

A review on Application of Consumer Perception of Energy Crisis.

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Abstract:

This thesis delves into the perceptions of Hungarian consumers regarding the energy situation in the country. The primary objective is to explore various aspects of consumer perception concerning the energy crisis, including their knowledge of the current situation, understanding of its causes and effects, and attitudes towards energy conservation and alternative energy sources. The research adopts a cross-sectional survey design, employing quantitative methodologies to comprehensively grasp consumers' viewpoints. The focus of this study is on Hungarian consumers' understanding of energy conservation, particularly with an emphasis on green energy. Data collection was carried out through a Google Forms questionnaire, with statistical analysis performed using the SPSS program. In addition to assessing consumer awareness and attitudes towards energy conservation, the study also considers factors such as the cost of energy-efficient devices, consumer energy-saving behaviors, and energy management strategies. The findings indicate that Hungarian consumers possess a general awareness of the importance of energy conservation, especially when it comes to embracing green energy alternatives.

Keywords — Consumer Behavior, Energy Awareness, Save Energy, Conserve (Green Energy),

I. INTRODUCTION

The energy crisis is something that has been on the public’s mind for a while now, and consumer perceptions are leaning more towards an urgency to address this climate risk. People are becoming more aware of the environmental damage done by the overuse of fossil fuels and they want the government to take immediate action. As a result, many households are making energy-saving decisions in their day-to-day lives such as switching off appliances when not in

use, upgrading their homes with renewable energy sources, and using bio fuel for transportation. In addition, consumers are willing to pay more for goods produced using eco-friendly practices as long as there is assurance that these practices will have a beneficial impact on the environment. By acknowledging these consumer perceptions, it can help us all come together to do our part in overcoming this ongoing issue.

The Covid-19 pandemic has fundamentally shifted consumer behavior regarding energy usage and

the perception of energy shortages in many parts of the world. As stay-at-home orders and social distancing measures have been implemented across the globe, many people are realizing that their personal energy usage plays a much bigger role in the global energy crisis than they may have previously considered. This heightened awareness can cause consumers to make more conscious decisions when it comes to using electricity at home, driving fuel efficient vehicles, recycling materials, and investing in renewable technologies such as solar panels. Even though the virus is impacting almost everything around us, it's great to see some positive changes arise from it by way of people being more mindful about their energy consumption habits.

Let us look at an example of electric energy consumption with the chart below, which clearly shows how much electricity was reduced in 2020 when compared to 2019. The Ukraine-Russia War and the subsequent energy crisis has had a huge effect on consumer perception of energy prices in Europe. With Ukraine, the main supplier of natural gas to central and eastern European countries, now facing difficulties due to hostilities with Russia, many are worried about the potential for price increases as supplies become harder to come by. In addition, even with sanctions on Russian oil imports in place, there is still some

concern that prices may keep rising as other sources

expensive. Consumers are also keeping a close eye on political tensions between Ukraine and Russia as any escalation could further harm already fragile energy markets. All these factors lead to an overall perception of uncertainty which is likely to continue until a permanent resolution is found. The energy crisis in Europe has put the issue of energy consumption firmly on consumers' minds. Many Europeans are increasingly taking into account their own personal energy use, and making lifestyle changes to conserve resources. When making purchasing decisions, citizens are not just considering features or prices but also the impact to the natural environment. Consumers are also more likely to consider renewable sources of electricity as part of their overall energy strategy, such as building solar panels or investing in wind power. Furthermore, there is a call for greater governmental efforts to improve efficiency in electricity production and reduce consumption through public education

initiatives and incentives for businesses that switch to renewable sources. As the effects of global warming become more widespread, the public perception of Europe's energy crisis is only likely to grow stronger

The consumer perception of an energy crisis in Asia is one of deep concern and apprehension. Many countries in the region are highly dependent on the importation of fossil fuels for energy production, making them vulnerable to rising global prices, volatile markets, and a diminishing availability of resources. In response to this, citizens are increasingly turning towards renewable and green energy sources as alternatives while governments advocate conservation strategies such as reduced electricity usage in homes and businesses. In addition, people are becoming more conscious about how they consume energy, with many opting to minimize their carbon footprint by using fuel-efficient vehicles or appliances that reduce their reliance on conventional sources. The message has been clearly received--energy conservation is not just a trend but rather a necessary lifestyle change that must be adopted if the region is ever to emerge from its current energy-woes. The energy crisis in America is a major factor influencing consumer perceptions on many levels. With rising oil and gas prices, increasing consumption of limited energy resources, and the development of more efficient technologies like solar and wind power, consumers are aware that energy prices will only continue to rise. The majority of Americans are experiencing an increased financial burden due to utility bills, putting a strain on household budgeting decisions. Proactive measures such as consuming less electricity and

using LED light bulbs for residential lighting can help conserve energy and ease the economic stress consumers are feeling from high electricity costs. To make matters worse, global warming has been linked to climate change, further impacting consumer opinions on traditional forms of energy production. As a result, consumers have become increasingly aware of the risk associated with inefficient and unreliable sources of energy production in America.

With concerns about climate change and rising energy costs, consumers are becoming more aware of the need to conserve energy and adopt a more sustainable lifestyle. The current energy crisis has made people fear an even greater crisis in the future, leading many to take steps to reduce their own energy consumption and become more mindful of their impact on the environment. Consumers increasingly view renewable sources of energy such as solar, wind, and hydro power as essential for a sustainable future, driving the development of cutting-edge technology and businesses that focus on harnessing renewable energy resources. As this trend grows, consumers will become far more conscious of their own personal energy use to ensure they are living sustainably while still enjoying modern conveniences. Overall, consumer perception of the energy crisis has led them to actively pursue efficient practices in order to protect our environment for future generations.

1. Literature Review

John M. DeCicco, Ting Yan, Florian Keusch, Diego Horna Muñoz, Lisa Neidert(2015)

The researcher conducted a survey on the dependability, affordability, and impact on the environment of energy in this study. With a sample of 500 households, we looked at the affordability of household energy bills, the same affordability of gas prices, and the impact on the environment of energy. Several notable findings emerge from the first-year results. Home energy bills are considered unaffordable if they double for customers in the low-income tercile but only when those triple for customers in the higher income tercile. Customers report much-heightened sensitivity to elevated gas prices than to higher housing energy bills when it comes to cost increases

which are deemed unaffordable (John M. DeCiccoTing Yan, 2015)

Ulas Akkucuk (2021) in his study says that 927 responses were gathered in 2015. 92% of those polled say they believe in climate change. According to the findings, one-fourth of consumers are unwilling to pay any additional fees if power supply is obtained from renewables. However, nearly half believe they might pay 5percentage to 10percentage extra. Consumers prioritize solar energy over biomass, hydroelectric and wind power generation. L. Bird, J. Sumner (2011) This report looks at customer awareness, worries, possible benefits, understanding of buying options, and renewable energy usage, as well as geographic comparisons and changes over time.

Most customers (80%) are concerned about the utilization of renewable energy. Even though renewable energy has other potential benefits, consumers associate it primarily with environmental benefits. Consumer knowledge of renewables purchase options is still relatively low. Consumers are aware of renewable power, but adoption rates are low. Shahedul Hasan; Md Amanul Islam; Md Bodrud-Doza; (2021) COVID-

19 caused the most19 concern and concern among Indian consumers, accompanied by Pakistan and Bangladesh customers. Country and age had a major influence in only one component (e.g., a person's financial situation). Finally, the factors differed significantly across three consumer groups (low, medium and high) . It suggests that consumers with a higher crisis perception experienced more behavioral changes because of COVID-19. As a result, increased COVID-19

crisis perspective results in significant changes in consumer consumption patterns and financial situation. Vytis Varanavičius, Aida Navikaitė, Y. Bilan, W. Strielkowski (2017) The standard economic concept of customer choice is based on four major elements: customer income, market rate of goods, customer preferences, and behavior patterns assumption about the maximum achievable benefit. The availability of information, including the costs and benefits that the customer will , is critical to ensuring a rational decision. In the long run, behavior that saves energy generates the conditions for the development of behavior changes. Lifestyles and some previously expressed that are performed automatically, without thinking, and spontaneously influence energy consumption behavior. Human behavior appears to influence energy consumption, and feedback on energy use is a crucial tool for enhancing this consumption. Mari Martiskainen(2007) This report examines the research on household energy consumption behaviors and how those behaviors can

3.Results

For this regression analysis we use the mean of saved energy as a dependent variable in the regression analysis to see if the independent variable has a significant effect on the dependent variable.

Independent Variable = Awareness of energy crisis

Dependent Variable = Save Energy

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.503 ^a	0.253	0.245	0.94416
a. Predictors: (Constant), Mean awareness of energy Crisis				

Table 1: Table shows dependency value

This linear regression model has a single predictor variable, level of awareness, and a single outcome variable, save energy. **R square value of 0.253** suggests that the variables have a weak positive

connection. **The R Square score** indicates that the predictor variable only explains a small portion of the variance in conserved energy. The average difference between the expected and actual values is represented by the **Std. Error** of the Estimate value of **0.94416**.

Anova Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.602	1	29.602	33.207	<.001 ^b
	Residual	87.360	98	0.891		
	Total	116.962	99			
a. Dependent Variable: Mean save Energy						
b. Predictors: (Constant), Mean awareness of energy crisis						

Table 2: Table shows analysis of variance

P-value less than **0.001** that mean energy crisis awareness has a significant effect on the mean save energy. People who are more conscious of the energy problem tend to save more energy, and this is not a coincidental association. The regression model accounts for a considerable percentage of the variation in

energy conservation behavior, demonstrating that awareness of the energy crisis is an important predictor of energy conservation behavior.

Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Error	Beta		
1	(Constant)	1.070	0.426		2.510	0.014
	Mean aware energy crisis	0.742	0.129	0.503	5.763	0.000

a. Dependent Variable: Mean save energy

Table 3: Table shows Association with depended variable

The coefficients table shows the association between energy crisis awareness and energy savings. A **one-unit increase in awareness is connected with a 0.503 unit increase in energy savings**. This association is important and is not the result of coincidence. As a result, being more conscious of the energy problem is a significant predictor of energy-saving behavior.

For this regression analysis we use the mean of Conserve (Green Energy) as a dependent variable in the regression analysis to see if the independent variable has a significant effect on the dependent variable.

4. Conclusion

The study on consumer perception of energy in Hungary offers valuable insights into how Hungarian consumers perceive and respond to the energy crisis, energy conservation, and green energy alternatives. The findings demonstrate that Hungarian consumers are generally aware of the energy issue and express genuine concerns about its impact on the environment and economy.

While awareness correlates positively with energy-saving behavior, the study highlighted that raising awareness alone may not be sufficient to induce significant behavior change. Addressing barriers such as cost considerations and access to renewable energy sources should be part of the overall strategy to facilitate the transition to sustainable energy practices. Moreover, comprehensive education and financial incentives can play a pivotal role in encouraging greater consumer participation in energy conservation efforts. In conclusion, the study emphasizes the importance of enhancing consumer awareness of the energy crisis, green energy options, and energy conservation in Hungary. Policymakers, energy providers, and environmental organizations must work collaboratively to develop targeted educational campaigns and initiatives that foster a deeper understanding of sustainable energy practices. By addressing barriers and

incorporating both environmental and economic incentives, Hungary can pave the way for a more sustainable and energy-efficient future, benefiting both present and future generations.

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