Author’s response to reviews

Title: How do professional capital and team heterogeneity affect the demands of team-based service?

Authors:

Jiaying Li (ljyhust@hust.edu.cn)
Hong Wu (hongwu@hust.edu.cn)
Zhaohua Deng (zh-deng@hust.edu.cn)
Naiji Lu (naiji.lu@qq.com)
Richard Evans (Richard.Evans@brunel.ac.uk)
Chenxi Xia (xcxxdy@hust.edu.cn)

Version: 1 Date: 09 Apr 2019

Author’s response to reviews:

Dear Editor and Reviewers,

We write to thank you for reviewing our revised manuscript, How do professional capital and team heterogeneity affect the demands of team-based service provision? (MIDM-D-19-00045), for publication in BMC Medical Informatics and Decision Making, and appreciate the comments and suggestions for improvement made by all.

We sincerely appreciate the opportunity you have provided to revise and resubmit the manuscript. After reading and discussing your comments and suggestions, we have made careful revisions to our manuscript. A lot of new details and content has been included in the revised manuscript, and we list the changes and describe what amendments have been made to the manuscript text and where these can be found (e.g. Abstract section, line 49, page 7) below.

Please see the following point-by-point response letter, which accompanies our revised manuscript. In order to show the changes more clearly and make the revised manuscript easier to read, we have colored all changes in red in the new manuscript. In addition, we have worked with a native English-speaking Professor to improve the language and readability of our paper. Finally, according to Editorial Policies, the data supporting our findings should be provided. However, we are still using these data to write other papers. Thus, for the 'Availability of data and materials' in the Declarations section, we do not wish to share our data. Thank you very much!
Responses to Reviewer 1

Major concerns:
1. The paper could be improved if authors can draw a strong connection between the reported findings and (1) health care safety and quality and (2) health informatics, specifically, consumer health informatics and health information technology. I believe the findings can make unique contributions to the safety and quality of online health services in many perspectives. The findings are also relevant to incentives and challenges of informatics study regarding the emergence of online health communities. For a recent literature review, see https://preprints.jmir.org/preprint/12521
Response: Thanks for the comment. Based on your suggestions, we have enriched and improved both the theoretical and practical implications part in the new version.
For the theoretical Implication, we have added (Implication section, line 21-29, page 33), “Meanwhile, researches regarding online health communities are facing challenges of health information technology, consumer health informatics and incentives [7], this study makes unique contributions to these aspects of health informatics study in the context of MTs’ emergence and popularity.”. For the practical Implication, we added (Implication section, line 17-24, page 34), “First, findings are deemed useful assets for healthcare providers, administrators and consumers in moving positively toward team services, which could help ensure the safety and quality of online health services.”.
In addition, we have cited this recent literature as the 7th reference in our paper (Background section, line 36, page 9), “On the other hand, the demands for high-quality healthcare and increasingly intensified doctor-patient trust problems put pressure on traditional medical services[6, 7]”


Minor concerns:
1. The Conclusion section of the Abstract is oversimplified.
Response: Thank you for your comment. We have modified the conclusion in the Abstract (Abstract section, line 49-57, page 7), “This paper comprehensively studies the impact factors of TSD from perspectives of professional capital and team heterogeneity, expands the theoretical understanding of team heterogeneity and social capital in OHCs, and provides reliable practical suggestions for the online platform and team leader”.

2. Please check types of tense thoroughly. The types of tense of verbs indicate whether a work is done already or is in process. For example, on page 8, "Hongseok et al. demonstrate that group social capital". Do you mean "demonstrated"? On page 9, ", so we conduct a conceptual model that ". Is the model completed or to be developed?
Response: We fully appreciate your comment, and we have modified the tenses throughout the paper. A native English-speaking Professor has extensively read and modified our paper to ensure readability and correct use of English language.

3. I think authors meant "Table 5" instead of "Table 6" by the end of Results-Robustness test, on page 22.
Response: Thanks a lot. We have corrected this in the revised version.

4. It's usually not necessary to declare re-occurred abbreviations they were declared at the first occurrence. For example, TSD in the Discussion section. And some others.
Response: Thanks for the suggestion. We have modified this in our revised manuscript.
Responses to Reviewer 2

1. Typo in methods section (line 46) - "TM" should be "MT"
Response: Thank you for identifying this mistake. We have modified this in our revised paper.

2. The conceptual model should show the control variables identified in the operationalization.
Response: We fully appreciate your suggestion and we have added the control variables in the conceptual model.

3. The result section could have used the high stranded deviation of TSD to highlight the variation in TSD (need of research to clarify).
Response: We really appreciate your comment. The standard deviation of TSD is shown in Table 1 (Methods section, page 22).

4. Typo in descriptive statistic and correlations (line 22) - "half one month" or "one and a half months"
Response: Thank you. We confirm that this has now been changed.

5. Use of VIF below 10 as the condition to ignore multicollinearity needs proper citation.
Response: Based on your comment, we have cited a classic paper about multicollinearity in the sentence “The values of VIF were all below 10, so we could ignore the multicollinearity [67].”.
(Empirical Results section, line 46, page 24)

6. Depicted R square value that explained the variance of TSD (Empirical result line 4) does not aligning with Table 3 figures.
Response: Thank you for your comment. We have modified our manuscript by adding R square value for both Table 3 and 4.

7. Better include a table summarizing the acceptance/rejection of hypothesizes in the Results section.
Response: Thank you for your suggestion. We have added a table summarizing the acceptance/rejection of hypotheses testing in the Result Analysis section (Results section, page31). We summarize the results of the estimation of hypotheses testing in Table 6.

8. Need a clear explanation of five models in the Table 4.
Response: We really appreciate your comment. We have explained the five models in Table 4 (Empirical Results section, line 53-60, page 25).

“All variables explained 50.9% variance in TSD, and the values of R Square Change were all significant.” (Table 4, Empirical Results section)
built the interaction of professional capital and team heterogeneity, and tested H5 and H6. The regression equation estimation and results of these models are shown in Table 4.”

Responses to Reviewer 3

1. The language of the paper need to be improved substantially. There are lots of incorrect expressions and incomplete sentences. e.g.: "the key stakeholders MTs"; "which takes a long to wait the designated doctor to reply and exist bias based on only one doctor."; "doctor. It is lack of channels"; "in the period of half one month"
Response: Thanks for your helpful guidance. The language of the whole manuscript has been improved carefully by a native English-speaking Professor.

2. The references should come from reliable source, for example, the footnote citations 1 and 2 are not official numbers.
Response: Thanks for your helpful guidance. According to the submission guidelines of BMC Medical Informatics and Decision Making: “all web links and URLs, including links to the authors' own websites, should be given a reference number and included in the reference list rather than within the text of the manuscript”, we have modified our manuscript by deleting two footnote citations and adding a reference.
“MTs have drawn intense attention of the industry according to the spokesperson of one large OHC in China [9]” (Backgroudf section, line 43, page 9) and “and this trend is now moving to form MTs online [9]” (Literature Review section, line 7, page 11).

3. The authors should provide more details on the raw data crawled from the website;
Response: Thanks for your suggestion! We have added more details on the raw data crawled from the website. First, we added both minimum and maximum value of all variables in Table 1(Measures of Variables and Empirical Models section, page 22). Second, we put the correlations of all variables in Table 2. (Measures of Variables and Empirical Models section, page 23)

4. Generalization of the statistical analysis might be largely affected by the distribution of the dependent variable TSD. The authors did not report the range and heterogeneity of this variable.
Response: Thanks for your insight comment! We added more explanations in the new manuscript: “Minimum and maximum value of all variables were also in Table 1, and the range of TSD was from 0 to 65”, and “In general, about the low TSD, the skewness value of 7.405 indicated its positive skewness and the high standard deviation (i.e., 4.6803) represented its large variances, so it was necessary for us to clarify the variation in TSD, transform the variable of TSD as Ln(TSD+1)” (Descriptive Statistics and Correlations section, line 19-34, page 24)

5. What is the correlation between the size of the team and the performance?
Response: Thank you for your insightful comment. Team size is part of team heterogeneity in this study, which is measured by the quantity of team members (Qmem). Based on the empirical results, we found that team heterogeneity was negatively related to team performance.

6. In table 2 some variables are missing.
Response: We really appreciate your comment, and we have added correlations of all variables in Table 2(Measures of Variables and Empirical Models section, page 23).

Responses to Reviewer 4
The author had covered an interesting and much need topic of heterogeneity in medical team. The survey is conducted on good number of MT and bi-variate analysis was performed to study the impact of heterogeneity. The reviewers are unable to see the form hence they cannot comment on the questionnaire used and how the factors considered in the study are extracted, due to language constraint i am unable to view the input screens. Author had discussed in detail effect of the heterogeneity but how much heterogeneous team is formed and how the experience of the opinion provider is taken for heterogeneous team is not clear primarily because the questionnaire is not clear and secondly what environment is provided for feedback collection mechanism is not clear. Author should use more recent reference.

Response: Thanks for your comment! Based on your guidance, we have modified our manuscript as follow.

First, we cited some recent reference, such as:


Second, considering the language constraint, we explain the research context and show a figure for Haodf.com (https://www.haodf.com/) in the response letter.

Haodf.com is founded in 2006 and the most professional. It has collected information on 580,000 doctors in 9,379 regular hospitals all over the country in December 2018. And 200,000 doctors were on the platform.

Third, we extracted factors in this study based on literatures and theories: “Given the secrecy and security, only price, response speed, and team composition are available information for users. We extracted factors in this study based on literatures that focused on the impact of team heterogeneity on performance in other fields and related theories especially the Social Exchange Theory highlighting social or professional capital, so we constructed a conceptual model that comprises three main elements: professional capital of team leader, professional capital of the team, and team heterogeneity. Details of the proposed model are shown in Figure 1. ” (Research Model and Hypotheses section, the 1st paragraph).

Fourth, we obtained the data by a crawl software from Haodf.com. The sample and data collect process is: “We crawled the public data and information of MTs on haodf.com to test our hypotheses. Data were collected for all teams on December 25, 2017, with the same process being repeated on January 25, 2018. As some important information such as response speed cannot be provided by MTs without patients, we delete these MTs. Finally, 890 MTs and 3,994 team members were included in our model. For each team in our dataset, we collected data related to services, and other relevant information about the leader and members (e.g., hospital and city information).”

Fifth, two parts of team heterogeneity on Haodf.com were described in Table 2, and the range of team heterogeneity was from -3.48 to 7.17. Given the value of Skewness(0.08) and Kurtosis(1.59), and the histogram of team heterogeneity, it's roughly normally distributed. However, we did not get the cooperation mechanism for each team in our study and we have added it as a limitation, “In addition, we have not gotten the cooperation mechanism for each team in our study.”