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How Does Energy Poverty Effect the Education of Roma ?
Could Renawable Energy Stop the Early Marriage Of Roma Children?

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Abstract

Background: 50 million of the 200 million energy poor people identified by the International Energy Agency (IEA) live in Europe, and the poorest risk group in Central and Eastern European countries are Roma, One in ten Roma live in electricity-free accommodation and half of Roma children aged 15-18 are out of school.

Implementation: In this paper, we discuss different approaches to energy poverty with considerations in environmental justice. How could energy poverty impact the education of Roma child and how could it cause early marriage of Roma children? In order to test our hypothesis, we were determined two case studies on energy poverty in Turkey and Bulgaria consider house temperature rate. We were planned to collect data by semi-structured interviews with 30 Roma households and analyse with content analysis method, as a seconder data we were aimed to discuss with 11 Roma university students and two Roma professors who came from nine countries.

Result: I argued that the use of electricity and education are correlated. Therefore, energy poverty generates intergenerational poverty in Roma community which is the largest community in Europe, in addition to this one of the other consequences is the early marriage of Roma children. We were seen a sustainable energy solution for Roma children who do not have any lighting to study and provided sun lanterns to them.

Keywords: energy poverty, Roma, education, early marriage, sun lanterns

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Picture 1 :Roma children



INTRODUCTION

Lack of access to energy plays a vital role for the Roma minority, which is one of the largest minorities in Europe. It directly affects education, health and gender and it causes a gap between Roma and non-Roma people in the field of education. Lack of energy marginalizes access to education to the Roma community thus making EDUCATION the biggest problem. International experts say this creates a kind of intergenerational poverty. A 2012 study in 11 European Union countries found that Roma children had lower enrolment and attendance rates across Europe, and only 15 percent completed high school. For example, 15,000 to 20,000 Roma living in informal camps in France are facing evacuation threats. Two-thirds of children rarely or never attend school ("Europe's Roma Do Not Have Equal Education", 2020). Every Roma child has a right to get education in a healthy environment. BUT unfortunately, this is not the case for the Roma people as the environment is the place (space) of socio-cultural discrimination (Harper, Steger & Filčák, 2009).

Energy poverty is associated with society and education is a mark of society that shows quality of common population, in other word there's a connection between energy use and education. Where is the energy used? Who uses energy? In Roma community the energy is used for fundamental needs such as heating, lighting and use of appliances by woman or girl child. In case of the lack access of modern energy sources they have to spend much more time to cook, gathering firewood and heating her house, however this extra time is spread their sleeping, education, or hobby time. For this reason, the girls and women of Roma community are becoming less educated, according to research; the proportion of Roma girls who attend school is less than that of boys. While energy poverty causes less education for Roma girl child, is energy poverty causes the early marriage for Roma child who left their schools? Or how does energy poverty effect education of Roma girl? Possible answers and solutions to these questions were discussed in this study.

How we can see energy poverty in environmental justice view ? Lack of access to clean water, waste mismanagement and poorly built sewage systems. Hence, a severely polluted environment is know issues which are faced by Roma community, however, energy distribution and sharing also is a environmental justice subjects (Babourkova,2010).

Picture 2 : The children who live in tent



Energy Poverty and Fuel poverty

All people living in the world have basic needs such as food, shelter, and health. Energy also has an important place among basic needs. Energy poverty "is situation whereby human beings do not have enough or no access to modern energy services" or "not being able to use energy resources adequately even though access to energy is provided". (Electricity poverty, such as lack of heating) Fuel poverty is examined under three main headings: income, energy prices and quality of life. If a household spends more than 10% of its income on fuel bills, that household is defined as energy poor. (Boardman, 1993)

50 million of the 200 million energy poor people identified by the International Energy Agency (IEA) live in Europe, and the poorest risk group in Central and Eastern European countries are Roma (Crowe, D. 1996). Studies show that 80% of Roma live below the poverty line and have difficulty paying their fuel bills, and many of them cannot access electricity sources or face environmental discrimination in electricity distribution (Babourkova,2010). While 90% of Roma in Spain are poor, this rate is 96% in Greece and 93% in Croatia. According to the survey data, 92% of the Roma suffer from financial difficulties (European Union Agency for Fundamental Rights, 2016).

The situation is not much better for Roma living in other parts of the world. The most painful example was seen in Turkey when a Roma woman (Emine AKÇAY) searched for wood for hours to warm her children but unfortunately the wood was wet and could not be ignite up so she turned on the hairdryer to warm her children and gave it to her eldest child and committed suicide in the other room.

Picture 3 : The children study Infront of candle



Effect of The Energy Poverty to Education

Although electricity production is physical and chemical, its consumption and equal sharing is social. Despite the active use of electricity for almost one and a half centuries, one out of every five people worldwide experience problems in accessing electricity (International Energy Agency, 2020). Petrochemicals spilled from gas lamps cause 80,000 children to catch pneumonia every year in South Africa due to studying in front of gas lamps. Many children in Uganda face serious health problems in fires because of the candle falling into bed while studying (*Achieving Sustainable Energy for All in the Asia-Pacific*, 2013) Roma people living in Spain, Czech Republic, Bulgaria, Bosnia and Herzegovina, Romania and Macedonia face big problems with electricity.

Fifty percent of the Roma population in Serbia live in slum-like shelters made of mud, metal and plastic, while 10% haven't access to electricity (European Union Agency for Fundamental Rights, 2016). 80% of Roma are at the risk of poverty and it can be predicted that they cut their budget for electricity bills from education and nutrition expenses. In other words, energy poverty may be the cause of nutritional poverty.

Studies in the literature show that 30% of Roma children go to bed hungry at least one night in a month. 6.6% of Roma children are underweight and 10.2% are born with low weight (European Union Agency for Fundamental Rights, 2016). The reason for this is the mother's malnutrition. Energy poverty and malnutrition have lasting negative effects on health and development. While babies' malnutrition leads to stunting in terms of physical development, it also has a devastating effect on cognitive development.

Electricity grids may be cables linking the Roma living in barracks to life and education. There is an obvious relationship between electricity and educational achievement, with education being the most essential component for poverty reduction (Kanagawa & Nakata, 2008) See Figure 1, there is a correlation between electrification rate and youth literacy rate.

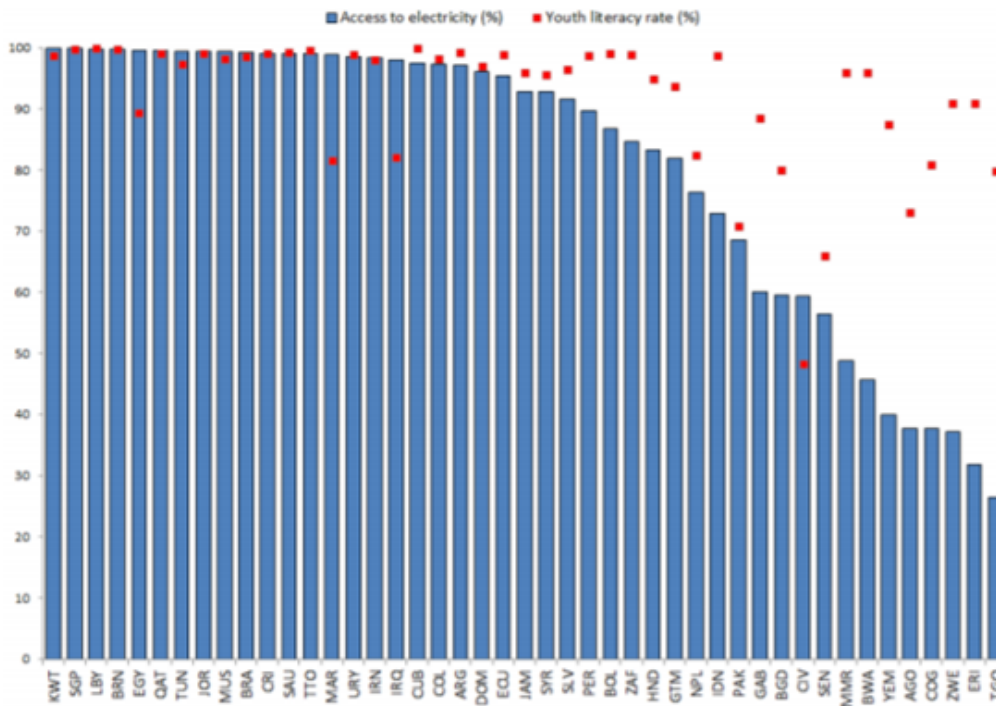


Figure 1, Electrification rate (% of population) and Youth literacy rate (% people age 15-24) for 45 developing countries,2012

Source: *The 2014 World Bank. "The data." Accessible at <http://data.worldbank.org/>*

While lack of electricity causes lack of education, unemployment is a result of lack of education. In the 21st century, access to electricity means access to information, modern information and communication tools need electricity, moreover, during the pandemic period, education has been transferred to online environments, and it is wondered how energy poverty and poverty from modern energy resources will affect the education of Roma students already attending school. Another sub-problem of my research will be how energy poverty affects the education of Roma students during the pandemic process.

The currently known rates can be summarized at Table1. In the table, it is seen that only 10 Roma in Bulgaria attend secondary education and 90% complete primary school and less than one education level. In addition, one percent of Roma living in the three countries compared in the table were able to attend secondary school.

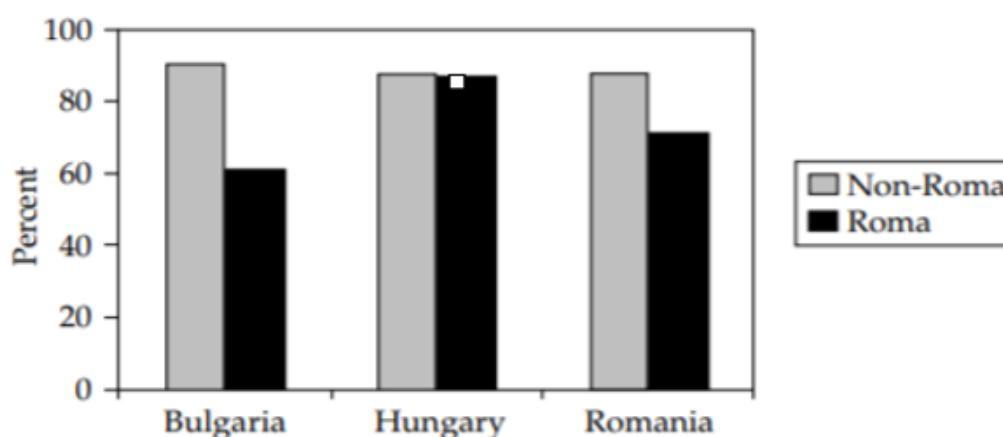
Table 1 Educational Attainment By Ethnicity, 2000

	<i>Bulgaria</i>		<i>Hungary</i>		<i>Romania</i>	
	<i>Non-Roma</i>	<i>Roma</i>	<i>Non-Roma</i>	<i>Roma</i>	<i>Non-Roma</i>	<i>Roma</i>
Primary or below	32.7	89.6	35.0	76.4	33.1	66.5
No education	1.3	15.0	0.3	4.3	1.9	13.4
Incomplete primary	9.4	39.6	10.7	22.1	15.0	27.0
Complete primary	22.0	35.0	24	49.9	16.2	25.2
Some secondary	53.8	9.6	53.0	23.4	56.3	32.4
Completed primary and apprenticeship	2.2	1.8	25.5	19.0	18.9	13.1
Incomplete general secondary	2.3	1.6	6.1	1.5	6.6	9.0
Completed general secondary	19.4	3.0	17.5	2.7	23.9	8.9
Secondary and vocational	29.8	3.2	3.8	0.2	6.9	1.3
Higher education (complete and incomplete)						
Including post-secondary and university	13.5	0.5	12.0	0.2	10.4	0.3
No answer	0	0.4	0.1	0.1	0.1	0.8

Source: (Ringold, Orenstein & Wilkens, 2005)

The Table 2 compares the school enrolment of Roma and non-Roma; There appears to be a large difference between children of primary school age in Bulgaria and Romania. While the schooling rate of Roma children is 33% lower in Bulgaria, this rate is 20% in Romania

Table 2 Enrolments In Education, 2000 (Percent of children aged 6-14)



Source : (Ringold, Orenstein & Wilkens, 2005)

Other factors affecting the school attendance of Roma children; poverty, discrimination and distant schools from Roma settlements. However, there is no research in the literature on the effect of energy poverty on the education of Roma students. Nevertheless, this event can be viewed by combining energy, education and gender points.

Picture 4 : The Roma girl who is sitting in the classroom



Energy Poverty + Gender Inequality + Drop out of school = Early Marriage

Seventy percent of the world's poor people are women, in addition women and children are the first to be affected by energy poverty. (United Nations Development Programme,2013). Women are responsible for collecting wood (firewood), cooking and other daily housework in the Roma community. Gender roles cause Roma women, who lack modern energy resources, to spend more time on daily work. For example, in the summer, the Romani woman and her daughter go to the forest to collect wood, they have to carry the wood of almost their body weight 5-6 kilometres on their back, and in the winter they burn them together again to warm the households. they are struggling with their mother along with energy poverty. Romani women cannot use this time for their personal development and education.

UNICEF estimates the Roma attendance rates and success of female students that the rate of primary school enrolment for Roma girls is about 64%, while the average for non-Roma girls in comparable socio-economic factors is 96% (UNICEF, The Right of Roma children to education, p. 16.)

We can say that the drop-out rates and early marriage rates are in a correlation. According to a study conducted in Albania in 2011, one out of every three Romani girls between the ages of 13-17 get married at an early age (De Soto, 2005). In another study conducted on 74 Roma women in Italy, it was determined that 64% of Roma got married before they turned 18.

The biggest fear of a poor family is energy poverty, while the first person to blame for energy poverty is a woman. Other members of the family will blame it if the food is not cooked well because it cannot access modern energy resources. Depression occurs in one in four women in stressful households, and this may reflect uneasiness in the household. One in 6 Roma girls get married before the age of 15 (UNICEF, 2011) Could it be because they dropped out of school due to energy poverty and helped their mothers and saw early marriage as a salvation by escaping unrest at home? Could solar panels stop early marriage of Roma children?

Picture 5 : The Roma girls carrying firewood



RESEARCH QUESTIONS

In the course of finding solutions on how the Roma community can be assisted and do away with this problem of Energy Poverty and its direct impact to their Education,

Questions such as;

1. To what extent is the Roma community affected by Energy Poverty?
2. What is the direct role of Energy to education in Roma community?
3. How does Energy Poverty contribute to failed education in the Roma community?
4. What is the role of gender in the provision of Education in the Roma society and how Energy Poverty effects gender?
5. How can Energy Poverty be eradicated?

Provide a base of hypothesis to the existing problem and open way to predictable solutions.

RESEARCH METHODOLOGY

In order to better understand how energy poverty affects the education of Roma children, two types of data will be collected, primary and secondary. The primary source of data that combating energy poverty living in Turkey and Bulgaria will be collected by semi-structured interviews with 30 Roma households. After analysing the primary data, a semi-structured interview will be held with two Roma professors (Simona Torotcoi and Angela Kocze) from a Central European university and 11 Roma university students studying in the RGPP program, and the solution proposals will be discussed with interviews for the primary source.

Each interview will take 25 minutes and the answers will be recorded in written and oral form. Interviews will be transcribed, and stylistic analysis will be conducted. The research questions will be discussed with interviewees. There will be two types of interviews: one type with Roma in two neighbouring countries (Turkey and Bulgaria) Each theme will be analysed to obtain an interpretation of the attitudes and motives of the participants.

RESEARCH TIME SCHEDULE

Table 3 Primary Schedule

Countries	Turkey	Bulgaria
Research Date	25 /12 /2021 - 28 / 12 /2021	20 /12 /2021 - 23 / 12 /2021
Number of interviews	30 intervieu with Roma households	30 interview with Roma households
Specific point of research place	Izmir / Turkey	Plovdiv / Bulgaria

Table 4 Secondary Schedule

Name	Country	Interview Time
Prof.Dr. Angela KOCZE	Hungary	10/02/2022
Prof.Dr. Simona TOROCOÏ	Germany	10/02/2022
Ersan KUCUKOĞLU	Turkey	11/02/2022
Alba HERNANDEZ	Spain	11/02/2022
Mikulas LAKATOS	Slovakia	12/02/2022
Gopalas MICHAILOVSKIS	Ludivina	12/02/2022
Mariya ATANASOVA	Bulgaria	13/02/2022
Miljana CABRILOVSKI	Serbia	13/02/2022
David COBZARU	Romania	14/02/2022
Petro RUSANIENKO	Ukraine	14/02/2022
Djani BAFTIJARI	Montenegro	15/02/2022
Sevdjule RAMADANI	Serbia	15/02/2022
Burcu KISAC	Turkey	16/02/2022

RESEARCH PLACES

A wide literature review was conducted to determine the research location of this report. The research location was selected based on the number of households that could not adequately heated. Bulgaria has the highest rate among European countries, as seen in Table 6, and Turkey comes after Bulgaria. In addition, the low enrolment rates in these countries were another parameter that was taken into consideration.

Table 5 Proportion of Households In the EU and Turkey Who Do Not Get Enough Heat (%)

	2008	2012	2016
European Union	-	10.8	8.7
Bulgaria Case2	66.3	46.5	36.5
Turkey Case1	41.0	37.2	22.2
Belgium	6.4	6.6	4.8
Germany	5.9	4.7	3.7
Spain	5.9	9.1	10.1
Hungary	9.7	15.0	9.2
Slovakia	6.0	5.5	5.1
Romania	24.4	15.0	13.8

Picture 6 : Roma looking the sun panel



CONCLUSION AND RECOMMENDATIONS

Energy is not only a physical object, but also an essential necessity, such as food, shelter and wellbeing. In Maslow's pyramid of needs, we need energy to supply our physical needs. For example, heating, lighting, and cooking needs are met with energy, lack of energy implies lack of basic needs. According to Maslow, one cannot move to another without satisfying a need step, for example, a self-realization step cannot be taken without fulfilling physical needs and protection needs. In other words, if you are sick or cannot supply your warming needs, you cannot focus on education. What's more, your attention can be distracted by a little dark in your study environment. So How do you study in a house without electricity?

Studies show that Roma live in darker and more humid conditions compared to other ethnic groups, and 10 per cent do not have access to electricity, and half of Roma children aged 15-18 are out of school (European Union Agency for Fundamental Rights, 2016). There is a direct connection between energy and education, and education plays an important role in the development of society. The prevention of energy poverty will contribute to the development of the Roma community. In other words, electricity grids may be cables linking the Roma living in barracks to life and education.

Access to modern energy resources will help Roma women to educate themselves and perhaps decrease early marriage rates. They won't be looking for firewood and will be able to use this time for their own development. In addition, investment by policy makers in energy access will lead to gender equity and increase the participation of Roma girls in education. A lamp illuminated in a warm house may be a symbol of a woman's liberation. May be solar panel can stop early marriage of Roma child.

WHAT WILL DO FOR THIS RESEARCH

The rate of those who cannot heat their homes is 8.2 percent in EU, and it is 22.3 percent in Turkey. The rate of those who do not pay their electricity and gas bills is 8.1 percent in Europe and it is 22.4 percent in Turkey (KÖKTAŞ, 2018). Information on ethnic identity is not given in the literature. What is the situation of European Roma and Asian Roma regarding energy poverty? What country is more beneficial the Roma community about energy poverty? (Bulgaria or Turkey)

Bulgaria has the highest Roma community in Europe, based on its national population. Turkey, on the other hand, has the largest Roma population in the world. This research will also be a comparative analysis of east and west about energy poverty which effect Roma education.

- ❖ A research project for this research will be written to the Central European University.
- ❖ Interviews will be done on the primary source (in the provinces listed in 2 countries) to identify Roma households with problems with electricity and lighting.
- ❖ Semi-experimental interviews will be conducted with two Roma professors who have previously been struggling with the issue of energy poverty and 11 Roma university students from 9 different countries. Academic perspectives will be pursued to solve the issue of energy poverty.
- ❖ Small solar lamps will be provided for Roma students who have issues with electricity and illumination. (Expenses will be compensated by the research study fund.)
- ❖ Quick assembly of small solar panels will be done with together Roma students who have issues with enlightenment. This research will be a role model for Roma students who are facing energy poverty and will also aim to raise students' interest in science and education.
- ❖ The RGPP Group and Roma professors will be asked to write their own energy poverty stories, and the stories gathered will be published in a book (This step depends on permits, time, and expenses)

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