CONSUMER RESPONSIBILITY IN THE CONTEXT OF TRANSITION TO GREEN ECONOMY IN ROMANIA

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Abstract
This paper presents a quantitative research with two main directions: (1) to determine the strength of a possible association between the consumers' expectations from the companies and their willingness to be actively involved in the transition to green economy and (2) to establish the degree to which the level of education influences the expectations of the consumer regarding green technologies when deciding to buy from a company. It was confirmed that although there is a significant level of awareness regarding the impact of companies on the environment, it is not transposed proportionally in the awareness of the consumers of their own responsibility in the transition process towards a green economy.
Given the obtained results, the Romanian consumer, although aware of the importance of protecting the environment, is not convinced of his own responsibility in this process, being rather inclined to believe that it is rather an obligation of companies to ensure a transition towards a green economy than their own.

Key words: *green economy, green consumers, impact on environment, responsibility, education level*

JEL Classification: *O Economic Development, Innovation, Technological Change, and Growth*

I. INTRODUCTION

The green economy has the role to improve the social welfare and equity (Blanqueza et. al., 2020), in connection with the important reduction of dangers to the environment and ecological deficit. The transition to market economy policies and green investment suggests that the economic growth will free from the current intensive increase in consumption of raw materials and energy. A green economy can be conceived as an economy of low radiation and efficient use of resources by ensuring social inclusion. In a green economy, increased financial management and employment are to be driven by public and private investments that reduce carbon emissions and pollution, increase energy efficiency and resource efficiency, and prevent loss of biodiversity and ecosystems. One condition of achieving this transition is to shift the conventional sourced energy with renewable energy (Jeong et.al., 2021).

In this context, the research presented in this paper aims to analyse the willingness of the household consumers in Romania to be involved as active players in the process of transitioning to a green economy and to correlate it with the expectations they have from the business sector, from their role as customers (Reis et.al., 2021).

At the level of private energy consumers in Romania it appears that the higher price of renewable energy does not make it an option for the majority of the population. The cause for this attitude of the Romanian population, who seems to have a lack of interest in the renewable energy option on the energy supply market therefore seems to be linked to its higher price compared to non-renewable energy for its own consumption. Romania is forced to join the European legislation, which by decision of the European Parliament (January 2018) assumes a 35% increase in the share of renewable energy on the EU market by 2030. Although Romanian authorities believe Romania will be "somewhere close to this target", the Romanian population is quite reluctant to the option for renewable energy.

The research carried out suggests that the Romanian population is informed about concepts such as carbon footprint, but there is no solid education about how they can be translated into reality. The survey that we

conducted on a population of over 200 respondents suggests that, in fact, the main problem would be a poor correlation between what is the responsibility for the active involvement of each consumer in the transition to the green economy and what consumers expect from companies to fulfill this transition. This research brings the argument of a lack of information and, in general, of a lack of education for a renewable energy culture at the level of consumers in Romania.

This situation must be taken into account not only in the preparation of public policies on the transition process, but also by companies when designing their business model, so as to take into account both the regulations in force for the transition to the green economy, and the profile and expectations of consumers and how they are generated. The energy policy developed by the European Union covers all energy sources: fossil fuels, nuclear, but with focus on renewable energy with the goal of mitigating climate change by encouraging the consumption of clean, safe and sustainable sourced energy (Popescu, 2017).

The concept of green economy represents the economy which develops while reducing the environmental risks and ecological scarcities, in a sustainable way (Maran, Nedelea, 2017). For businesses, it is related to achieving competitive advantage (Jiantong, Ortiz, 2021) while encouraging environmentally friendly initiatives, serving green customer's needs and leading to sustainable growth for the country (Ali et. al., 2017).

The role of the statal actors is to formulate policies which provide a stable environment in which the business can freely develop towards a green economy (Surmanidze, 2019). What business opportunities are concerned, the alternative would be to combine the technological innovations with social and sustainable solutions which will support the transition to green economy (Barth et. al., 2021). Therefore, a focus on business models is required, meaning the way a company creates, delivers, and captures value for its customers (Osterwalder and Pigneur, 2010) in order to create a flexible business which will adapt to this transition (Curtis, 2021).

In this context, the concept of responsibility is becoming increasingly important both in the personal life as well as in the professional life of the society members, in everyday actions as well as towards business partners, the environment, etc. (Trifu et. al, 2017). In order to achieve a transition to green economy the fact that the human being is a social animal must be considered, and therefore the consumer behaviour must be considered. The role of the consumer is increasingly important as the player of the market with the power to drive sustainable development (Arp et. al., 2018). Therefore, on the one hand the business sector has the responsibility of offering to the market products which respect the environmental standards and, on the other hand, the consumers must change their consumption habits and purchase options accordingly (Krasulja et. al., 2020).

In the case of Romania, which is discussed in the research presented, the transition to a capitalist market was not accompanied by public policy which should have guided the economic development and coherence between the business and social sector (Lusca, 2021). Therefore, especially through the current transition process, towards a green economy, coherence and stability are key factors and must be ensured through adequate policies which take into account the consumer profile.

II. RESEARCH METHODOLOGY

The research consists of a semi-structured questionnaire containing a list of both close ended questions, as well as questions with the possibility for the respondents to add answers to the list, which was answered by 207 residents in Romania, with a balanced gender and age distribution, as seen in the figures below.

The answers which were not valid were removed from the analyzed data prior to the statistical tests being run. The data related frequencies and percentage figures presented throughout this paper are considered valid in proportion of 100%.

The data obtained was analyzed using SPSS Statistics and the output is discussed in the Results section of the paper.

Table 1. Gender distribution

Gender	Frequency	Percent
Female	91	44%
Male	116	56%
Total	**207**	**100%**

Table 2. Age distribution

Age group	Frequency	Percent
< 18 years old	3	1.4%
18 - 30 years old	52	25.1%
31 - 40 years old	71	34.3%
41 - 50 years old	51	24.6%
> 50 years old	30	14.5%

Total	207	100%

The main objective of the research was to correlate the consumers' expectations from the companies with their willingness to be actively involved in the transition to green economy.

The first research hypothesis is that there is a positive correlation between the consumers' expectations from the companies and their willingness to be actively involved in the transition to green economy.

The second research hypothesis is that there is a positive correlation between the level of education and the expectations of the consumers regarding green technologies when deciding to buy from a company.

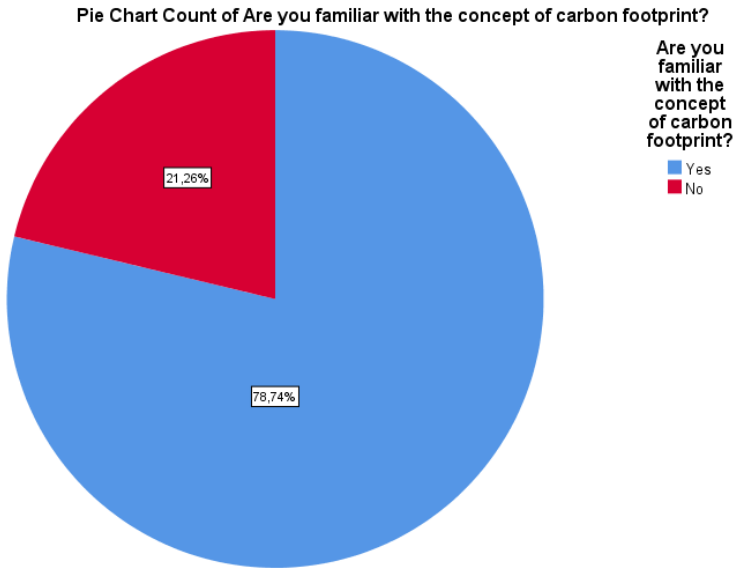

Figure 1. Familiarity of the population with the carbon footprint concept

As seen in Figure 1 above, the majority of the respondents were familiar with the concept of carbon footprint, indicating they were previously informed from various sources on one of the most popular indicators of how the companies measure their impact on the environment.

III. RESULTS

In order to test the first research hypothesis and to establish if there is a positive correlation between the expectations of the consumers from the companies and their willingness to be actively involved in the transition to green economy, a crosstabulation was performed, as seen in Table 3 below.

As seen in the count of the responses, the majority of consumers are not willing to pay additionally for renewable energy, whereas at the same time, more than 50% of the respondents consider that the information regarding the percentage of green energy used by producers represents a criteria in their purchasing decision. This would indicate a contradiction between the willingness to be actively involved in the transition to green economy and the expectations the consumers have from the industry or business sector to provide green solutions. This is in line with the literature review performed, indicating that there is a general mentality that the transition towards a green economy does not represent a responsibility of each individual of the society, but rather is an obligation of organisations, businesses and state institutions (Arp et.al., 2018).

Table 3. Crosstabulation between the extent consumers agree to pay a higher price on the energy bill for green / renewable sourced energy and the importance of the information regarding the percentage of green energy used by the producers and / or distributors of the products / services when deciding to purchase

		How important is the information regarding the percentage of green energy used by the producers and / or distributors of the products / services in your purchasing decision?					Total
		Unimportant	Slightly Important	Moderately Important	Important	Very Important	
To what extent do you agree to pay a higher price on the energy bill for green / renewable sourced energy?	Strongly Disagree	21	8	8	4	1	42
	Disagree	8	31	18	33	3	93
	Undecided	0	7	14	10	0	31
	Agree	0	4	2	15	3	24
	Strongly Agree	1	1	1	6	8	17

Total	30	51	43	68	15	207

In order to determine if there is a correlation between the two variables, a chi-squared test was performed. As the Pearson's Chi-Squared assumption was violated and 50% of the cells have expected count less than 5, the likelihood ratio is considered, confirming that with an asimptotic significance < 0.05, there is indeed a correlation between the two variables, as presented in Table 4 below.

Table 4. Chi-Squared Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	124,121[a]	16	.000
Likelihood Ratio	102,011	16	.000
Linear-by-Linear Association	50,007	1	.000
N of Valid Cases	207		

a. 10 cells (40.0%) have expected count less than 5. The minimum expected count is 1.23.

Although a correlation is present, the association strength between the two nominal variables is measured using Cramer V's, and as indicated by Table 5 below, the two variables have a low to moderate association.

Table 5. Symmetric measures

		Value	Approximate Significance
Nominal by Nominal	**Phi**	.774	.000
	Cramer's V	.387	.000
N of Valid Cases		207	

This result indicates that only a weak association can be observed between the willingness of consumers to pay for renewable energy and their expectations from companies to provide green solutions when facing a purchasing decision.

In order to test the second research hypothesis and determine if there is an association between the level of education of the consumers and their expectations regarding green technologies when deciding to buy from a company, we initially performed a crosstabulation as presented in Table 6 below, regarding how often the respondents inform themselves about the impact on the environment during the production process of a good/service in their purchasing decision and their education level. As seen below, the proportion of respondents who do inform themselves about the impact on environment before buying a product increases as the education level increases.

Table 6. Crosstabulation of customers' willingness to inform themselves about the impact on the environment of the materials used in production and about the carbon emissions of its production process before purchasing a product and their education level

		How often do you inform yourself about the impact on the environment of the materials used in production and about the carbon emissions of its production process before purchasing a product?					Total
		Never	Rarely	Sometimes	Often	Always	
Education	**High School**	10	6	1	3	1	21
	Bachelor's Degree	9	18	9	11	6	53
	Master's Degree	15	27	20	42	7	111
	PhD	2	8	2	6	4	22
Total		36	59	32	62	18	207

In order to test if there is indeed a statistical correlation between the two variables, a chi-squared test was performed as presented in Table 7 below. As the Pearson's Chi-Square assumption was violated and 35% of the cells have expected count less than 5, the likelihood ratio is considered, confirming that with an asimptotic significance < 0.05, there is indeed a correlation between the two variables.

Table 7. Chi-Squared Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26,636[a]	12	.009
Likelihood Ratio	23,929	12	.021
Linear-by-Linear Association	9,589	1	.002
N of Valid Cases	207		

a. 7 cells (35.0%) have expected count less than 5. The minimum expected count is 1.83.

The strength of the association between the two nominal variables is measured using Cramer's V, and as indicated by Table 8 below, the two variables have also a low to moderate association.

Table 8. Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	**Phi**	.359	.009
	Cramer's V	.207	.009
N of Valid Cases		207	

IV. CONCLUSION

In Romania there is not a mentality among the consumers relating green energy. Therefore, designing a business model is complicated given the uncertainty. In order to suceed in attracting customers, firstly the companies must insist on informing the public why investing in green economy is important. Even in the urban population with a high level of education, who are aware of the concepts of carbon emission and renewable energy, are not yet convinced of why it would be worth to pay additionally for them. The concepts must be operationalised by the population and for this purpose the education regarding green economy should be shifted from the late development to the earlier stages.

A visual representation of the relationship between the education level and the importance of a company's greenhouse gas emissions is presented in Figure 2 and it underlines the fact that there is a relationship between the level of education of the consumers and the level of awareness regarding the impact on environment in their daily purchasing decision.

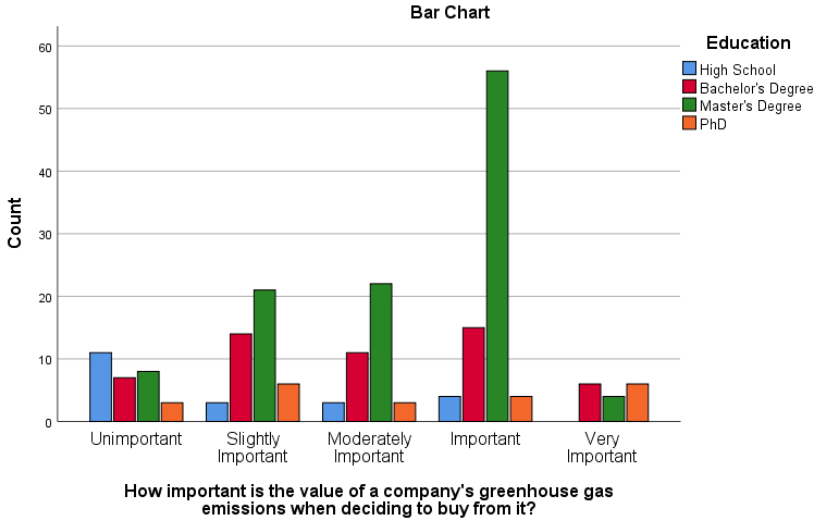

Figure 2. Illustration of the importance of a company's greenhouse gas emissions in the purchasing decision of customers in relation to their education level

The first research hypothesis was validated, as there is a positive correlation between the consumers' expectations from the companies and their willingness to be actively involved in the transition to green economy. But the degree of association between the two variables is low. Although there is a significant level of awareness regarding the impact of companies on the environment and how they are mentioned (as almost 80% of the respondents are aware of the concept of carbon footprint), it is not transposed proportionally in the awareness of the consumers of their own responsibility in the transition process towards a green economy.

The second research hypothesis was also validated and therefore it was determined that there is an association between the level of education of the consumers and their expectations regarding green technologies when deciding to buy from a company. Therefore, the awareness of the consumers regarding the impact on the environment of the companies when deciding to purchase from them is correlated with the education level.

Given the above presented results, the Romanian consumer, although aware of the importance of protecting the environment, is not convinced of his own responsibility in this process, being rather inclined to believe that is is rather an obligation of companies to ensure a transition towards a green economy than their own.

A solution to this issue would be to introduce concepts related to the transition to green economy in school/ early education, as in the current context rather the higher education levels provide information relating to the impact on environment and the importance of transitioning towards a green economy, as confirmed by the second research hypothesis.

The household consumers and the general population should be considered a partner and an active player in the transition to a green economy, in order for this process to be successful and efficient and adequate policies should be developed in order to achieve this goal.

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