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Buying $cience: Considerations for Academic Productivity and Scholarship

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Abstract

There is no abstract for this commentary (unless required).

Keywords

mentorship; academic productivity; scholarship; payment models

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The authors would like to thank the Gerontological Society of America for their commitment to mentorship and career development by supporting the AGES (Advancing Gerontology through Exceptional Scholarship) Program.

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Buying $cience: Considerations for Academic Productivity and Scholarship

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Academic success is largely predicated on the advancement of scholarship. To advance scholarship, research-focused faculty are expected to launch new studies, collect new data, publish their findings, and secure extramural funding. Most academic institutions provide resources and supports to bolster faculty research productivity and success, including the provision of start-up funds in hiring packages, teaching load reductions, assignment of graduate assistants, internal funding mechanisms, principal investigator incentive funds, and training and mentorship programs. While these resources are primarily offered to new or junior faculty (and can be essential for being promoted and receiving tenure), they afford faculty of all ranks the financial resources to kick-start/advance their research agenda and dedicated time to devote to their scholarship.

With available resources provided by their institution or available through extramural funds, faculty are tasked with identifying strategies that can effectively and efficiently increase their academic productivity and scholarship. Many companies have emerged to provide fee-for-services to academic institutions and faculty related to research. These services can include providing access to curated datasets, assisting with survey and trial recruitment, writing grants, and publishing in open access journals with processing fees. Each of these services have associated fees and provide legitimate opportunities for faculty to advance their research and careers by "buying science." However, contracting external firms for these purposes and "pay-to-play" publishing models are being largely debated in academic communities because of potential ethical and quality concerns. With all the available services and some associated concerns from the academic community, faculty face a challenge in that they need to identify the most effective strategies to increase their productivity while also upholding scientific integrity, rigor, and ethical standards.

The purpose of this article is to provide an overview of opportunities to "buy science" in academia as well as the potential benefits and shortcomings of using these opportunities. The authors are not promoting or condemning the use of these opportunities (most of whom have used at least one during their careers); rather, the authors intend to offer: (1) neutral considerations that can help academics determine the desirability of these opportunities for their work; and (2) guide the selection of high-quality and ethical opportunities in a growing market of vendors. Below, we review the options of open access publishing, survey data services, secondary data, social media data, trial recruitment, grant writing and consultation, and external Institutional Review Boards (IRBs).

Open Access Publishing

Open access publishing is a publishing model that makes academic works available online at no cost or restrictions on use. Many open access publishers require processing fees, which presents a compelling yet controversial opportunity in the realm of "buying science." On the positive side, it offers several advantages that can significantly benefit researchers. The transparent peer-review process enhances credibility and allows for more open

scientific discourse. Faster time to publication accelerates the dissemination of research findings, potentially speeding up scientific progress. Furthermore, open access articles often benefit from greater visibility in academic searches, boosting citation potential and overall impact. Perhaps most importantly, this model democratizes access to scientific knowledge, making research findings available to non-academic entities and the general public, thereby bridging the gap between academia and society.

The benefits of open access publishing can come with notable potential drawbacks. The open access landscape is unfortunately marred by the presence of predatory journals that prioritize profit over scientific integrity, potentially compromising the quality and reputation of published research (Krawczyk & Kulczycki, 2021). Moreover, there is a lingering skepticism within academic circles, where traditional publishing paradigms still hold sway. This can lead to criticism or undervaluation of open access publications by peers as well as tenure and promotion committees, potentially affecting career advancement and research credibility. Researchers must carefully navigate these pros and cons, balancing the desire for broader dissemination and faster publication against the need to maintain scientific rigor and professional standing in their field.

Survey Data Services

Survey data services offer a powerful tool for researchers seeking to expedite data collection and access national and diverse populations. These services provide access to large national participant panels, enabling researchers to tap into a wide array of demographic groups. The ability to implement probability and quota sampling methods enhances the potential for representative samples, a crucial factor in many studies. One of the most appealing aspects is the significant reduction in time and effort typically required for recruitment, allowing researchers to focus on other critical aspects of their studies. The speed of data collection from desired samples is particularly advantageous, especially for time-sensitive research projects. Many services also provide quality checking mechanisms and participant replacement, which can help maintain data integrity. However, these benefits are counterbalanced by several potential shortcomings. There is an inherent risk of low-quality responses, such as those given with low attention or responding too quickly, thus resulting in repetitive patterns, which can compromise data validity. Sample bias is another concern, as participants may be self-selected or skewed towards more affluent individuals with ready access to technology, potentially limiting the generalizability of findings. Researchers may find it challenging to obtain large samples from traditionally under-researched groups, which can perpetuate gaps in scientific knowledge. Lastly, these platforms can be susceptible to fraudulent participants, including bots or individuals primarily motivated by compensation, further threatening data quality (Lawlor et al., 2021). Researchers must weigh these pros and cons carefully, implementing robust methodological safeguards to ensure the integrity and representativeness of their data when utilizing these services.

Secondary Data

Many secondary datasets are freely available for public use. Yet, secondary data that are not considered public use and/or are not freely available (e.g., data from the Centers for Medicare and Medicaid Services) present researchers with a valuable opportunity to leverage existing large-scale datasets, offering both significant advantages and notable limitations. One of the primary

benefits is access to large probabilistic samples, which can provide robust statistical power and enhance the generalizability of findings. These datasets often employ rigorous sampling methodologies, ensuring a high degree of representativeness that might be difficult or costly to achieve in primary data collection efforts. Furthermore, many secondary datasets facilitate repeated measures analyses through longitudinal or panel wave designs, enabling researchers to examine trends and changes over time - a crucial aspect for many research questions. However, the use of secondary data is not without drawbacks. A significant limitation is the inherent time lag between data collection and public release; by the time datasets are compiled, cleaned, and made available, the information may already be somewhat dated, potentially affecting the relevance of findings for rapidly evolving phenomena. Limitations also stem from the constraints of the dataset used, as the researcher does not have control over the data collection methods or variable inclusion. Researchers may find that the items included in these datasets do not always align perfectly with their research questions or may not represent the most current or preferred measures in their field. This mismatch can necessitate compromises in research design or limit the scope of possible analyses. Despite these challenges, secondary data remains a powerful tool in the researcher's arsenal, offering a cost-effective means to address a wide range of research questions, particularly those requiring large-scale, representative samples or longitudinal perspectives.

Social Media Data

Social media data offers researchers unprecedented access to large-scale, real-time information about user behavior and opinions, presenting both exciting opportunities and significant challenges. One of the primary advantages is the ability to capture trends and sentiments as they emerge, providing a dynamic view of public discourse and social phenomena. This data often comes with rich contextual information, such as geolocation and demographics, allowing for nuanced analyses of how opinions and behaviors vary across different populations and regions. However, the inappropriate use of social media data may be fraught with ethical concerns, particularly regarding privacy and consent. Users may not be aware that their public posts are being analyzed for research purposes, raising questions about informed consent and data ownership. Data quality is another major issue, with the prevalence of bots, fake accounts, and misinformation potentially skewing results and requiring sophisticated filtering techniques (Tušl et al., 2022). Additionally, the increasing financial cost required to collect data from social media platforms such as X (formerly Twitter) can restrict access to important data and negatively impact the researcher’s budget. Researchers must also contend with platform-specific limitations and frequent changes in data access policies, which can disrupt ongoing studies or limit replicability. Perhaps, most challenging is the difficulty in verifying the authenticity of user-generated content, as the anonymous or pseudonymous nature of many social media platforms makes it hard to confirm the veracity of posts or the identity of users. While social media data presents a rich tapestry of real-time social insights, researchers must navigate this landscape with a critical eye, balancing the potential for groundbreaking discoveries against the need for rigorous validation and ethical data practices.

Trial Recruitment

The advent of digital trial recruitment services has transformed the landscape of participant enrollment in research studies. This approach accelerates the recruitment process, potentially compressing research timelines and allowing for more rapid scientific progress. It opens doors to diverse and traditionally difficult-to-reach populations, broadening the scope of potential participants. For multi-site studies, these services offer an expanded geographic reach, facilitating more comprehensive and representative samples. Research teams benefit from a reduced administrative burden, freeing up valuable time and resources for other critical aspects of the study. However, this method is not without its drawbacks. There is an inherent risk of selection bias, as participants self-select into studies based on online advertisements or email invitations. The digital nature of recruitment can limit opportunities for personal interaction and rapport-building, potentially affecting participant engagement and retention (Kasahara et al., 2024). Verifying eligibility and identity in a virtual environment poses unique challenges, raising concerns about data integrity. Some studies report higher attrition rates compared to traditional face-to-face recruitment methods. Ethical considerations arise regarding the use of incentives, which may unduly influence participation decisions. Lastly, this approach may inadvertently exclude individuals with limited internet access or technological proficiency, potentially skewing the sample towards more tech-savvy demographics. Researchers must carefully weigh these factors when considering digital recruitment strategies, ensuring that the benefits of efficiency and reach do not compromise the rigor and inclusivity of their studies.

Grant Writing and Consultation

The burgeoning field of grant writing and consultation services offers researchers a potential edge in the fiercely competitive funding landscape. These experts provide invaluable guidance about crafting persuasive proposals, often possessing insider knowledge of funding trends and agency preferences. By assuming the burden of complex budgeting and administrative requirements, consultants “free up” researchers to concentrate on the scientific core of their projects. The resulting applications are typically more polished and strategically aligned with funders' priorities, potentially boosting the odds of securing grants. However, this outsourcing approach comes with its own set of challenges. There is a risk that the researcher's authentic voice and passion may be diluted in the quest for a perfectly formatted proposal. Ethical quandaries can arise if consultants exaggerate or misrepresent the investigator's capabilities in pursuit of funding success. Inappropriate reliance on external expertise might impede the development of crucial grant-writing skills, potentially creating a dependency that could hinder long-term career growth. Moreover, the substantial financial investment in these services does not guarantee funding success, adding another layer of risk to an already uncertain process. Researchers must carefully navigate this terrain, balancing the potential benefits of professional assistance against the importance of maintaining scientific integrity and developing essential academic skills.

Table 1. Potential benefits and shortcomings associated with opportunities to "buy science"		
Opportunity	**Potential Benefits**	**Potential Shortcomings (beyond cost)**
Open Access Publishing	• Transparent peer-review • Time to publication • Increased visibility in academic searches • Increased access for non-academic entities	• Possible predatory behavior • Traditional publishing paradigms and related criticism among academic peers
Survey Data	• Large and diverse participant panels • Probability and quota samples possible • Reduced faculty/staff time and effort for recruitment • Speed of data collection from desired sample • Quality checking and participant replacement	• Possible for low quality responses (e.g., low attention, pattern responding) • Possible biased samples (e.g., self-selection, more affluent, access to technology), limiting generalizability • Difficult to obtain large samples of traditionally under-researched groups • Susceptible to fraudulent takers (e.g., bots, compensation seekers)
Secondary Data	• Large probabilistic samples • Rigorous sampling methodology • Facilitate repeated measures analyses (longitudinal or panel waves)	• Data is dated by the time it is compiled, cleaned, and publicly released • Items included may not include best measures or align with desired research questions
Social Media Data	• Access to large-scale, real-time data on user behavior and opinions • Ability to capture trends and sentiments as they emerge • Rich contextual information (e.g., geolocation, demographics)	• Ethical concerns regarding privacy and consent • Data quality issues (e.g., bots, fake accounts, misinformation) • Platform-specific limitations and changes in data access policies • Difficulty in verifying the authenticity of user-generated content
Trial Recruitment	• Faster recruitment of participants, potentially speeding up research timelines • Access to diverse and hard-to-reach populations • Increased geographic reach for multi-site studies • Reduced burden on research staff for recruitment efforts	• Potential for selection bias in the recruited sample • Reduced opportunity for rapport building • Challenges in verifying participant eligibility and identity • Possible higher dropout rates compared to traditional recruitment methods • Ethical concerns about incentivizing participation • May exclude populations with limited internet access or technology literacy
Grant Writing and Consultation	• Expert guidance on crafting compelling proposals • Time-saving for researchers, allowing focus on scientific aspects • Improved chances of securing funding through polished applications • Assistance with complex budgeting and administrative requirements • Access to knowledge about funding trends and agency preferences	• Risk of losing the authentic voice of the researcher • Potential ethical concerns if consultants overpromise or misrepresent skills and abilities of investigator • May lead to dependency, hindering the development of grant-writing skills • High costs that may not guarantee funding success
External IRBs	• Time to review and receive approval • Facilitate and adhere to common rule for multiple institutions • Allow community-based organizations to conduct applied and practice-based studies	• Potential lack of familiarity with specific institutional or local contexts • Lack of rapport or continuity of research • May not align with all institutional policies or requirements • Potential for reduced oversight of ongoing research activities

External Institutional Review Boards

While research-focused faculty at institutions of higher learning have access to Institutional Review Boards (IRBs), external IRBs have emerged as a complementary solution to streamline the ethical review process for some research studies, partnerships, and entities. These independent entities often boast faster turnaround times for protocol review and approval, potentially accelerating research timelines. Their expertise in navigating the Common Rule proves particularly valuable for multi-institutional studies, ensuring consistent ethical standards across diverse research settings. Furthermore, external IRBs can be a boon for community-based organizations, providing a pathway to conduct applied and practice-based studies that might otherwise be challenging to initiate. However, this outsourced approach is not without its drawbacks. External reviewers may lack intimate knowledge about specific institutional cultures or local contexts, potentially missing nuanced ethical considerations. The absence of ongoing relationships between researchers and review board members can hinder the development of rapport and continuity in research oversight. Discrepancies may arise between external IRB decisions and individual institutional policies, creating potential conflicts or additional hurdles for researchers. There is also a concern that the arms-length nature of external review could lead to reduced ongoing oversight of research activities, particularly for long-term or complex studies. Institutions and researchers must carefully weigh these factors when considering external IRB services, ensuring that the benefits of efficiency don't compromise the depth and specificity of ethical review.

Conclusions

In the dynamic landscape of academia, the concept of "buying science" has become increasingly prevalent. In many ways, the emergence of additional opportunities to expedite research initiatives and enhance scholarly efforts has transformed the academic playing field, for better or worse. These services, ranging from open access publishing to external IRB reviews, offer tantalizing prospects for accelerating career advancement and research impact. However, it is crucial to recognize that these decisions are inherently transactional, each carrying its own set of benefits and potential pitfalls. Scholars must approach these opportunities with a discerning eye, carefully evaluating how each aligns with their research goals, ethical standards, and available resources. It is recommended that scholars considering these opportunities consult with mentors and colleagues who have used these services before committing. Open discussions related to the benefits, shortcomings, and lessons learned can prevent missteps, alleviate potential frustrations, and avoid squandering of funds. Such discussions should be framed within the context of the scholar's career stage and their institution's culture and perspective about "science-buying" opportunities (e.g., how they are viewed for promotion and/or tenure).

The ability to capitalize on "science-buying" opportunities often correlates with available funding, potentially creating disparities among researchers. Those with more substantial financial resources may find greater flexibility in leveraging these services to advance their careers. Conversely, scholars operating with limited funds face the challenge of judiciously allocating their resources for maximum impact. To navigate this landscape effectively, researchers should prioritize opportunities that align closely with their career goals, conduct thorough due

diligence to minimize risks, and negotiate terms when possible. Maintaining vigilance throughout the contracting process and beyond is essential to ensure the integrity and quality of outsourced work. Collaboration emerges as a powerful strategy in this context, with pooling resources among colleagues, teams, or mentees often yielding more comprehensive benefits than individual efforts. As this field continues to evolve, introducing novel and innovative ways to accelerate scientific progress, it becomes imperative for academics to stay informed and adaptable. By remaining attuned to emerging trends and critically evaluating new opportunities, researchers can strategically position themselves to thrive in this rapidly changing academic ecosystem.

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References

Kasahara, A., Mitchell, J., Yang, J., Cuomo, R. E., McMann, T. J., & Mackey, T. K. (2024). Digital technologies used in clinical trial recruitment and enrollment including application to trial diversity and inclusion: A systematic review. *Digital Health*, *10*, 20552076241242390. https://doi.org/10.1177/20552076241242390

Krawczyk, F., & Kulczycki, E. (2021). How is open access accused of being predatory? The impact of Beall's lists of predatory journals on academic publishing. *The Journal of Academic Librarianship*, *47*(2), 102271. https://doi.org/10.1016/j.acalib.2020.102271

Lawlor, J., Thomas, C., Guhin, A. T., Kenyon, K., Lerner, M. D., & Drahota, A. (2021). Suspicious and fraudulent online survey participation: Introducing the REAL framework. *Methodological Innovations*, *14*(3). https://doi.org/10.1177/20597991211050467

Tušl, M., Thelen, A., Marcus, K., Peters, A., Shalaeva, E., Scheckel, B., Sykora, M., Elayan, S., Naslund, J. A., Shankardass, K., Mooney, S. J., Fadda, M., & Gruebner, O. (2022). Opportunities and challenges of using social media big data to assess mental health consequences of the COVID-19 crisis and future major events. *Discover Mental Health*, *2*(1), 14. https://doi.org/10.1007/s44192-022-00017-y