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Costing Sponsored Research in Collaborative Projects with Low- and Middle-Income Countries.

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Declaration

This work has been presented:

- Preliminary data to VICRA SRAI March, 2022
- Prerequisite Doctorate Degree EU,Business School Geneva, September 2022
- CUGH March 2023, Washington DC (Poster)
- FIC HIV Training Network Meeting July, 2023, Bethesda

Introduction/Background

- The continual growth of economies in low- and middle-income countries (LMICs) has an influence on the recognition of the value of research for sustainable development.
- Institutions of higher learning (IHL) represent a conducive setting for conducting research
 - ➔ multidisciplinary with researchers, teachers and students at one place
 - ➔ an effective community for knowledge, discovery and innovation.
- However, development of the research enterprise faces many challenges including meager national governments' funding & **weak strategic positioning at IHL** to manage research funds from sponsored programs.

Introduction cont'd

- At IHL, we poorly understand **costing practices**, within and across IHLs in order to identify areas of strengthening of the research enterprise.
- We also poorly understand if the **indirect costs/overhead costs** associated with sponsored programs adequately **support**, sustain the funded projects and **maintain** a vibrant research environment for future research.
- **Purpose:**
to highlight costing practices in sponsored research in IHLs in LMICs
 - to estimate unrecovered indirect costs associated with sponsored research
 - to assess perceptions & attitude of key stakeholders in sponsored research on costing practices at IHLs.

Topic Selection/Synthesis

- Indirect costs are usually difficult to define, quantify, and allocate to a specific sponsored project (CAUBO, 2013).
- Due to this, institutions conducting sponsored research may end up spending considerable amounts to cover unaccounted-for costs and resources to ensure success of a sponsored project (Fonn et al., 2020).
- This burden of additional costs being borne by IHLs to engage in sponsored research has made IHLs the second important sponsor of research in the US (HIC) (AAUC, 2007).

Topic Selection Synthesis

- Research enterprise is a fairly new phenomenon in LMICs, and therefore it is **research management capacity building that may be lagging**.
- **Poor understanding of research costing**
- The **financial uncertainties** troubling IHL, combined with the **increased costs of performing research**, threaten the nation's research capability.

Study Objectives

Objective 1

To evaluate **actual costs** using **biomedical** sponsored projects as case studies for projects funded between 2007 and 2017 at KCMU Co, CUHAS, and MUHAS

Objective 2

To evaluate **actual costs** using **non-biomedical** sponsored projects as case studies for projects funded between 2007 and 2017 at KCMU Co, CUHAS, and MUHAS

Objective 3

To identify **perceptions and attitudes** of key stakeholders on **research costing practices** at KCMU Co, MUHAS, and CUHAS.

Significance of Research

The findings will:

- form the basis on which to formulate strategies to ensure **growth & sustainability of research** enterprises at IHL in LMICs.
- enable administrators and academicians to plan, test, and put forward **policies for negotiating** with funding agencies.
- be useful in engaging funding agencies to continuously **support research management** at IHL in LMICs.

Significance cont'd

The findings will:

- provide evidence to leaders at the IHLs in LMICs of the existence of unrecovered research costs.
- Alert policymakers at the national level on the need to support the research enterprise at IHLs.
- inform the researchers on the need of full cost budgeting.
- stimulate further research in this important area, especially at IHLs in LMICs.

Research Questions

- What are the actual costs of sponsored research projects for biomedical projects funded between 2007 and 2017 at KCMU Co, CUHAS, and MUHAS?
- What are the actual costs of sponsored research projects for non-biomedical projects funded between 2007 and 2017 at KCMU Co, CUHAS, and MUHAS?
- What are the perceptions and attitudes of key stakeholders on research costing practices at KCMU Co, MUHAS, and CUHAS?

Literature Review

- Status of universities is directly linked to their research contribution and external research funding → impetus to dwell evermore on sponsored research.
- Disregarding source of funding, research in IHLs has been supported on a marginal cost basis with no regard on the real full costs of research (Expert Group Report, 2008).
- On average, for sponsored research, IHLs incur institutional costs of at least an additional 40 percent (AUCC, 2009).
- Myths(COGR):
 - *Indirect cost rates are not founded on actual costs but rather on costs plus a profit margin.*
 - *Funding of indirect costs virtually support the academic institution's infrastructure with no contribution to science.*

Literature Review Cont'd

- The practice of disproportionately allocating indirect costs between IHLs in LMICs vs. HICs is not uncommon (ESSENCE, 2012).
- IHLs in LMICs fail to budget their research projects at full cost, mainly due to inaccurately calculating or not including a large portion of the indirect costs (ESSENCE, 2020).
- Most IHLs in LMICs struggle with constrained facilities, out-of-date equipment and infrastructure and limited professional support for research which demands comparably higher amounts of IDCs (National Science Foundation (NSF) Report, 1991).
- In-kind labour contributions needed to accomplish a sponsored research project are about 42% of the total contributions by the institution (Fonn et al., 2020).

Methodology

The study was cross-sectional using a multiple-methods approach.

- Quantitative – Objective 1 & 2
- Qualitative – Objective 3

Study setting:

- Kilimanjaro Christian Medical University College (KCMU Co)
- Muhimbili University of Health and Allied Sciences (MUHAS)
- Catholic University of Health and Allied Sciences (CUHAS)

Methodology Cont'd

Quantitative – Objective 1 & 2

- Retrospective data from annual final reports and final financial reports (FFR) of funded sponsored research projects (2007 -2017).
- Descriptive statistics to evaluate **actual cost (including unaccounted costs)** of the sponsored projects.

Qualitative – Objective 3

- Key informant interviews with key stakeholders (senior administrators, research administrators and other junior administrators such as human resource, procurement, legal, finance, and accounting officers) to **elucidate perceptions and attitudes** of key stakeholders on **research costing practices**.

Methodology Cnt'd

- Determination of unaccounted costs
 - Equipment:
 - Depreciation
 - Maintenance/Service
 - Clearing
 - Insurance
 - Bidding
 - Disposal
 - HR
 - Advertisement
 - Interviewing
 - Induction/Orientation
 - Training
 - Relocation/Subsistence
 - Social Security/Welfare
 - Payroll/Wage bill costs

Key Findings

Evaluation of Actual costs OBJECTIVE 1

| Project ID | Direct costs (USD) | Indirect costs (USD) | Total project costs (USD) | Hidden costs (USD) (pers+equip) |
|--------------|-------------------------------|----------------------------|-------------------------------|---------------------------------|
| KB-1 | 50,876 | 3,617 | 54,493 | 18,669 |
| KB-2 | 1,205,055 | 118,887 | 1,323,943 | 453,583 |
| MB-1 | 3,068,685 | 414,402 | 3,483,087 | 1,193,306 |
| KB-3 | 820,867 | 113,586 | 934,453 | 320,144 |
| MB-2 | 140,333 | 13,381 | 153,714 | 52,662 |
| CB-1 | 55,690 | 12,096 | 67,786 | 23,223 |
| Median (IQR) | 480,600 (76,851-1,190,008) | 63,484 (12,417-117,562) | 544,084 (89,268-1,226,570) | 186,403 (30,583-420,223) |

Key Findings

- The median (IQR) amount of direct costs being USD 480,600 (76,851-1,190,008) while the median (IQR) for indirect costs was USD 63,484 (12,417-117,562).
- The unaccounted-for cost rate for biomedical donor-funded research projects was 34.3% and the median (IQR) of unaccounted-for costs (unfunded by the funder) was USD 112,875 (30,583-420,223)

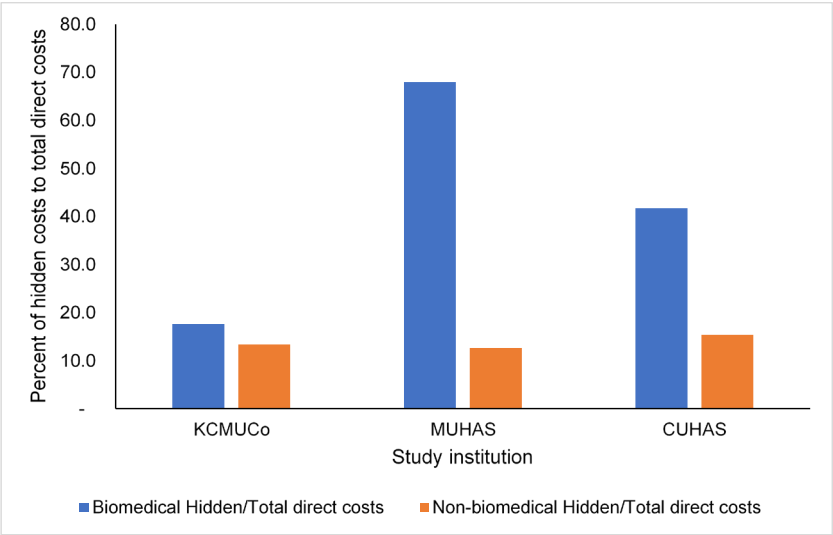
Key Findings

| Project ID | Direct costs (USD) | Indirect costs (USD) | Total project costs (USD) | Unaccounted for costs (USD) (pers) |
|------------|---------------------|----------------------|---------------------------|------------------------------------|
| MNB-1 | 527,777 | 0 | 527,777 | 65,972 |
| KNB-1 | 8,837,056 | 574,015 | 9,411,071 | 1,176,384 |
| MNB-2 | 212,205 | 1,484 | 213,689 | 26,711 |
| KNB-2 | 1,813,911 | 137,301 | 1,951,212 | 243,902 |
| MNB-3 | 1,543,345 | 0 | 1,543,345 | 192,918 |
| MNB-4 | 36,859 | 24,144 | 61,003 | 7,625 |
| CNB-1 | 790,959 | 112,040 | 902,999 | 112,875 |
| CNB-2 | 746,511 | 0 | 746,511 | 93,314 |
| CNB-3 | 425,699 | 42,560 | 468,259 | 58,532 |
| CNB-4 | 1,310,563 | 0 | 1,310,563 | 163,820 |
| CNB-5 | 1,313,630 | 898,590 | 2,212,220 | 276,528 |
| Median | 790,959 | 24,144 | 902,999 | 112,875 |
| (IQR) | (476,738-1,428,488) | (0-124,671) | (498,018-1,747,279) | (62,252-218,410) |

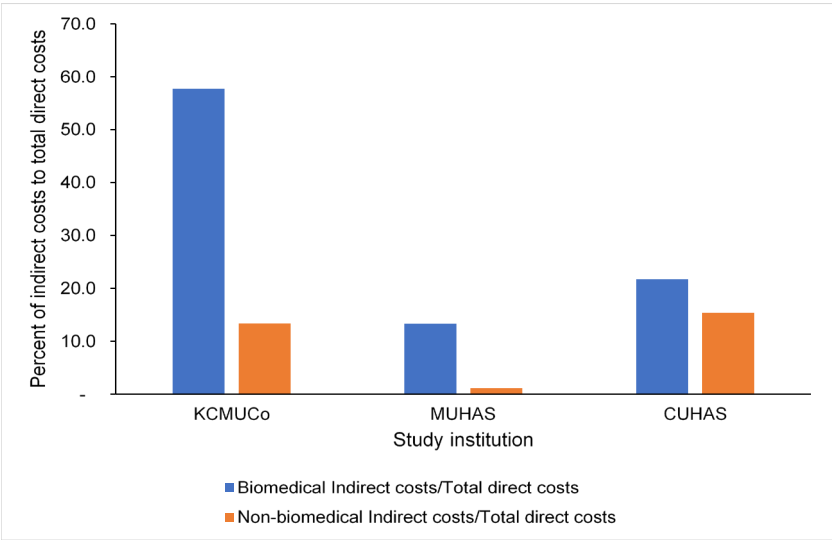
Key Findings

- The median (IQR) amount of direct costs was USD 790,959 (425,699–1,543,345) while the median (IQR) for indirect costs was USD 24,144 (0–137,301).
- The unaccounted-for cost rate for non-biomedical donor-funded research projects was **12.6%** and the median (IQR) amount of unaccounted-for costs (unfunded by the funder) was USD 112,875 (58,532–243,902)

Evaluation of Actual costs cont'd



Evaluation of Actual costs cont'd



Key Findings

Objective 1 & 2

The study demonstrated that:

- there are considerable amounts of unaccounted-for costs for SRP that are not recovered.
- the higher the amount of funds for the SRP, the higher are the unaccounted-for costs.
- Unaccounted-for costs for biomedical SRP comprised of about twice the amount of non-biomedical.
- though the median total costs for non-biomedical sponsored projects were more than 1.4 times[↑] vs. biomedical projects, the median amount of unaccounted-for costs for biomedical donor-funded projects comprised about x2 the median of unaccounted for indirect costs for non-biomedical projects (USD 214,102 vs. 112,875, respectively)
- **Indirect costs were inadequate.**

Key Findings

Objective 3

- Perceived Benefits of Sponsored Research
- Budgeting for Sponsored Projects
- Overhead and Unaccounted Costs
- Budget Negotiating Power

Perceived Benefits of Sponsored Research

- Engaging in sponsored research was perceived to have benefits at individual, institutional, and community level. At the individual level, academic career development and income were the most commonly described benefits. For example, a participant commented,

Of course, the other thing which motivates research, and I want to be very blunt here, and that is, what is conceived by many young people is the monetary component that you get some allowances in addition to your salary. That is there, we cannot run away from it. [Senior Administrator, >10, Male]

Budgeting for Sponsored Project

- Overwhelmingly participants stated budget development as an important step in ensuring efficient costing for research. Most of the participants mentioned that there were no set standards used for budget development for sponsored projects. Participants described a lack of skills in budgeting as being a limitation. Most highlighted on the importance of training and developing the skills of researchers and administrators when it comes to budgeting.

I think what guides budgeting is really the donor regulations on budgeting. I know sometimes it's challenging. Some people eventually budgeted for things which are not allowable. Again, that is lack of know how in writing proposals and research administration because research administrators should be able to guide staff. [Senior Administrator, >10, Male]

Overhead and Unaccounted Costs

- A majority of participants said that not all costs associated with a sponsored project were covered by the funding agencies. The overhead funds allocated by the projects were not adequate to cover the unaccounted costs related to the projects. Some commented that some funding agencies had a fixed percentage for the overhead costs.

...from NIH funded projects is fixed. This is supposed to cater for so many things including research administration and utilities, but they had a whole hall full of very heavy duty freezers, you see, so you're actually not recovering anything from the project to pay for the utilities because that overhead charge is fixed at 8%. So it was peanuts. [Senior Administrator, >10, Male]

Budget Negotiating Power

- A majority of the participants described negotiation power as being a big limitation in budgeting and costing for sponsored research projects. Almost all noted their institutions had a low negotiation power when deciding on rates used for budgeting.

Well, the budgets are developed, guided by the donor regulations that you have... This is not allowable, this is allowable. Then, of course, you know your budget items from your proposal. You budget them. I think what guides budgeting is really the donor regulations on budgeting. I know sometimes it's challenging. Some people eventually budgeted for things which are not allowable. Again, that is lack of know how in writing proposals and research administration because research administrators should be able to guide staff. [Senior Administrator, >10, Male]

Discussion

- Substantial amounts of hidden indirect costs that are not taken into consideration during the budgeting process of sponsored research: this could be due to poor grants management, lack of fiscal policies on grants and weak negotiating power for indirect costs.
- Indirect costs are not well articulated by IHL researchers in LMICs in their definition, their qualification for funding, and how they are supposed to be calculated due to lack of clear policies to guide researchers (ESSENCE, 2020).
- This arises due to unsatisfactory coordination of externally funded research grants within IHLs as a result of underdeveloped research management capacity and inadequate negotiating power with funders with regard to reimbursement of indirect costs (ESSENCE, 2020).
- Sometimes researchers underestimate indirect costs to make a grant more competitive and assigning responsibility for reviewing indirect costs to staff who are inexperienced or trained to accomplish the assignment effectively (NSF,1991).

Discussion cont'd

- According to ESSENCE (2012a) obstacles to fair rates could include: IHL's lack of capacity to calculate indirect costs, underdeveloped institutional management of research grants, reimbursement of indirect costs that conform to funders' policies that vary considerably, and inadequate or no capacity to negotiate with funders on research indirect costs.
- There is also inequity in recovering total cost of sponsored research between IHLs in HICs and IHLs in LMICs whereby IHLs from HICs have negotiated indirect costs, which does not apply for IHLs in LMICs (ESSENCE, 2012).
- Due to decreased quality & quantity of research at IHLs in LMICs with few scientists to compete for awards, there is less funding to invest in research infrastructure (Sara Bible et al., 2019).
- Most of SRP are HIC driven.
- *In summary*, the unaccounted/hidden costs are real costs and they are often not allocable or allowable on sponsored research projects that arise due to low and usually capped indirect cost funding.

Limitations

- The findings may contain inherent weaknesses pertinent to the retrospective nature of the study such as confounding and selection.
- It was not possible to examine the external validity of the study for the purpose of determining the extent to which the findings could be generalized to other IHLs in LMICs.
- The study could be expanded and bring a fair and equitable solution

Conclusion

- This Study was first attempt to illuminate IHL in LMIC incurs hidden costs in administering sponsored research and provided administrators and academicians at IHLs LMICs the ability to plan, test, and put forward policies for negotiating with funding agencies.
- Taken together, this study was able to elucidate factors that future sponsored projects to LMICs require impartial platform to determine unaccounted/Hidden costs to IHLs in LMICs between funding agencies and recipient, particularly in LMIC.
- Carry out advocacy to funding agencies to work out modalities into balancing resources in conducting research projects for LMICs with equity not with equality.
- Carry out advocacy for a system that is **fair** without any imbalance of resources/power in research enterprises

Recommendations for future study/ Next Step

- A prospective multicenter/multicountry study with more IHLs in LMICs engaged in sponsored research activity would facilitate the testing of external validity and hence potentially overcome the limitations highlighted in this study.
- Work with those institutions that get specific funding from the beginning to collect data on unaccounted costs, where the institution pays the unaccounted costs: this remains useful for institutions' leadership to see how this topic is relevant.
- In the context of LMICs, establishing solid research management infrastructure and available competent human resources has remained a challenge. Research Support Centers are potentially a strategic approach to enable good conduct of sponsored research in LMICs and give a balance in terms of proper accounting for resources and hedge unaccounted costs

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Thank you!



Q&A

Discussion