Author’s response to reviews

Title: Strengthening and measuring research impact in global health: lessons from applying the FAIT framework

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Response to Reviewers comments received on Strengthening and measuring research impact in global health: lessons from applying the FAIT framework

Reviewer #1: I thought this was a very interesting and well written article. The area that I felt needed some discussion was the role of infrastructure in LMICs. This is likely to affect impact of any health research and the infrastructure in LMICs is very different to HICs where the tools used have been developed. While this was touched on by implication, I thought this was one piece of the picture that need to be expanded upon.

Response: have added text and a new references on health research infrastructure:

“To date, efforts to measure impact have largely focused on health research in high-income countries (HICs) reflecting where the majority of health research funding is spent, and the limited infrastructure and capacity for health research in LMICs.” Lines 51-52.

“If, as HIC reviews suggest, use of impact models is cementing an existing bias in research funding towards statistical measures (5) at the expense of experimental or qualitative research design (53) this may be detrimental to LMIC research, where research infrastructure is often
lacking, and qualitative methods are particularly needed to explain the poorly-understood (54) governance environment in which research occurs.” Lines 218-223

For the interest of the authors I have copied a link to the NIHR Global Health programme which they may not be aware of: https://www.nihr.ac.uk/funding-and-support/global-health-research/

Response: Thank you for this information. We have reviewed the website and added a reference to the NIHR’s global health research program, Line 69 (reference 34)

Reviewer #2: This study describes the retrospective use of the FAIT tool to measure research impact in two LMIC research projects, one in Indonesia and one in two Pacific countries, Samoa and Fiji. Using the tool, the authors describe the process of identifying domains of impact, quantifying costs and benefits and narrating the pathways to impact. The stated aim is to evaluate the applicability of the tool, developed in a HIC, for use in LMICs and to make recommendations to support the further use of the tool. A strength of the study is the involvement of two of the authors who developed the FAIT tool.

The rationale for the approach taken by the authors is clear. The background provides a useful summary of what is known about measuring research impact in HIC and the need for approaches that can be translated to LMIC. The authors comment on existing models used by three major funders of global health research demonstrating the likely relevance of the study in LMIC funding environments.

The methods are clear and appropriate to the study. The discussion identifies characteristics of LMIC research that warrant adaptation of the tool and enable the reader to understand the likely applicability of the FAIT tool in other environments. The conclusions appear to be justified based on the results and the experiences outlined in the study. The recommendations about possible modifications to the use of the FAIT tool are reasonable and helpful.

The article makes an important contribution to public health research in LMIC countries. It is clearly written, easy to read and contains sufficient detail to understand the challenges encountered. The consistent reference to the three core components throughout was useful - domains of benefit; costs and benefits; and narrative case studies. Both the tables and the additional file added detail and were useful in demonstrating the benefits and limitations of the tool.

I note that there is a typo on line 288 "there are many contexts were where it will not be possible".
Response: Many thanks to Reviewer 2 for this thorough and thoughtful feedback. Typo (now line 302) has been corrected.

Reviewer #3: This paper deals with two understudied areas in the literature - research impact assessment in LMICs and economic impact assessment - aggregating research benefits to provide a monetized estimate of the impact across populations. The authors describe the application of FAIT as a method for assessing impact in two LMIC-based health research projects, with the intention of assessing its applicability, strengths/limitations and making recommendations for further use. While well written overall, the paper could be improved by addressing the following points.

1) The authors found that the sections of FAIT designed to identify research benefits (domains of benefit and case study) yielded important insights and new knowledge on study impacts. They concluded these aspects of FAIT were feasible and useful to implement retrospectively. However, this part of the assessment process is not novel.

Response: As stated in the methods section of this paper (lines 85-86), FAIT combines the three most commonly used approaches to impact assessment into a single tool. It is the combination of all three methods in the one framework that is novel. This has now been clarified in the methods section, with this text (Lines 86-88): While each domain of FAIT is based on an existing approach to research impact, the combination of these approaches into a single tool is novel.

The authors do not describe how FAIT differs from other similar frameworks identifying different categories of benefit. Other methods may have yielded the same results if applied to the projects in question. The advantages of FAIT compared to other models and impact assessment tools is not clear and should be clarified. The reader is not left with a clear view about why FAIT should be used.

Response: The background section notes the aim of the study was to apply FAIT and evaluate its applicability, identify strengths and weaknesses, and make recommendations to improve further use (Lines 79-80). FAIT was selected because it was based on a review of existing approaches (Lines 86-88), see Searles A, Doran C, Attia J, Knight D, Wiggers J, Deeming S, et al. An approach to measuring and encouraging research translation and research impact. Health research policy and systems. 2016;14(1):60. (Reference 10)

It was therefore beyond the scope of this study to compare FAIT to any other frameworks. We have noted it for a possible area of further research in the conclusion (lines 339-340): … future
research that tests the applicability of other high-income research frameworks in low-income environments may be useful.

2) The authors suggest that FAIT would yield greater benefits if applied prospectively. The paper would benefit from a more concrete explanation of how prospective application of the FAIT framework would yield greater benefits, in reference to the case studies provided, rather than the discussion about program logic models and links to examples in the additional file.

Response: The authors’ agree with this observation and have added the following text (Lines 270-277)

For example, prospective application of FAIT can help ensure relevant data is capture in the monitoring frameworks. In the Fiji example, we were unable to complete a social return on investment due to lack of data – a prospective application of FAIT would have indicated these data gaps. Equally, prospective application of FAIT aid consideration of potential positive and negative program externalities. In Malang, for example, prospective application may have highlighted the potential impact of the intervention on the workload of community health workers, and led to monitoring of any adverse impact on other health tasks they performed, e.g., in maternal and child health.

3) The examples the authors use to test the application of the FAIT framework are both implementation research projects where benefits can be modeled in terms of health gains/avoided morbidity. The authors state the framework can be applied to a range of research methods including qualitative studies, but it is not clear what an assessment of the cost-benefits of a qualitative study would look like e.g. where the aim of the study was to change perceptions or understanding of an issue among decision-makers for example.

Response: FAIT is a combination of three validated methods of impact assessment. While the framework can be applied to various study designs, the economic analysis component may be more relevant to particular research designs and less to others. Economic impact is one of the domains in the Payback framework. If there are benefits that can be monetized, this can be used in an economic evaluation such as cost-benefit analysis. We have added the following clarification to the discussion: “in qualitative studies where research benefits cannot be monetized, such as a change in perceptions or attitudes, a cost-consequence analysis, may be more applicable.” (Line 258-260)

It would be useful for a range of research types to be included to support the claim that FAIT is useful and can be applied in LMIC contexts or for this limitation to be acknowledged by the authors.
RESPONSE: We have acknowledged this limitation in the revised manuscript (Lines 329-331).

… a further limitation of our study [was that] we focused exclusively on implementation research. Applying FAIT to other types of research project designs in LMICs will allow broader assumptions to be made about FAIT’s applicability within the LMIC context.

4) While including an analysis of economic impact is novel, the social return on investment section of the Impact Scorecard is confusing in the context of the retrospective impact assessment applied in this case. The social return on investment section reports ‘potential’ economic benefits rather than the actual return on investment that had been achieved at the time of assessment. This was different from the rest of the scorecard, where only benefits that had already occurred were reported. This inconsistency made the paper somewhat disjointed and confusing to read.

Response: We acknowledge that both the Payback and narrative components of FAIT in these examples only report on impacts that have been achieved whereas the economic component includes “projected” impacts. This reflects an inherent limitation associated with assessing the economic impact of a project within a short timeframe following completion of the project. Hence economic analyses are often projected over a given time frame, say ten years of operation with a sensitivity analysis to allow for ‘decay’ in effect size beyond the trial period. While this may appear as an inconsistency in the scorecard, it is very common for economic analysis to have an element of forecasting and projection to assist with decision making about future investment. We have added the following explanatory text, lines 261-265:

Finally, it is worth acknowledging that while the Payback and narrative components of FAIT consider impact retrospectively, based on empirical evidence, the social return on investment models projected economic returns into the future. While this may appear an anomaly, it is common practice for economic analysis to contain an element of forecasting given the challenge of demonstrating economic impact within the short time frame of a research project.

It makes sense to estimate the value of the research interventions to inform a business case for implementation more widely, as the authors have stated on p12. However, the purpose of this analysis in the context of a retrospectively assessing the impact of these projects was not clear and could be better explained. Is this section of the scorecard designed to be used as an advocacy tool to encourage translation? Is it designed to show how return on investment could be calculated if the research was adopted widely??

Response: The economic component of FAIT can be used as an advocacy tool, it can contribute to a business case, or inform future research funding investment i.e. it is a way of comparing
returns on research investment between various projects. Yes, it can be used to project returns on future adoption of a research intervention. The following text has been added to the discussion (Lines 310-312):

Such data could contribute to a business case to scale up interventions trialed during research by projecting future returns and can also inform future research funding investment.

How is this section utilised where a prospective assessment is completed?

Response: Impact assessment can never be completed with certainty at the start of a research program. What can be applied prospectively is the FAIT Framework which includes a project logic model to prospectively map the pathway to impact so as to maximise translation, identify the types of impact evidence that need to be collected; and monitor progress towards impact. This process also identifies, at the outset, the data required to provide evidence of the generation of outputs, their use and the subsequent impact. We believe these issues are adequately reflected in the section on ‘prospective use with program logic model’ (Line 267 and following).

5) The authors discuss many challenges associated with data gaps to complete cost-benefit analyses in LMICs. In one of the examples provided the cost-benefit section of FAIT could not be completed. Yet the authors conclude that the FAIT can be applied to research projects in LMICs. This conclusion needs more clarification than is currently provided. Further application of FAIT would require system level change in LMICs.

Response: Thanks for this feedback. The results section states that while we were unable to conduct a cost-benefit analysis on the Fiji project, the FAIT tool provided allowed us to outline how one would be done (line 200-201). We have further emphasized in the relevant sections of the discussion the importance of prospective analyses to recognize and help overcome data constraints. See line 272, which references the Fiji project directly, and lines 314-316 which now state: As discussed above, conducting prospective analysis is important to identify (and makes arrangements to collect) data required to conduct economic analysis.

In addition, we now make the practical suggestion that, where cost-benefit analysis is not possible, cost-effectiveness may provide a useful alternative (lines 307-8).