

INFORMATION ON NEW CONCLUSIONS OF DOCTORAL DISSERTATION

(Information will be posted on the Website)

Name of dissertation: **Study on the influencing factors of energy-saving behavior of Urban Residents in Hanoi**

Major: Energy Management Code No: 9510602

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Summary of new contributions of the Dissertation

1. The research synthesized related theories and evaluated the energy consumption situation and potential for energy savings among the urban population of Hanoi. A theoretical model was established to determine the factors affecting the energy consumption of urban residents by combining the TBP and TAM theories and incorporating social, demographic, and external factors. The model comprises 11 impact factors: external factors (energy policy, disease, energy prices), energy-saving intention, attitude, perceived behavioural control, norm, perceived ease of use of energy-saving products, perceived usefulness of energy-saving products, and social demographic factors (age, gender, education level, income). The total number of variables in the model is 29.

2. The influencing factors are divided into two groups: a group of directly influencing factors (the level of impact is arranged in decreasing order such as: Energy price > Energy-saving Intention > Policy > Covid-19 pandemic) and a group of indirectly influencing factors (Attitude, Perception of quality, Perception of the ease of use of energy-saving technology products, Perception of the utility of energy-saving technology products, Covid-19 pandemic, Energy price). The results of the study indicated that the daily energy-saving behaviors of urban residents are generally good, and they can save energy in daily energy consumption at any time or in most cases. Urban residents tend to save energy and reduce costs through daily use behaviors, but in terms of purchasing energy-saving technology products, they needed to show more awareness of these products (such as quality and aesthetics). Energy-saving Intention is the most directly related and directly related factor of purchase behavior, energy-saving intention can reflect the future decisions of residents to a large extent.

3. This research analyzes and compares the direct impact of different demographic and social factors on daily energy-saving behavior. The results showed no significant difference

in terms of gender on energy-saving behavior. Women's direct daily energy-saving behavior is equivalent to that of men. However, there is a significant difference in the energy-saving behaviour of families between different age groups. Specifically, people aged 36-45 years compared to those under 25 years have a higher level of direct energy saving and investment in energy-efficient use. In general, the middle-aged group performs better than the young and elderly groups in energy-saving behaviour, and more attention should be focused on promoting and guiding the energy-saving behaviour of young and elderly groups, and understanding their beliefs in energy-saving behavior, so that the level of energy savings can be improved more efficiently. Regarding family income, the direct daily level of energy saving and indirect investment intention in energy saving of those with a lower income is significantly lower than those with higher income. Therefore, improving energy literacy and the economic status of the low-income group may help increase their energy-saving behavior.

4. The perception of people regarding energy-saving products and new energy technology is the same. This study examines the perception of urban residents towards energy-saving products and new energy technology, and the results show that the majority of consumers agree that ease of use will be the aspect they will consider before making an investment intention. Next, consumers are concerned about the usefulness and quality of the products. The family income and buying behavior of energy-saving products indirectly affect their intention to buy. The results indicate that compared to the low-income group, the high-income group is less constrained by economic factors, so their intention and behavior are higher. On the other hand, the behavior of low-income household groups is more susceptible to external factors such as price. Therefore, efforts to improve consumer attitudes towards the environment will deeply impact the high-income family group. In addition, product price support for energy-saving technology will encourage low-income groups to invest in new technology products

5. External factors directly impact the energy-saving intention. A deeper analysis of the impact of energy policy factors shows that this factor has helped citizens increase energy-saving behaviors—policy factors without impact on energy-saving intention. The disease factor has a positive impact on intention and energy-saving behavior. In the short term, the external environment has led to a change in energy usage habits. A deeper study of the impact of energy policies on public perception and investment intentions in energy-saving products was carried out based on the impact of income. It was found that incentive policies significantly impact household income groups, which may encourage them to increase their purchasing behavior, turning it into an intention to buy more; consumer demand for energy-saving products is susceptible to changes in price.

6. These findings have implications not only for research but also for practice. A new model for evaluating energy-saving behavior of urban residents has been combined and improved from Ajzen's TPB model. The importance of considering not only intention but also other essential variables, such as external factors and socio-demographic factors, in assessing the impact of these variables on the behaviour of urban residents towards energy conservation. The model has been strengthened by combining it with the technology acceptance model, primarily to predict better citizens' awareness about energy-saving technological products and to propose effective energy conservation measures for the public.

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