



Opponent's review of the Doctoral Thesis

Candidate Ing. Hana Najmanová

Title of the doctoral thesis Evacuation of Pre-school Children aged from 3 to 6 years

Branch of study Building engineering

Tutor doc. Ing. Václav Kuplík, CSc. and Dr. Enrico Ronchi

Opponent Dr. Arturo Cuesta

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Topicality of the doctoral thesis theme

Commentary: Children evacuation is relatively new (there is at least another thesis and many papers have addressed this issue in similar ways) and an interesting subject-matter in safety science. The candidate addresses this topic in a thorough manner with scientific perspective.

excellent above average average below average poor

Fulfilment of the doctoral thesis objectives

Commentary: The stated objectives are realistic (quite limited I would say) but well stated and fulfilled appropriately. The candidate achieved the proposed objectives (comprehensive theoretical background, providing experimental datasets and information for further engineering applications).

excellent above average average below average poor

Research methods and procedures

Commentary: The general method is appropriate for a dissertation. The best methods to date in this research field have been used by the candidate. Although I'm not an expert in ethics I especially like how this issue has been addressed by the candidate. To be honest I expected more inferential statistical analysis to empower the findings rather than almost descriptive statistics. In my opinion, the amount of data collected might be explored for further studies in such a way so the overall dissertation is also promising to improve understanding of children evacuation.

excellent above average average below average poor

Results of the doctoral thesis – dissertant's concrete achievements

Commentary: The results are reliable, consistent and useful for engineering applications also providing the opportunity to formulate new and interesting research questions on the topic.

excellent above average average below average poor

Importance for practice and for development within a branch of science

Commentary: Already mentioned above. The literature review was good and captured the state of the art well, the methods appropriate and results useful but I would have liked to see some views on a way forward. I missed a discussion about what the next steps in research on children evacuation would be.

excellent above average average below average poor

Formal layout of the doctoral thesis and the level of language used

Commentary: Although I prefer shorter and more direct sentences and the constant references to different sections are not always easy to follow for readership, both the structure and the writing are in my view excellent!!

excellent above average average below average poor

Remarks

My main comments are described above. Here are my minor questions: How did the candidate conduct the statistical tests (KW and Mood's)? How did the candidate reference the measurement areas on video-recordings? How did the candidate locate the video-cameras for unannounced evacuation drills?

Recommendations: There are some statements like "However, based on the results, any apparent correlation between the pre-movement time and children's age could be stated" (Pag. 81) and "This evacuation strategy proved to be effective in the classes with a direct entry to a garden or with a single evacuation route available" (Pag.92) that are not supported/confirmed appropriately.

More inferential statistics would have provided more support to the findings. For instance chi-square test for results in Table 5.12 would have demonstrate significant association between the level of physical assistance and age (junior vs senior), $X^2(1, N=296)=18.61, p<.001$.

Final assessment of the doctoral thesis

The candidate did an excellent job exploring children evacuation. She has presented an original investigation with a well-defined problem and objectives addressed theoretically and methodologically providing evidence-based answers.

Following a successful defence of the doctoral thesis I recommend the granting of the Ph.D. degree

yes no

Date: 15/03/2021

Opponent's signature:

