Reviewer's report

Title: A Mixed Methods Examination of Knowledge Brokers and their Use of Theoretical Frameworks and Evaluative Practices

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Reviewer: Peter van der Graaf

Reviewer's report:

The manuscript addresses an important question in knowledge translation: what theories and models are used by knowledge brokers in practice? The manuscript is clearly written and presents some interesting findings of relevance to both scholars and practitioners in the field of knowledge translation. I fully support the main argument that KBs need to measure the impact of their interventions and cultivate a culture of evaluation to understand their effectiveness and conserve precious health care resources (page 4, lines 42-25).

My main feedback related to the research design and the data from the research is presented and discussed in the paper. The authors use a mixed design, combining interviews and survey data from KB practitioners, and present this as an approach that provides new insights as it "brings together the strengths and non-overlapping weaknesses of quantitative methods with those of qualitative methods" (page 10, line 28-30). I am not clear about the value that this comparison adds to the analysis and findings presented in the paper. How were the two datasets compared?

The authors state that the aim of comparing the different data sets is to "confirm (or disconfirm) qualitatively derived insights, while at the same time drawing on the larger survey sample to increase the trustworthiness of our conclusions", which is a common approach in research (checking representativeness of qualitative data through a larger scale quantitative survey). However, the two datasets appear quite separated both in design and reporting of findings and, therefore, do not seem to be very mixed, in that they both inform each other, e.g. were the survey findings used to re-analyse some of the qualitative data to provide additional insights instead of just confirm the qualitative findings? Overall, it is not clear to me what additional insights the survey data provide.
Interestingly, on page 16, the survey findings seem to contradict the interview findings but the authors do not elaborate on this. Although the qualitative data suggest that KBs evaluative practices are informal and unstructured (almost non-existent?), the three quarters of the survey respondents indicate that they sometimes or usually evaluate their practices. Figure 3 provides some useful information on the type of indicators that are used by KBs but the authors do not discuss these in any details or link them back to the interview findings.

I feel the authors could make better use of both data sets to present more insightful findings. Currently, the findings, although important aren't very novel: KB don't evaluate their practice and use existing frameworks flexibly. I would be interest in a more critical analysis of the data explore why this is the case and what could be done to encourage more uptake of theory and evaluation. For instance, how did the KB who did use frameworks such as PARIHS and KTA decide to use these frameworks and apply them to different contexts? For example, on page 13, line 45-37, the authors mention that participants who selected the PARIHS framework, "because it is considered effective in capacity building and organisation change". Who considered this? The participants themselves and, if so, did they elaborate in the interviews on how the frameworks helped them to build capacity and change organisations?

Moreover, how did these frameworks inform their evaluation practices, as many of the mentioned frameworks incorporate evaluation concepts into their models? How could KBs link their evaluation activities more closely to the different frameworks? For example, the quote on page 15, lines 33-37 mentioned small policy changes due to policy dialogues and evidence briefs. Which framework or models informed these practices for KB A and helped this person to achieve impact? And on page 16 KBs refer to client satisfaction (line 4) and 'keep getting clients' (line 21) as the best indicators of success. Are these indicators linked to the frameworks and models that these KBs use? (Or could they be better linked?)

Secondly, the sampling and recruitment strategy for both data sets is unclear to me. For example, how were the KB networks and organisations used to email potential participants selected and accessed (e.g. through authors contacts?) and how representative are they of KBs practicing in the Canadian health care landscape? Moreover, how did you keep these people separated from the people who were invited to complete the survey to ensure mutual exclusivity of the sample (as claimed on page 6, line 37)? It appears to me that both invites were circulated at the same time (apologies if I have misunderstood this). Clarity on this would help to judge the strength of the datasets. I appreciate that due to the small interview sample size, the authors are not able to report on their characteristics (page 11, line 14) but how did they ensure a reasonable spread of participants on these characteristics across the sample?
Regarding the survey, a high proportion of completed questionnaires were rejected (53%). Why was this the case (e.g. lots of missing answers in the survey or many respondents that were not Canadian)? And what steps have the authors taken to ensure this has not introduced selective bias in the sample, e.g. did respondents not answer particular questions or did they represent a particular group of KB in Canada? More details on the sample in the survey would be helpful to judge the strength of the data.

Also, when analysing the interview data, the authors apply a constructivist, grounded theory approach, acknowledging multiple realities including the authors' own experiences and viewpoints. This is to be applauded; however, to understand how multiple realities were accounted for, I would like to see more detail on the roles and experiences of the researchers involved in the analysis and how these different realities came through in and informed the analysis. Did the authors perhaps co-constructed the meaning of various realities with participants?

Finally, the opening of the discussion states that KBs in the research described their roles and skills in ways consistent with existing literature but I am can't find the sections in the findings where participants discuss their roles and skills. Could this perhaps be added to the findings section?

Some smaller comments:

- There a few missing words in the text. For instance, page 5, line 12: WHICH?; line 28 and 33 after 'Innovation'; page 9, line 25 after 'After'.

- Page 6, line 30 mentions the Convergence Model of triangulated mixed methods design. Could you briefly explain in this model and particular how it guided your study design in light of my earlier comments about mixing the qualitative and quantitative data?

- Page 12, line 49: delete 'the' before 'their KB initiatives'.

- Page 14, line 40-42: delete 'were' after 'frameworks' and 'used' after 'frequently'.
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