

Reading Response 1

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1 What is the chapter about?

- The first chapter gives an overview about the entire book. It also gives a brief introduction about how buildings contribute to such high energy consumption. And how the occupants behavior in the building plays a huge impact on overspending and unnecessary wastage of energy.
- The chapter also highlights that even though there is some progress in this field of research, there is still a lack of a systematic approach to research.
- In order to standardize the research methods, the author laid down the plan of how to go about collecting the data on occupants behavior and performing scientific research in an organized manner, which will be explained in detail in the forthcoming chapters.
- The second chapter categorizes different types of occupants actions into psychological, individual, environmental and spatial adjustments. It goes further on to list the triggers and factors that can influence the occupants behavior.
- It also gives insights about various past research and its outcomes that show what factors are significant (i.e. have an impact on the action) or non-significant (i.e. does not have an impact on the action).
- The author also suggested that the research should use standardized literature and terminology. A research should also include all non-significant parameters, so that future researchers do not waste time exploring the possible impacts on those features.

2 What are my thoughts on the chapter?

- The chapters give very interesting insights about the relation between building designs and occupants behavior.
- Even the smallest of behavioral patterns, when added up for the population can cause huge impacts on power consumption.
- The list in the second chapter is very informative, as it provides information on how some features that seem like they might have an impact on the occupants actions, but do not actually affect the actions. And like the author mentioned, the terms used do not give technically correct information about what parameters were used to do the research(e.g. Room's air temperature or the temperature set on the heating device), and it also does not provide information about what kind of target sample was used to do this research. The outcome of a research will heavily depend on the demographic location, culture, age, gender, etc.

3 What are some topics I would like to discuss?

- How do we gather and interpret (run machine learning models) on occupant data which will have thousands of features and very little number of samples. For the best outcome we need

thousands of data samples and few features. If we design a machine learning solution with less data and more features it will end up being fitted to a very small sample, and won't represent the entire population.

- All the recent construction focuses on more natural sunlight in the buildings. This causes a huge impact on the HVAC (heating, ventilation and air conditioning) systems. How can we optimize and find a way to have more lights yet reduce the impact on energy consumption.