions assessing key metrics led to a more detailed set of responses and more specific answers to qualitative questions, adding nuance and depth to the data overall.

Discussion

Utility and limitations of assessments using qualitative, quantitative, and mixed methods

The case studies described herein featured assessments using (1) quantitative metrics; (2) a quantitative satisfaction survey with limited qualitative questions; and (3) a mixed-methods survey that evaluated both satisfaction and learning using quantitative metrics and equally weighted qualitative responses. The type of findings and inferences that were made possible by the methods used, or the lack thereof, are discussed below.

Case Study 1: ORA Metrics Study. Results of this quantitative study were found to be rich and immediately useful in adjusting operational elements to improve work processes. This utility demonstrates the value of using quantitative methods tied to performance metrics to assess research administration tasks relating to timing and rounds of review. Such assessments can be implemented internally within research administration offices without the involvement of customers. They are the least time consuming assessments of the three we evaluated in terms of time to conduct (low) and demands on faculty and departmental research administration staff (none). However, the sole focus on operational dynamics failed to represent/assess the cultural dynamics. In this study, the lack of customer involvement makes it impossible to explore the departmental difficulties associated with each of the tracked processes.

Case Study 2: ORA Customer Satisfaction Survey. Findings from this quantitative satisfaction survey with limited qualitative responses demonstrated that involving customers gave access to broader data about the customer experience, adding the element missing in an internally focused qualitative-metrics-only assessment. Limitations of this method include a lack of actionable knowledge if not paired with a quantitative metrics assessment such as that in the ORA Metrics Study, which enables more thorough assessment by providing context for customer's answers.

Case Study 3: OPD Satisfaction Survey. Results of this mixed-methods survey with quantitative metrics and equally weighted qualitative responses demonstrated that when paired with quantitative outcomes that detail levels of satisfaction with specific services, the use of interspersed qualitative questions added richness and nuance to the analysis of what satisfies faculty. Narrative responses allowed faculty to explain why they were satisfied with OPD services. Responses such as, “[e]xtremely professional, courteous, competent and timely in terms of editing of research narrative, preparation of biosketches, and providing tactical and strategic advice on proposal structure” not only added depth of assessment, but were also useful to determine which OPD service provisions provide satisfaction. Limitations of this method include a larger time commitment for the OPD staff to review qualitative survey results, as well as the participants themselves to complete it. The amount of time necessary from participants, as well as the perception that a qualitative survey will be time consuming, may also depress responses.

Metrics and competitive advantage

Metrics such as those tracked in the three described studies have a dual function that is critical to the evaluation of an institution's central and departmental research administration offices, either separately or collectively, the combination of which create the research administration enterprise. First, they allow the institution to assess its research administration resources from the perspective of how they aid in the development of unique core organizational competencies (Rothaermel, 2013, pp. 88-90). The institution can use this resource-based view to support future investments in those resources needed to gain or sustain competitive advantage against peer institutions, or justify investments in research administration resources that have previously been made. Second, they allow the institution to evaluate alignment between its research administration goals, tasks, and people-information to optimize performance. This dual approach equips the institution to better position its research administration enterprise for success because it combines an evaluation of resources with information on performance.

Resources are more likely to lead to competitive advantage when they are Valuable, costly to Imitate, Rare, and Organized to capture value (the VIRO framework) (Rothaermel, 2013, p. 91). Valuable resources correlate with reduced administrative burden and/or increased satisfaction as both increase the customer's perceived value of the service provided (Rothaermel, 2013, p. 92). Such resources can be uncovered using quantitative metrics such as those outlined in the ORA Metrics Study. An outcome of that study was to redirect effort from day-to-day activities to re-mapping some of the processes that were tracked to remove bottlenecks. While this required a significant time commitment in an office that was understaffed, it improved service delivery and reduced administrative burden, increasing the value gained from ORA's resources. The value of resources can also be discovered through expressed satisfaction such as that qualitatively captured using the metrics outlined in the OPD Satisfaction Survey.

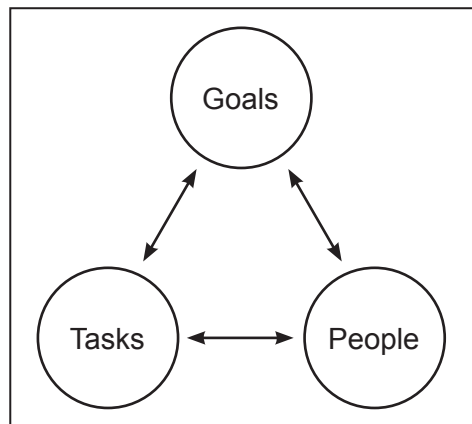
Resources that are rare are those that allow an institution to do better than its peers, or those that are used by an institution in a unique way compared to its peers. Costly to imitate resources are those that are expensive for peers to replicate in terms of procurement or time needed for implementation (Rothaermel, 2013, pp. 92-93). Satisfaction metrics like those outlined in the ORA and OPD Satisfaction Surveys can be used to benchmark an institution's resources compared to peer institutions. The OPD Satisfaction Survey demonstrated that services offered by this office are rare because of the long-term value that faculty received as result of the 'learn to fish' model. Another key finding, each staff member's contribution to faculty's grant development experience, highlighted the diverse and specialized skills and training of each staff member. The latter also demonstrated that OPD's resources are costly to imitate given the staff's specialized skill sets and the time investment necessary to cultivate successful relationships with faculty. These findings justify prior investments, and provide support for future investments by demonstrating that OPD resources are a source of competitive strength for the University.

In order to capture the most value from resources, there must be organizational structures and systems in place that exploit their competitive potential (Rothaermel, 2013, p. 94). Quantitative metrics, such as those outlined in the ORA Metrics Study, can be used to understand how structures and systems are being used, highlight where processes can be linked and consequentially, how

prior investments can be maximized and better utilized. Findings from this study determined that the no-cost extension review provides an opportunity for linking with the subaward process as it can serve as a prompt for extensions of subcontracts issued under the award. It is also a checkpoint for common areas of noncompliance, such as change in scope and personnel effort during the no cost extension period. This led to the revision of ORA's no-cost extension form to include these additional data elements. The ORA Metrics Study also identified that more value could be gained by utilizing the systems housed in other central offices at Tufts in the re-budget request process. Re-budget requests are now routed to the post-award office first, and to ORA second and only in instances where agency approval is necessary. This has exploited the competitive potential of these resources while maximizing prior investments.

For a university research administration office, metrics such as those outlined in the ORA Metrics Study and Customer Satisfaction Survey can be used to determine where there is misalignment between tasks, goals, and/or people. According to the Organizational Alignment Model (Figure 1), organizations develop an overarching strategy and define their goals in response to the external environment. To accomplish these goals, they create tasks and hire people to perform these tasks. In order for the strategy to be successful there must be alignment between the defined goals, the created tasks, and the hired people. It is from this alignment that the organization gains competitive strength (Lane, Maznevski, DiStefano, & Dietz, 2009, pp. 179-185). Ideally, identified misalignments will lead to changes that will help build the skills needed to perform the tasks required to meet an organization's goal(s), creating the alignment that is critical in driving future performance. An example of this type of alignment, the ORA Metrics Study highlighted that a majority of the bottlenecks in the existing processes for re-budget and no-cost extensions requests were attributable to a disconnect at the department level. More specifically, the disconnect was present between the associated tasks and the skill-set of the individuals performing these tasks. As an outcome of this study, as well as other assessment initiatives, efforts are currently underway to create a standard level of performance. This will be accomplished by re-defining and re-designing positions so that they have a stronger research administration orientation and by providing more formalized and institution-driven training.

Qualitative feedback is also useful in discovering misalignment between faculty's perception of the goals established by an organization for its research administration operation, and the actual goals, tasks, and people assigned to the research administration enterprise. This issue is typified by the results of the OPD Satisfaction Survey, as faculty respondents requested services that did not align with university or office-set goals. Knowledge about this disconnect allows for better communication of existing university and office goals and for evaluation of the office tasks for alignment



Note. Lane et al., 2009

Figure 1. Organizational Alignment Model.

with faculty's goals. Greater alignment between the two can alter the respective contribution of OPD and faculty to the task at hand, and ultimately drive performance.

Conclusion

These findings demonstrate that the types and combinations of methods most useful in evaluating an office of research administration are dependent on several factors, including the goal of evaluation, types of available baseline data, the amount of time and institutional support available to the investigator, and the amount of time and effort that can be asked of survey respondents. Used in combination based on the needs of a given office, the approaches employed in each case study offer examples of how to usefully assess the impact, strengths, and weaknesses of a research administration office, and can be used to gain or sustain competitive advantage and position the research administration enterprise for future success. While it is recognized that evaluation metrics can be influenced by external forces (i.e. the PESTEL framework), the methods used in the three described case studies were not designed to assess the potential impact of said factors. These forces were instead referenced to highlight the need to look internally at the institution's resources when evaluating its research administration enterprise. Additional research on external factors is warranted to explore ways to assess the impact of such factors on research administration metrics.

Authors' Note

This paper is the result of the analysis carried out by employees of Tufts University as part of their institutional duties. However, this paper is the authors' sole responsibility and does not purport to represent the views of Tufts University.

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References

- Besch, J. (2014). Using a client survey to support continuous improvement: An Australian case study in managing change. *Research Management Review*, 20(1), 1-10.
- Davis-Hamilton, Z. (2014, July). Do we measure up? How research administration offices evaluate their services. *SRA Catalyst – The Pulse*. Retrieved from <http://sra-catalyst.srainternational.org/july-2014/contributed-columns/the-pulse>
- Campbell, J. D., & Longo, D. R. (2002). Building research capacity in family medicine: Evaluation of the Grant Generating Project. *The Journal of Family Practice*, 51(7), 568–569.
- Cole, K. (2010). *Principal investigator and department administrator perceptions of services provided by offices of research administration at research universities* (Doctoral dissertation). University of South Florida.
- Cole, S. (2007). Research administration as a living system. *The Journal of Research Administration*, 38(2), 14-27.
- Giese, J., & Cote, J. (2002). Defining customer satisfaction. *Academy of Marketing Science Review*, 2000(1). Retrieved from <http://amsreview.org/articles/giese01-2000.pdf>
- Haines, N. (2012). Metrics for research administration offices (Parts 1/2). *Journal of Clinical Research Best Practices*, 8(6/7). Retrieved from <http://www.huronconsultinggroup.com/>
- Hoyt, D. P., & Howard, G. S. (1978). The evaluation of faculty development programs. *Research in Higher Education*, 8(1), 25-38. doi:10.1007/BF00985854
- HuronEducation. (2012). *Wayne State University: Organizational review of research administration*. Retrieved from http://research.wayne.edu/about/continuous_improvements_initiatives/wsu_research_assessment_final.pdf
- Kreimeyer, M., & Lindemann, U. (2011). *Complexity metrics in engineering design: Managing the structure of design process*. Retrieved from springer.com/978-3-642-20962-8
- Lane, H. W., Maznevski, M. L., DiStefano, J. J., & Dietz, J. (2009). *International management behavior: Leading with a global mindset* (6th ed.). West Sussex, UK: John Wiley & Sons, Ltd.
- Melin-Rogovin, M. (2012, March 27). Research administration metrics: Measuring, managing and targeting resources for accountability. *Research Administration Nation*. Retrieved from <http://researchadministrationnation.com>

- Mullen, C. A., Murthy, U., & Teague, G. (2008). Listening to those we serve: Assessing the research needs of university faculty. *The Journal of Research Administration*, 39(1), 10-31.
- Proposal Complexity Scoring Matrix*. (2014). Moderas. Retrieved from moderas.org
- Reif-Lehrer, L. (1992). Teaching good communication/proposal-writing skills: Overcoming one deficit of our educational system. *Journal of Science Education and Technology*, 1(3), 211-219.
- Rothaermel, F. T. (2013). *Strategic management concepts*. New York, NY: McGraw-Hill Companies, Inc.
- Sridhar, A. (2009). Grantsmanship and the university: Five strategies for grant professionals working with faculty. *Journal of the American Association of Grant Professionals*, 7(1), 9-15.
- Stein, L. A. R., Clair, M., Lebeau, R., Prochaska, J. O., Rossi, J. S., & Swift, J. (2012). Facilitating grant proposal writing in health behaviors for university faculty: A descriptive study. *Health Practice*, 13(1): 71-80.
- Taylor, J., Lee, J., & Smith, M. (2014). *Using business intelligence to drive research administration*. Presented at INORMS 2014 Annual Conference: Enabling the Global Research Enterprise from Policy to Practice, Washington DC, April 10-13, 2014. Retrieved from inorms2014.org
- University of Minnesota. (2008). *PEL Research Metrics Project*. Sponsored by Schumi, W. Retrieved from http://conservancy.umn.edu/bitstream/91774/1/ohr_asset_097544.pdf
- Wasby, S. L. (2001). Proposal writing: A remedy for a missing part of graduate training. *PS: Political Science and Politics*, 34(2): 309-312.

Appendix B

Tufts Office of Proposal Development Satisfaction Survey

Thank you for agreeing to participate in this survey! The Tufts Office of Proposal Development (OPD) is evaluating the satisfaction of faculty with the OPD and the services that we provide, as well as the perceived effects of our services. The survey should take between 15-20 minutes, and will include questions about your background in grant submission, your experience working with the Tufts OPD, and any new grant submissions since that interaction.

Background Information

The questions in this section will ask you for information about yourself and your position at the university. You will also be asked questions about your previous grant submission experience, and the types of assistance you have received from the Tufts OPD.

1. We will start with a few questions about your position at Tufts. If you would like anonymity, please skip these questions. If you choose to answer this question you are providing consent for the investigator to contact you with follow up questions based on your responses below, regarding clarifications of or expansions on your answers.

- Name
- Position
- Date of Hire

2. Please select the number of grant applications on which you were listed as Principal Investigator (PI) (or equivalent) either at Tufts or at another institution, during the period between 2003 and 2014.

- 0-1
- 2-3
- 4-6
- 7-9
- 10+

3. Of the grant applications above, approximately how many have been funded?

- 0-1
- 2-3
- 4-6
- 7-9
- 10+

4. Please check all types of assistance you received from the OPD during your submission. If you received a type of assistance that is not listed, please write it in below.

- Funding Search/Database Instruction
- Commenting/Editing of Research Plan
- Project Management
- Extra-Narrative (e.g. Biosketch, Resources)
- Seminar
- Other

Experience with the Office of Proposal Development

In this section you will be asked to discuss your experience working with the OPD. Some questions will ask you to rate your satisfaction with experiences and services on a scale. Others will ask you to describe your thoughts on the services provided.

1a. Please rate your satisfaction with the overall services provided to you by the OPD, using the scale below.

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied

1b. Please explain your rating in the space below, citing specific examples where available.

2a. Please rate your satisfaction with the specific services listed below, with Very Satisfied indicating that the service provided was excellent, and Very Dissatisfied indicating that the service provided was poor. If you did not receive a service, please select 'Not Applicable.'⁹ (Note, scale for all Very Satisfied, Satisfied, Neutral, Dissatisfied, Very Dissatisfied)

- Funding Search
- Project Management
- Readings/Commenting
- Extra-Narrative (e.g. Biosketch)
- Seminar

2b. Please explain your ratings in the space below. What exchanges with members of the OPD team were either particularly satisfying or dissatisfying? Please provide specific examples if available.

3a. Please think back to the submission(s) with which you were assisted by the OPD. What elements of support would you describe as the most helpful to you during the proposal development process?

3b. What elements of OPD support would you describe as the least helpful in the completion of your proposal?

Grant Submission Post-OPD Support

This final section of the survey will concern your perception of your grant application preparation abilities after your experience working with the OPD. Some questions will ask you to rate your abilities on a scale; others will ask you to describe your thoughts.

1. Thinking about your experience working with the OPD, what changes, if any, do you perceive in your ability to prepare grant submissions?

2a. Please rate your current confidence level in your ability to prepare competitive grant submissions, using the scale below.

- Very Confident
- Confident
- Neutral
- Unconfident
- Very Unconfident

2b. Please rate your perception of how working with the OPD has affected your confidence level in your ability to prepare competitive grant submissions, if at all, using the scale below.

- High Impact
- Moderate Impact
- No Impact
- Moderate Negative Impact
- High Negative Impact

3. Please rate your likelihood of applying for future grant funding, using the scale below.

- Very Likely
- Likely
- Unlikely
- Very Unlikely

4. Please rate your perception of how your work with the OPD has affected your likelihood of applying for future grant funding, if at all, using the scale below.

- High Impact
- Moderate Impact
- No Impact
- Moderate Negative Impact
- High Negative Impact

4b. Please rate the impact that working with the OPD has had on your ability to prepare competitive grant submissions, if any.

- High Impact
- Moderate Impact
- No Impact
- Moderate Negative Impact
- High Negative Impact

5. Have you used a tool or strategy learned from the OPD to assist or instruct a colleague?

- Yes
- No

5b. If yes, please discuss below, using specific examples if possible.

6. Please rate your likelihood of suggesting that a colleague contact the OPD for support, using the scale below.

- Very Likely
- Likely
- Unlikely
- Very Unlikely

7. Please rate your likelihood of using OPD services again, using the scale below.

- Very Likely
- Likely
- Unlikely
- Very Unlikely

Conclusion

Please use this space to provide any feedback on the survey instrument, or other comments about your experience with the Office of Proposal Development.

Do you consent to the inclusion of text from your responses in reports, papers, or presentations? Any attributions made will remain anonymous.

- Yes
- No

This concludes the Tufts Office of Proposal Development New Faculty Satisfaction Survey. Thank you very much for your time and effort in answering our questions!