Value in the International Space: Examining the Challenges and Barriers on Research Administration International Research Teams

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Abstract: *International research administration continues to draw significant interest in its practice. As projects and associated problems become more global, collaboration between teams in different countries also will grow in size and in complexity. This study set out to understand the challenges of such collaborative efforts by research administrators within international research teams. The result was an identification of characteristics that members of multi-national teams possess. The study found that training is critical to collaborative teams, cultural communication (or lack thereof) remains a significant barrier, and formal and defined roles and responsibilities for team members supports good governance. These observations beget best practices that can be used by research administrators and managers who participate in international team projects. It is recommended that a training and compliance mechanism be developed and customized per project. These mechanisms would discuss potential cultural differences, provide communication guidance, and specify roles and responsibilities for each team member so as not to duplicate efforts and to produce high levels of organization and coordination.*

Keywords: *Research administration and management, collaboration, partnerships, international research administration, multi-national teams*

Introduction

Research administrators are increasingly making significant contributions to development and delivery of complex research projects across the globe. While many research administrators contribute immense value when managing a research project in their home country, the introduction of partnering individuals or teams from other countries provides an additional wealth of opportunities and challenges in achieving efficacy and effectiveness. A number of studies have discussed international research administrators and the research administration as a profession (Kirkland, 2009), support between community and university research partnerships (Tremblay, 2015), demographics (Kerridge & Scott, 2018), or research partnerships between the community and universities (Bivens et al., 2015). However, few have explored the role that research administration can have in developing and assuring valuable research internationally, particularly within multi-national teams.

On a broader scale, working to manage and administer international research projects requires complete adherence to research integrity. Conflicts or neglecting to disclose relationships with

other foreign countries may jeopardize future funding for organizations, depending on conflict of interest policies and agreements. This has been particularly true among organizations in the United States; efforts have been made to combat undue misappropriation of grants and awards as well as intellectual property and research by foreign and domestic stakeholders (Balser et al., 2018).

The primary aim of this study was to understand the challenges of such collaborative efforts to research administrators within international research teams. The author reviewed existing literature on international collaborations as a framework to develop and administer an online international survey instrument for research administrators and managers. The aim of the survey was to identify the characteristics of their multi-national collaborative team experience in an effort to add to the existing knowledge base.

The specific objectives of this work were to understand how the role of research administration can add value to international research throughout a project lifecycle including set-up (pre-award), project management, and delivery (post-award). It sought to identify any challenges faced by research administrators when working with multi-national teams, and to suggest how these challenges may be overcome (e.g., via training, a common approach and process, appreciating cultural norms, etc.) to increase efficiency, effectiveness, and project success including recommendations, best practices, and deliverable production.

Literature Review

In research administration, collaboration can be considered a strategy that allows businesses, nonprofits, agencies, researchers, and other stakeholders to achieve a vision that would not be possible, or would not be as successful, if working independently (Gajda, 2004). While literature related to the specific processes of research administration team collaboration within multi-national groups is scant, studies on international research and collaborative practices are of value. As Coccia and Bozeman (2016) point out, research collaboration scholarship has received much attention in part due to its theory and process in shaping the research field. Because of this popularity there have been quite a few definitions of collaborative partnerships. It is useful in this research to provide a definition of collaborative partnerships. Gronski and Pigg (2000) defined partnerships within a collaborative approach as an "interactive process among individuals and organizations with diverse expertise and resources, joining together to devise and execute plans for common goals as well as to generate solutions for complex problems" (p. 783). As global competition in innovation continues for institutions, individuals, and countries alike, those stakeholders who collaborate with others may gain an edge.

Definitions of Collaboration

Collaboration has been found to be necessary for some singular entities to remain competitive in a growing research environment. Thomson et al. (2007) provide a conceptualization of collaboration in differing subjects. Because collaboration is at the heart of the idea of international research teams, it is important to explain its characteristics. First, collaboration is recognized as

a multi-dimensional framework (Thomson et al., 2007), with a potential distinction between national and international as one context. Second, as Kwiek (2020) states, academic type, national reward structure, and institution type are among the factors that influence scientists on engagement in international research collaboration. Third, collaboration, as a focus of research, enjoys a copious amount of study with much of the literature related to networking between stakeholders of all sectors (Segal & Gerstel, 2019). It is important to use these characteristics to define collaboration. This paper uses Thomson et al.'s (2007) definition of collaboration. In it, collaboration is defined as a process by which autonomous or semi-autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is a process involving shared norms and mutually beneficial interactions. This definition emphasizes that collaboration is a multidimensional, variable construct composed of five key dimensions, two of which are structural in nature (governance and administration), two of which are social capital dimensions (mutuality and norms), and one of which involves agency (organizational autonomy).

Project Management in Collaborative Teams

The critical need to develop a project management process for effective multi-national collaboration has been discussed within the context of clinical trials (Gist & Langley, 2007). It is important to understand the project management process because it informs the governance structure in research administration. Literature in this area outlines how adopting certain approaches to project management can streamline financial reporting, delineate a clear distinction in decision-making responsibilities in both management and investigation, and reduce risk for the team. Research administrators must be familiar with policy and governance on a variety of subjects in countries aside from their home country. These subjects include statutory and regulatory requirements, terminology and language, and the use of electronic application systems that are funder required (Langley & Ofosu, 2007). Here, clinical trials show that rules are needed to be an effective team.

Specific subject matter literature further supports this point. Freshwater et al. (2006) states that in the area of international research collaboration, attention should be paid to geopolitical, religious, and social differences across healthcare systems. A literature gap occurs when studies do not explore the roles of research administrators in collaborations but simply on collaborations and when they may not accurately reflect the research administrators' points of view. There is still much to learn about the role of collaboration which can influence communication, professional development, relationship building, and cultural competency for research administrators.

Collaboration in the International Space

Literature in the international space outlines another important factor: the impact of cultural practice. Some argue that a focus on internationality is needed given the growing importance of collaboration in research and that attention should be paid to robust and effective delivery of project management in research. Spolander et al. (2014) state that though similar typology and terminology in the social work field are used at the international level, the nature, practice, context, and meaning of the practice is markedly different despite any consistent terms. Eglene and

Dawes' (2006) multi-national work found the importance of recognizing culturally equivalent concepts and cultural dynamics on multi-national research teams. Therefore, agreement and understanding of the terms and language used in research within international teams is vital. Science-based collaborations present opportunities to expand research to different parts of the globe. However, there is evidence that the success of these collaborations is limited by cultural or regulatory issues (Frenken et al., 2007; Ponds, 2009). Coccia and Bozeman (2016) discuss a National Science Foundation analysis which found an acceleration of collaboration patterns in primarily applied fields including medical sciences, social sciences, geosciences, agricultural sciences, and psychology. Contrasting this with basic fields such as math and physics which have yet to receive benefits related to collaborative work, research administrators may be focusing on specific disciplines.

Relatedly, perhaps due to growth and recognition of their importance, research intensive countries appreciate the extensive possibilities presented by successful partnerships. International research administrators will find that there is significant opportunity for collaborative research internationally. This is seen in the continued proliferation of partnerships through developing and emerging research-intensive countries (Langley & Ofosu, 2007; Gist & Langley, 2007), professional associations (Langley & Ofosu, 2007), and integrative educational collaborative spaces (Gallicchio, 2007) using models of best practices on improving technology, science, and compliance in order to make the process as seamless as possible for all organizations involved. Collaborative networks developed by research consortiums have committed to free and open sharing to produce generalizable research and information sharing (Vanderbilt & Gaiser, 2017).

Semali, Baker, and Freer (2013) describe the four determinants for a successful partnership between African countries and their multi-national counterparts in the United States as expertise, infrastructure, incentives, and patience. Therefore, while there is a healthy amount of literature related to the potential of international collaboration, there are barriers to general research collaboration and specifically multi-national team networks. Barriers may include history, language, cultural traditions, geographical accessibility, organizational resources, and individual participants' expertise and administrative knowledge (Kwiek, 2020; Hoekman et al., 2010, Freshwater et al., 2006; Luukkonen et al., 1992).

Compliance in Collaborative Teams

Finally, the issue of compliance warrants discussion among multi-national research teams. The United States has had several cases related to foreign interference with intellectual property and funding mechanisms (Bock, 2019; Goldberg, 2019; Silver, 2020). Undue interference can hinder researchers' ability to work with other researchers and administrators internationally (Balser et al., 2018), leading to problems recruiting talent from international spaces (Chu, 2020) and causing major fiduciary and in some cases criminal harm to institutions and individuals involved (U.S. Department of Education Office of the General Counsel, 2020). Chu (2020) states that to mitigate such risks, research administrators should work collaboratively with faculty, leadership, and managers to develop and implement controls that would protect institutions and researchers engaged in international work from foreign interference. A Department of Education report

(2020) states that auditing and best practices in auditing oversight are necessary to broker increased compliance. However, an important consideration about any new system or policy to prevent foreign interference is that it must avoid xenophobia, racial profiling, political rhetoric, and any other threats, and its communication must be clear and objective (Ellis & Gluckman, 2019). Chu (2020) infers that policies and procedures must emphasize "international support for a global workforce and international collaborations" (p. 15). Collaborative teams should take great care to draw on examples from a diverse group of people, languages, cultures, and modalities via training prior to team development and in concurrence with the research project..

Rationale for Study

The literature clearly presents some disparities that are worth further study. There have not been many contributions related to the transactional costs of collaboration or present gaps within international collaboration among teams, and especially not conducted from the perspective of the research administrator or research manager. Furthermore, the idea of international research collaboration is not a new concept; this theory has seen its share of trials and challenges. Semali et al. (2013) posit that many assumptions between developed nations and their emerging counterparts led to unsuccessful or barely successful outcomes for a number of reasons, including poor logistical support, immaterial guidelines and policy, inconsistent leadership, and meager financial resources. Many assumptions were rooted in passive stereotypes of emerging countries or in the control of the developed nations because they were the primary source of funding ("power of the purse," if you will) and used the decision-making structure of larger universities or organizations.

Methodology

The survey was designed by the author and an SRAI mentor with expertise in international research administration. The author received ethical approval from the University of Central Florida (UCF)'s Institutional Review Board (IRB) prior to administering the survey. Copies of this protocol were made available to all respondents. Post-IRB approval, the survey was sent to the INORMS Council for review. After their approval, the finalized Qualtrics online survey was sent to individual members of INORMS institutions. To get a global perspective of persons, the INORMS Council was involved in assisting the dissemination of this survey. Research administrators were the target group, but previous or current participation within international collaborations was not a requirement for participating in the survey.

The survey was open from May 15 to June 30, 2020, for additional responses. The original sample yielded 77 responses. Due to the dissemination of the survey occurring during the height of the COVID-19 pandemic, multiple requests were made to remind respondents to complete the survey and the survey was extended beyond its initial one month period for a total of six weeks, providing another 65 completed responses with a total of 142 responses. After conducting a power analysis of the prospective sample, it was determined that the sample size was slightly smaller than the 80% power threshold; however, the size is equivalent to examples from the literature in this field, and even slightly larger than some relevant studies.

Throughout the pre-planning phase of the project, the author sought to understand the impetus for and value of international collaborations among research administrators and managers. This initial planning and research with their SRAI advisor contributed to the selection of which populations and characteristics would be the focus of the survey questions. The questionnaire was developed to gain perspectives on several areas: (1) experiences with international collaborations as a research administrator in any or every stage of a research project; (2) experiences with any challenges in research administration pertaining to working with multi-national/international teams; and (3) discussion of best practices related to outlined international collaborative experience(s). Demographical questions were also asked. The survey asked those participating to respond to open-ended questions, Likert-scale questions, closed-ended questions, and 'yes'/'no' questions. For open- and closed-ended questions, responses were coded to account for specific themes. Multiple themes within a response were coded separately to account for each theme.

The data in this paper stems from this survey, which is rooted in the existing literature but was also developed through the exploration and refinement of a framework built on the concepts of multi-national teamwork and collaborative enterprises. Additional considerations by research managers and administrators with experience in international collaboration were made throughout the process of methodological development. While the study was open to any number of participants, the sample size was produced with generalizability in mind so that the results could speak to the population and would be large enough to conduct the research yet still be manageable (O'Leary, 2017).

Analysis and Results

Demographic Summary

The following results from 142 respondents are presented by subject/topic/theme in accordance with the survey areas. The characteristics surveyed were selected to get a full picture of professional expectations and actions of those involved in international research collaboration. They are rooted in characteristics you may find in collaborative team literature with elements adjusted to fit the specific needs of a research administrator/manager.

Training and Development in Multi-National and International Collaborative Teams

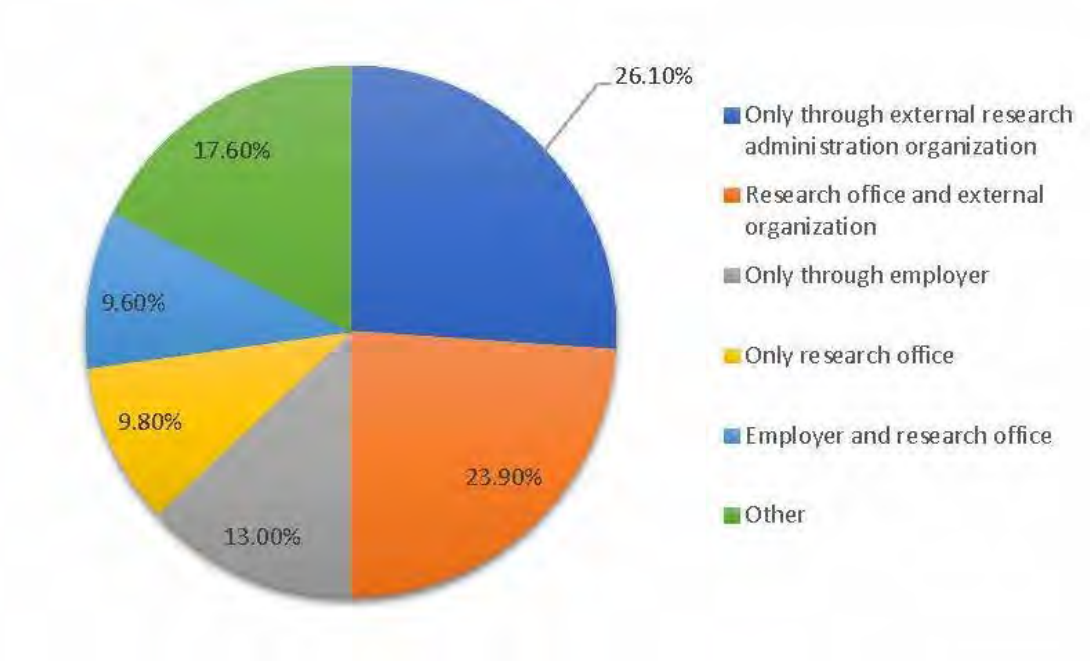

Figure 1. Training Methodology

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Figures 1 and 2 depict the methods by which training was delivered. Training delivered via an external organization accounted for 26.1% of respondent experience, while 23.9% received a combination of research office training and external organization training. Only 13% received training solely through their employer. The nature of delivery tended to take place in person (51.1%), followed by training both in person and online (42.2%).

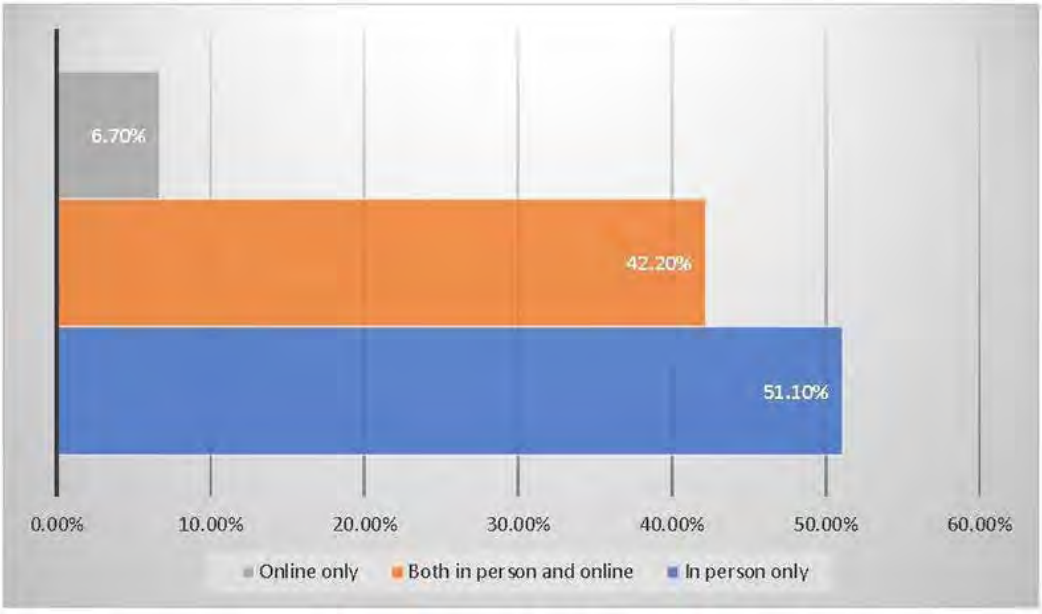

Figure 2. How Trainings Were Delivered

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Figure 3 depicts the effectiveness of training. Of those respondents that received training, 46.5% believed the training and development received specifically to support international projects was moderately effective, followed by very effective (37.2%), extremely effective (14%), and slightly effective (2.3%).

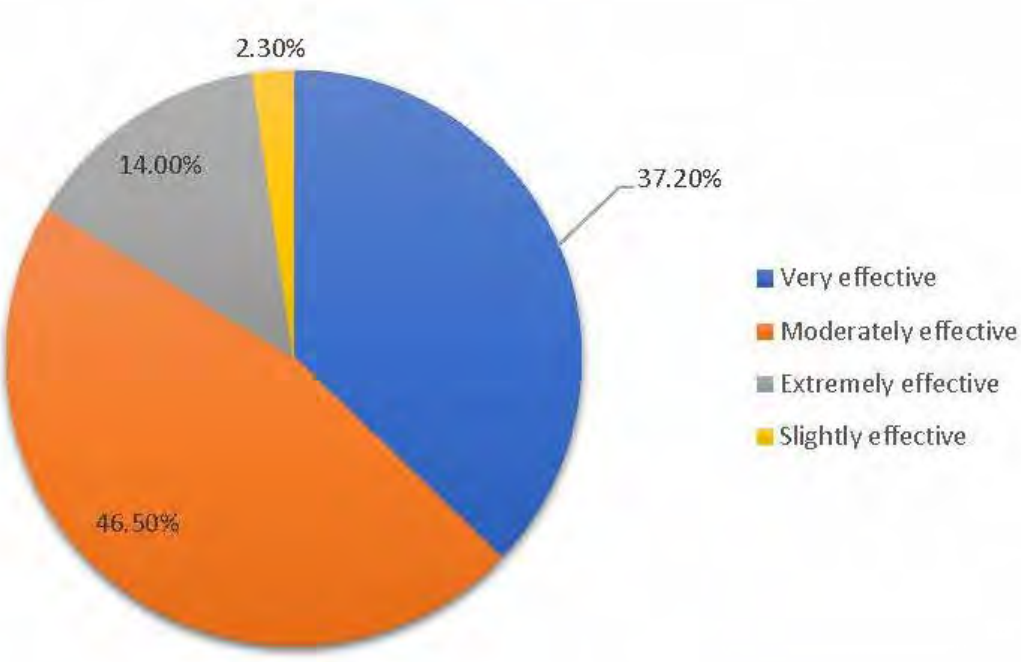

Figure 3. Effectiveness of Training and Development

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A Pearson's correlation was conducted to determine if there was a relationship between the delivery of training method and the respondents' effectiveness ratings. The effectiveness of training was strongly related to the type of training received overall ($r = .842$, $p > .001$), with training delivered through an external organization more likely to be found very effective or extremely effective. Training received through an employer was more likely to be rated moderately effective.

Qualitative and Quantitative Summary of Survey Findings – Challenges & Barriers

Challenges encountered by research administrators when working in international projects

Various analyses were used to examine the responses related to identifying challenges or barriers when conducting multi-national collaborations (see Table 1). Findings indicated that there was an evenly distributed focus on what respondents found to be challenging, particularly in the top six barriers.

Table 1. Major Team Challenges/Barriers in International Research Administration Collaboration.

Challenge/Barrier	**Percent Responded**
General Communication (i.e. language barriers, time zone differences)	13.6
Compliance and Monitoring	13.2
Contract and Approval Process and Timelines	12.9
Policy Regulations and Export Controls	11.6
Fiscal Reporting/Accounting Requirements	11.3
Development of Relationships between Collaborators	10.9
Size of Team/Scope of Project	7.9
Deliverable Requirements and Deadlines	7.3
Intellectual Property	5.6
Dissemination of Information upon Completion	3.3
Other Issues	2.3

The most challenging areas were general communication (13.6%), compliance and monitoring (13.2%), and contract approval process and timelines (12.9%). Lesser barriers included information dissemination upon completion (3.3%), intellectual property (5.6%), and deliverable requirements and deadlines (7.3%). This suggests that people-centered issues such as interpersonal communication, compliance, and negotiation are among the most difficult challenges to overcome within a multi-national setting.

Support of translators in communication

Overall, most people (79.3%) have not used translators to overcome any communication barriers that may occur between team members during an international collaborative project. Of those that have not used translators, 35.2% indicated that they were ambivalent as to their use. This indicates the need to be at times selective of the investment of translators and ensuring that any communication solutions pick up on the nuances of the team, cultures, and languages. One size does not fit all.

Seventy-two percent of those that had used translators believed that the translators possessed strong knowledge of the languages and cultures and were of benefit to the project. Interestingly, 28% felt the translators did not have the necessary knowledge of the languages and cultures involved. A Pearson's correlation was conducted to determine if there was a correlation between the use of translators and the presence of communication issues. There was no statistically significant correlation between those that had used translators to alleviate barriers and those

that still reported communication issues ($r = .022$, $p > .001$). There were statistically significant correlations however, between those who had used translators and found that they have possessed strong knowledge of languages and cultures and those that had used translators to alleviate barriers in communication ($r = .618$, $p < .001$). This suggests that the use of knowledgeable and experienced translators within a team can add value to the efficiency and effectiveness of multi-national team projects.

Areas of support

Research administrators were asked what kind of educational support should be offered to team members in multi-national collaborative teams. They could select as many support offerings as they believe are needed. Educational support requirements were selected in the following way: regulations (15.7%), followed closely by intellectual property and related items (15.4%), funder regulations and expectations (14%), terminology, language, and typology (13.7%), stakeholder engagement (13.6%), routine auditing practices (12.5%), reporting requirements (10.2%), budget management (9.9%), proposal writing (6.1%), and other (2.6%).

Value added experiences in research administrative roles and responsibilities within international collaborations

When asked which areas would enhance formal agreements on roles and responsibilities among collaborators, respondents answered in the following manner: better defined roles and responsibilities (38.0%), followed by timelines and deliverables (29.6%), and policy language (26.1%).

As part of these roles and responsibilities, respondents were asked to describe their experience and the skills required in collaborating with multi-national teams. The experiences of each research administrator have been categorized into the following topics. The following is a synopsis of each category and experiences borne therein:

- *Relief of Administrative Burden for Principal Investigators*: Research administrators relieve the administrative load for principal investigators throughout much of their projects. Respondents mentioned that their role is to take the burden and stress of administration from the PIs, allowing them to concentrate on research. They also stated that being aware of the policies and procedures allows them to facilitate communication between collaborators. Other respondents viewed their position as neutral and helping to create relationships and build connections between individuals and institutions.
- *High Level of Organization and Coordination*: Research administrators often have an ability to organize and synchronize procedures and policies of a project as a value-added practice. Respondents stated that research administrators develop organizational skills and keep projects on track while adding value by being the single point of contact and taking on the role of coordination. One respondent mentioned, "It helps when we can build a relationship with a peer in the overseas institution who is in a similar research administration role though this isn't always possible especially when working with LMICs who may be under resourced."

- *Increased Knowledge and Experience*: Broad expertise and understanding of complex projects are crucial to the role research administrators can play, as they aid in knowledge transfer and enhance cultural experience and understanding. One respondent noted a key role is "Making stakeholders aware of fundamental differences in higher education structures, practices, and norms between partner countries." For example, "similar-sounding terms can be used for fundamentally different levels/concepts which can lead to systemic confusion. Research administrators are ideally positioned to proactively and reactively identify, mitigate, and educate in relation to such issues0—ideally before they escalate to fundamental misunderstandings that can cause delays."
- *Understanding of Technical Role*: Appropriate handling of technical requirements, including policies and procedures, is another responsibility that is critical to international collaborations according to respondents. They stressed that understanding funder terminology, budgets, requirements, and compliance is paramount, as is clarifying requirements which explain implications of contracts or policies. Respondents specifically mentioned navigating funder terms and conditions to enable research in the face of funding restrictions and potential conflicts.

Discussion & Recommendations

The research managers and administrators provided invaluable insight into the characteristics of their work in international and multi-national team collaborations. They highlighted evolving anxieties related to the work, yet presented value-added experiences and recommendations that would aid in the development of best practices in international collaborations moving forward. The sample set was generalizable within the context of international collaboration scholarship in research administration, which provides confidence in the findings. The following are some points of reflection based on the analysis of this study. From these responses we infer best practices based on experiences encountered. These sections are based on the recommendations that respondents offered and what was inferred from the data.

Training is helpful to collaborative teams

Training is valuable both for specific project management competencies and knowledge of relevant governance and compliance requirements, but most importantly, training increases cultural awareness and understanding. These positive attitudes then seep into daily activities including negotiation, planning, communication, and shared understanding.

Research managers and administrators indicated that they have not received much formal training or development related to managing international collaborations. Those that had received training usually obtained it via face-to-face or peer-to-peer training from an external organization or external research organization and found it to be moderately to very effective. Very few found it to be minimally effective, indicating that training was helpful in the understanding of multi-national and collaborative teams. The findings strongly suggest that professional development and educational training are deficient within the space of complex international collaboration.

It is advised that multi-national teams receive more preparation and continual instruction to prepare those in different career or experience phases. Experts with this specific knowledge need to make this training more available to others for optimal success.

Cultural communication skill development and translation are useful when thoughtfully applied

While expanding training overall is a significant recommendation, understanding the importance of culture and language for communication skills is the key aspect of these findings. Specific skill training in areas such as complex reporting, export controls, and policy regulations and guidelines can also help research administrators and managers achieve success in managing a project with many moving pieces. Additional workshops or panels on action areas including timelines, deliverables, and expectations are an important part of the information dissemination process. The preference of the respondents in this survey was to conduct training face-to-face; however, given that the analysis was conducted in the middle of a global pandemic, adapting training to a virtual workforce via videoconferencing needs to work in concert with in-person training. Additionally, research administration and management organizations may want to invest in training during annual or biannual conferences and meetups. Most of these conferences are well attended by a variety of RMAs, and conference education may be an effective way to develop further proficiencies and attract potential partnerships.

Related to communication, translators were not used by a large majority of our respondents, and of those that had used them, over a quarter felt that the translator did not possess strong knowledge of the languages and cultures involved. This is to be expected considering that many of the people surveyed were on the fence about the utility of translator use in their project. Regarding the type of support respondents wanted in their work and training, most preferred education on stakeholder engagement, regulations, and intellectual property. The fact that preferences were so evenly distributed may indicate that each area has equal importance for team members. Therefore, the use of knowledgeable translators may prove an effective resource. Further research on the different experiences of using translators may be useful, as the study suggests there are a myriad of reasons, from financial costs to pinpointing a translator with a specific skillset, as to why their impact may not be effective. The general assumption is that translators are useful if they are highly qualified specialists and are integrated into the project team.

The study also suggests that research administrators need to be intentional and thoughtful when approaching cultural differences for each team member. Research administrators should be aware of cultural differences and sensitivities. It is recommended that individuals in these roles never assume that the international partner knows the way their institutions operate or the rules in their country.

Administrative support for collaborative teams is critical to high governance

There were some additional findings related to characteristics of the governance support of a multi-national collaborative project. The survey included numerous questions about formal agreements and how they can be better enhanced for collaborative teams. Agreements to develop the formal

roles and responsibilities of each member and the team holistically can aid the governance of the project. For those organizations that have formal agreements on roles and responsibilities, respondents stated that they would prefer better defined roles and responsibilities in the formal agreement. Several challenges were described as barriers in collaborative teams. Again, the resulting analysis depicted rather evenly distributed views on challenges, indicating that research administrators and managers face a variety of challenges that require attention.

Therefore, the study suggests a commitment to clarity and organization prior to the project, ensuring that project management is well-coordinated with clear duties, assignments, and functions for team members. When considering projects, it is vital to keep deadlines in mind, be aware of regulatory requirements of all concerned parties, archive all communications, and rely on formally defined roles and responsibilities of every person involved in the project. Another recommendation is to acknowledge all members of the team, recognizing shared work and goals. Every member of the team counts and being equitable in the work allows partners to share in tasks and be at the forefront of communication instead of receiving the details secondhand.

Experience is important for mid-career professionals

The results from the study indicate that research administrators have a variety of career-level experiences in research administration and management as well as experiences on and with international/multi-national collaborative teams. The experience level is not correlated with a high amount of collaborative activity, and therefore those that would like to take the opportunity to engage in international collaborative projects should feel confident to do so and seek out training opportunities.

Further, the study suggests that the vast majority of respondents had direct experience of working in international teams. A majority of the respondents are early or mid-career professionals, having worked in the field for between two and 15 years. The study infers that it is important to support more junior RMAs or rising career professionals to be ready to take on this collaborative work with international partners. Finally, most respondents have had a singular title role but engaged in multiple activities in different areas related to project delivery. There are no statistically significant correlations from these groups, likely because respondents mentioned value added responsibilities that are specific to their project experience.

Conclusion

The study presents some best practices as to how international research collaboration can be better supported and facilitated by effective research administrators who find themselves managing these teams. Research administrators and managers are a valuable part of successful teams, but their role and impact may be overlooked. As internationalization of research increases, it is critical to ensure research administrators are appropriately trained to work effectively with the people, project management details, and compliance requirements of international teams. The training to develop such expertise, especially in cultural mindfulness, can be developed in several ways but requires focused attention from everyone involved: the principal investigators, the partner

institutions, and the research administration community. There is an opportunity to develop new best practices for early career or mid-career professionals through communication and education while giving senior professionals a chance to share their positive experiences and lessons learned about multi-national research collaborations.

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