

REVIEW

of the thesis by Alua Omarova on the topic of
Assessment of safe drinking water provision in rural areas of Karaganda region: a
case study from Bukhar-Zhyrau district
in candidacy for the Degree of Doctor of Philosophy (PhD)
in 6D110200 – Public Health

1. Relevance of the research topic and its relationship with general scientific and national programs (challenges of practice and development of science and technology).

Kazakhstan experiences severe water shortages and water quality problems, especially in its rural areas and it is a vital issue to be fixed to have a sustainable future and better prosperity of the country. Under the highlighted priority, there exist some state programs, such as “State Program for the Regional Development 2020”, “State Program for the Regional Development 2020-2025,” and “Auyl - el besigi.” This research aims to perform an empirical survey-based assessment to analyze the current state of drinking water provision to the rural population in Karaganda, Kazakhstan. It further develops a set of recommendations for the improvement to access to safe drinking water in the studied rural areas. Thus the proposed research fits very well with the requirements and priorities of the national programs and research needs.

2. Scientific results in the framework of requirements for theses.

This research follows a proper setup to build a world-class Ph.D. study including a detailed literature review, an evaluation of the past and existing databases, a well-designed survey-based study construct, data collection, and analysis campaigns, and then finally an empirically supported a set of recommendations for the improvement of the identified gaps and problems. The scientific results are:

- The evaluation of the state of existing centralized and decentralized water supply systems in rural areas and main factors impacting the water utilization from alternative sources of unknown quality;
- The evaluation of public perception and satisfaction with the quality of drinking water
- to suggest a systematic approach to implement and improve the accessibility to safe WASH facilities and practices among the rural population

3. The degree of validity and reliability of each result (scientific findings), summary and conclusions formulated in the thesis.

The validity and reliability of the statements submitted to defense are mostly related to the data collected since the central part of the research is constructed on a survey sampling and data collection campaigns. The amount of the samples was good enough to provide statistically reliable and significant results. The other supporting parts of the study e.g., the literature review and the assessment of the data

from the external sources, also support well the completeness of the thesis. The research has a reasonable level of statistical analysis to support the final recommendations. The statements addressed to be defended fully consistent with the stated objectives and tasks.

4. The degree of novelty of each scientific result (findings) and conclusion formulated in the thesis.

Based on the national priorities and the requirements on the access to safe drinking water in rural areas, the degree of this study can be justified as original and high impact research on the national level. By considering that it is the first attempt using a public opinion survey sampling and assessment method in Kazakhstan, the external reviewer decided to classify it as novel research.

5. Assessment of the internal unity of the obtained results.

This thesis report reads well and presents a logically completed single scientific work. It has a fitting structure by the requirements of a Ph.D. study with the right level of compliance with the conclusions with the tasks. The objective of the thesis has been fully implemented using practical recommendations. All of the above suggests that this work has internal consistency and unity.

6. The orientation of the results obtained by the candidate to the solution of the relevant topical problem or a theoretical/applied task.

The thesis starts with an in-depth literature review and follows a detailed analysis of the existing data and knowledge to construct a foundation for the main stage. The main stage of the research includes a survey sampling and data analysis sections and then it concludes with the proper and scientific suggestions constructed on the earlier stages. All the chapters are reasonably related and contain consistent research materials.

7. Confirmation of the completeness of publication of the main provisions, results, findings and conclusions of the thesis.

The candidate published and presented the outcomes of the research in a variety of different venues which includes four articles in recommended journals by the Committee on the Control of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan; two papers in good IF international peer-reviewed journals; and five international conference proceedings. The success and the variety of publications provide a good level of completeness to satisfy any expectations from a Ph.D. study.

8. Compliance of the thesis abstract with its content.

The thesis abstract is well-written and complies with the requirements of scientific research. No recommendations or alterations are necessary.

9. Deficiencies in the content and design of the thesis.

The content of the theses and its design are entirely consistent with the requirements; however, some minor recommendations do not alter the essence of the research and do not reduce the overall positive assessment of this work. They will be highlighted on the reviewer's copy for the concern of the candidate.

10. Conclusion on the possibility of awarding the degree of Doctor of Philosophy (PhD) in the relevant specialty.

The thesis by Alua Omarova on the topic of “*Assessment of safe drinking water provision in rural areas of Karaganda region: a case study from Bukhar-Zhyrau district*” in candidacy for the Degree of Doctor of Philosophy (Ph.D.) in 6D110200 – Public Health is a complete and independent scientific work. Considering the relevance of the topic, the scientific novelty and the practical significance of the findings, I believe that this thesis work meets the requirements of the Rules for Award of Degrees approved by order from the Minister of Education and Science of the Republic of Kazakhstan. The thesis is recommended for public defense.

Reviewer:



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