

Learning by reflecting.

Master of Architecture, Urbanism & Building Sciences

Master Thesis, Delft University of Technology



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Title of subject

Learning by reflecting.

Subtitle

A learning process about A WELL certificate in healthcare housing.

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Reflection & research limitations

This thesis project started with a clear perspective on the expected subject that I was willing to investigate. In the first period, by doing an in-depth literature review, a relevant topic - which was quite unknown - for the master thesis was found. However, after the first period I created a different perspective on the expected subject that I would be investigating. First, I had the motivation to study the healthcare housing requirements in more detail, however then I could fail in achieving my objective in this master thesis. Namely, investigate the feasibility of a WELL certificate in healthcare housing for both the benefits of an ageing population and institutional investor. After some iterations and the help of my mentors, Philip Koppels, Erwin Heurkens and Hans de Jong, the final proposal and scope was narrowed down to a comprehensible level, the stated preferences of an ageing population and institutional investor for a WELL certificate in healthcare housing.

Reflection on the literature review method

After the P2 meeting, I continued with the literature review by focussing more on the principles of a WELL certificate and organized interviews with WELL experts to become more familiar with a WELL certificate. By first studying the literature about the physical healthcare housing requirements from the perspective of both an ageing population and institutional investor, it has helped me to structure the survey for both the ageing population and institutional investor. Through this study, the main themes for the survey has been found: the quality of house, building complex and neighborhood, the financial components and WELL certificate characteristics.

In addition, the findings in literature has helped me to narrow down this study in a comprehensive way. By formulating questions, for example, 'how do you achieve a healthy and comfortable building', 'how do you demonstrate that a building is healthy' and 'how can you as a building user select a healthy building'? has helped me to structure the literature review about one of the main topics of this research: the WELL certificate.

Besides this, an other important finding in the literature study was the indication of the differences between social groups within the ageing population. The literature study referred to the higher educated ageing population and lower educated ageing population whereas a distinction has been made between voters (who have enough financial resources to make choices in order to improve the quality of living) and non voters (who do not have enough financial resources to make choices in order to improve the quality of living).

These two important findings has helped me in structuring my scientific methodology. I started to see a relationship between the literature review and the scientific methodology - the stated preference method - I used. When I started to implement the most important information from literature into the scientific methodology models, I realized that it could be risky to translate the literature review into a practical research approach and, vise versa, to compare the practical research outcomes with the findings in literature. The comparison could be too broad, however, by formulating my research questions in a comprehensible way and by having a clear goal in mind, my comparison is narrowed down to a number of very particular healthcare housing factors. In other words, by reading a lot of literature beforehand, this approach ensures the prevention of a 'tunnel vision': a broad scope of healthcare housing and WELL certificate perspectives has been investigated. Due to this, I was able to oversee the main line of my thesis and what kind of literature could help me through the process in order to reach my research objectives.

Reflection on the stated preference method

In between the distribution of the surveys and the interviews, I attempted to get familiar with the choice behavior with regard to the preferences for a WELL certificate in healthcare housing. Due to much uncertainty in stating behavior when integrating a WELL certificate in healthcare housing - since this situation currently does not exist - a stated preference (SP) method is approached. The SP method is divided in a category for analyzing the choice behavior with regard to the preferences for a WELL certificate in healthcare housing. This category is called conjoint analysis. Through studying this methodology, some factors of interest (socio-economic characteristics, observable factors and attitudinal factors) and sets of attributes and attributes levels are collected. As mentioned, the respondents were asked to rate their level of agreement based on a five-point Likert rating scale (e.g. from very dissatisfied to very satisfied).

In addition, based on the compensatory and non-compensatory model it becomes clear that no major differences arise regarding healthcare housing requirements according to the perspective the ageing population. However, through both models, it becomes clear that there are differences in preferences for a WELL certificate: the non voters within the ageing population aims for more WELL certificate concepts compared to the voters within the ageing population. The stated preference method was a very useful methodology which has helped me to narrow down the finding in this study and to translate it into a comprehensive way. Normally, by using a methodology as the stated preference methodology, an in-depth statistical analysis will be made. A limitation of using this methodology for my study could be that my statistical analysis was not statistically enough - in terms of e.g. using a SPSS approach. However, since the subject of my thesis has not been investigated beforehand or in any related subject that comes close to my topic, I realized that it could be very difficult to compare my outcomes with another scientific research. Therefore, I tried to think out of the box and I have used the research approach which I mentioned in this study, wherein I have included the scientific methodology in an understandable way by incorporating the practical outcomes. It is also possible to argue that the stated preference methodology that I have used in my study, is a translation of a well-founded fieldwork study which can be used as an example for future research by using a stated preference methodology in combination with a practical research approach.

Reflection on the relating method

Additionally, the attitudinal factors are represented by individual factors scores (e.g. healthcare housing requirements with regard to house, building complex and neighborhood) that are used to explain the behavior of the different social groups. These scores allow an intuitive interpretation of the outcomes. For example, an increase in willingness to pay (extra) for a house, building complex and neighborhood that contribute to the health and well-being, will increase the utility of a WELL certificate. Through the attitudinal factor method, relations with socio-economic characteristics between different social groups and the attributes from the choice experiment can be explored. However, the factor scores do not make a distinction between the difference of variable score, which now have the same influence. Although, in this study, the interpretability of the factor scores was sufficient to provide insight into the effects of attitudinal factors regarding the preferences for a WELL certificate. The outcome of the thesis can be used in future studies: the factors that are discovered can easily be implemented in other (related) studies.

Reflection on the testing method

The time that was needed to design the final survey was underestimated. Multiple adjustments were made before the final survey was distributed. As mentioned, the literature review helped me to structure the

survey and demanded me to make choices. However, the amount of time that was needed for the design of both surveys, has helped me to collect the right information and to structure my thesis.

In addition, the distribution of the surveys - with both the ageing population and institutional investor went smooth. The use of the online tool 'Google Form' has helped me a lot in order to collect the outcomes in an efficient way. For the distribution of the ageing population survey, I decided not to send the survey through a shared link, however I went to the ageing population itself. First, I have met the ageing population in the living room where I handed out the questionnaire. However, I noticed that the ageing population did not decide for themselves but discussed the answers with each other. In order to collect individual answers, which are not effected by others, I decided to organize a structured face-to-face interview with the ageing population. With the help of the structure of the survey, I went to several houses within the building complex in order to collect the required information. The total number of respondents was 23, which is distributed over two different healthcare housing complexes in two different cities, and where two different social groups are interviewed.

Additionally, I decided to do first a survey with the institutional investors with the use of the online tool 'Google Form'. Based on this structured survey, the institutional investor knowledge about a WELL certificate could be understood since this was unknown. With the help of this survey, a face-to-face interview was organized with all the institutional investors who participate in the survey in order to collect more information about the interest to invest in healthcare housing and the feasibility of a WELL certificate in healthcare housing. The purpose of the interview was to collect information about the survey outcomes where the respondents may be unwilling to share information because some of the data needed are important to the company. Besides, the underlying definition of the survey answers will be fully understood.

In addition, most of the questions were based on factors that are formed in previous research (e.g. with regard to the healthcare housings requirements). This could increase the possibility of forming attitudinal factors and allow to compare these factors with former studies. For the ageing population and institutional investors, statements were formulated concerning the attitude towards healthcare housing, building complex and neighborhood requirements, healthcare housing requirements, financial components and WELL certificate characteristics, which could influence the preference for a WELL certificate. Some statements were adjusted after performing the preliminary survey to increase the understanding for respondents and to fit the specific objective of the statement.

In addition, the collected sample is representative for this study, however only for a small group of ageing population and institutional investors who are in particular interested in healthcare housing. A limitation of my study could be that the N-factor is too small regarding the institutional investors. However, all the institutional investors who currently are investing in healthcare housing have been studied.

Additionally, by conducting an in-depth survey and interview by the institutional investors, the motivation for investing in healthcare housing and the contribution of a WELL certificate has been investigated in more detail. Moreover, it can also be argued that the majority of the institution investors are on the 'same page' regarding the contribution of a WELL certificate in healthcare housing and towards the GRESB score. In other words, when the sample size was more than 4, no major differences in outcomes will be observed.

Personal reflection on the role as a researcher

From the thesis process, I can say that have learned to take different steps in order to make choices. This learning process has improved during the thesis process. Furthermore, a combination of reading theory

and writing down the input for the preference behavior estimation (through a compensatory and non-compensatory preference method), increased my knowledge with regard to choice behavior.

In addition, as a researcher in this study, I was very critical towards myself. This is expressed in the following: every step that I have taken during the process, expressed itself in a well-considered choice. This already started before my internship by Provast. First, I started with writing down my interest for a particular topic which I wanted to investigate. In an early phase, I contacted Provast about the possibilities for an internship and discuss my interest for a particular research topic. Additionally, both interest, that of Provast and my personal interest were merged in order to achieve a research that contribute to both interests.

Second, in that same phase I started with reading literature about the topic were I was interested in. Due to this, I could formulate my research questions which has helped me to structure my literature review. In addition, this has helped me, as mentioned, to structure my scientific methodology.

Third, one of the most important elements in my research was the practical approach: conducting surveys and organize face-to-face interviews with an ageing population and professionals (institutional investors, a healthcare housing agent and WELL experts). In order to find the right target group, I search for both an ageing population and professionals which meets the literature requirements. In addition, I have arranged the meetings with the professions and ageing population by myself. I was determined how to collect the right information. During the face-to-face interviews, wherein I conducted surveys with the ageing population, I soon noticed that organizing the surveys in a groups setting did not work. The ageing population started to discuss the questions: as a consequence they did not make a choice by themselves but were influenced by each other. As a result, I started to meet the ageing population in their own houses. This approach was very time-consuming, however I mentioned that this approach would help me to find an answer on my research questions. This approach was more preferred by the ageing population: having a 'small talk' became very appreciated.

Fourth, after conducting all surveys and interviews, I started to collect the information. With the use of the online survey tool 'Google Forms'. This method has helped me to collect the information in a comprehensive way. Additionally, through this plan of approach, the information could easily be implemented in the scientific methodology models: the comprehensive and non comprehensive preference models.

Fifth, by reading literature and writing down the research outcomes at the same time, the research content has been merged. For my feeling, I could have started doing this early in the process which could helped me in realizing that my third research question: how can the developer create a feasible healthcare housing project, could already be answered after the first two research questions. However, now I have translated this research question into a recommendation wherein the financial benefits towards the institutional investor can be explained by the developer with the use of a simple calculation. In my opinion, I would not mention this as a limitation of my research outcome, however it initiate a follow-up study that examines the financial feasibility. This will be a study in itself.

To conclude, I have not seen a comparison in scientific studies like this before, where the practical outcomes are (easily) translated in scientific methodology models. This is an added value of my study, whereas I have tried to translate the scientific and practical outcomes as simple as possible in a scientific way. Besides the up and downs, I enjoyed the learning process and the enthusiastic responses of the respondents who helped me in collecting the information that was needed for writing my thesis. This has motivated me a lot. As an advice to future researchers, which has helped me during this research process, I would recommend to create social interaction and to be patient: so much more can be realized by approaching this kind of approach instead of going 'only' for your own goals. A combination of both will add value to the outcome of the research.

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