

ESSAY: RETHINKING THE CONCEPT OF ENERGY POVERTY, A CONCEPTUAL THEORETICAL DISCUSSION

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Abstract: Document that makes a conceptual review, more than application and measurement, on a relatively recent concept called energy poverty. The objective is to open the discussion on the concept of energy poverty, for this, the authors of the same, make a proposal that they consider gives greater precision to the concept, from there it is understood that a reconceptualization of what is currently proposed It is called energy poverty. The scope of the present is of a conceptual theoretical nature, on energy poverty. The methodology has been carried out from the collection, analysis and discussion of scientific publications on the topic under study. This, seeking to have publications from the different continents of the world that address the issue of energy poverty. Input; In this document a section of theoretical discussion is addressed, which is not taken as a theoretical framework, but presents different conceptions of energy poverty, from there, this document, the authors, consider that it is necessary to give more precision to the concept and this is how a reconceptualization proposal arises. It is proposed that the grammatical structure to establish the different typologies on the study of energy poverty, be as described below: Energy Poverty (+) type of energy (+) subject or object of study.

Keywords: Poverty, energy, electricity, reconceptualization.

INTRODUCTION

The study of the conditions of humanity, from a multidisciplinary vision, between social and natural sciences, is becoming more and more common, that jealous line that separated each of the sciences, which seemed divergent and which repelled each other by definition, in the 21st century fades.

Thus, the study of something that has been called energy poverty, is a discussion of a transdisciplinary nature, a concept of relative

novelty and study, it is necessary for both the social and natural sciences; in their disciplines and professions, such as: economists, electricians, environmentalists, humanists, sociologists, to name a few.

At present there is a wide variety of theoretical approaches to the term poverty, which has given way to a multifunctionality of the concept, this opens the way for the word to be used in such a way that anyone freely decides their concept or is linked to it. for the creation of new concepts.

This multifunctionality has allowed the formation of the concept of energy poverty, however, the concept of energy poverty can confuse or distort what is sought to be identified, in such a way that researchers or people from different parts of the world consider it differently, reaching to exist a disparity of variables used between investigations carried out in different continents.

Energy poverty encompasses multiple dimensions that impact life, which are health conditions, social inclusion problems, physical-mental well-being and, ultimately, productivity. According to recent studies, it is proposed that poverty is also related to insufficient access to refrigeration during the summer, being a factor that seriously impacts cities where the effect of the urban heat island is perceived (Karpinska and Smiech, 2020).

This essay aims to open the debate on the concept of energy poverty, and in turn, makes a proposal to start giving it more pressure. The chapter is sectioned by: reference and context, brief conceptual discussion, methodology, background, resizing the concept of energy poverty, proposal of the concept of energy poverty.

REFERENCE AND CONTEXT

In 2005, Abdul Waheed and Sadia Karim announced, at the first international conference on environmental horizons, a

document published in 2007, that energy poverty would be further linked to sustainable development indicators. It was predicted that the lack of access to energy would become one of the most constant problems in the countries, increasing social, economic and environmental problems, for this reason the need arose to diversify the obtaining of energy resources separated from the use of fossil resources and is especially linked to the implementation of renewable energies.

In the publication of George, Obeng, and others (2008) a study was carried out with the purpose of identifying energy poverty in Ghana, the results were that about 80% of the houses were relatively energy poor, due to the lack of energy. Furthermore, for this reason people used candles and batteries more frequently, in order to slightly satisfy some needs. This study showed that only 10% of the homes in Ghana had the resources to install solar technology to obtain electricity, which led to the conclusion that it is necessary to try to reduce energy poverty in communities that are without connection. through the implementation of renewable technologies.

The issue of energy poverty has drawn the attention of many researchers around the world due to the consequences of the COVID-19 pandemic in terms of economic, social, and health crises, and above all, a growing energy crisis derived from the increase in energy costs. energy (Sovacool, Furszyfer and Griffiths, 2020).

The United Kingdom has been one of the pioneers on the subject, thanks to Boardman in leading the concept of energy poverty, since in the early 1990s in the first United Kingdom Fuel Poverty Strategy an energy-poor household was defined as those who need to spend more than 10% of their total income for the use of fuels, where mobility and transportation needs were excluded. Subsequently, the concept of energy poverty

focused more on the present is discussed, which is defined as the inability that exists in homes to achieve a level of basic energy services, focused more on the use of basic electrical appliances (Barrella, Linares, Romero, Arenas and Rye, 2021).

BRIEF CONCEPT DISCUSSION

The International Energy Agency in 2002 proposed a concept focused on developing countries, where energy poverty is established as “inaccessibility to electricity, lack of electrical installations or dependence on fossil fuels or biomass”. The existence of energy poverty in developing countries significantly affects human well-being more. This reveals that the negative impacts caused by energy poverty in developed and developing countries have notable differences (Zhao, Jiang, Dong X, and Dong K. 2021).

For its part, the National Council for the Evaluation of Social Development Policy (CONEVAL), an institution of the Mexican State, according to the General Law of Social Development defines poverty as “Those living conditions that violate the dignity of people, limit their fundamental rights and freedoms, prevent the satisfaction of their basic needs and make their full social integration impossible” (CONEVAL, 2018).

According to Benjamin and Sovacool (2012) The concept of energy poverty has been confirmed by the International Energy Agency as the lack of access to electricity and dependence on traditional biomass fuels for cooking such as firewood, straw, bark, etc. However, people in conditions of energy poverty have serious and growing problems, which directly affect their health, since to obtain resources such as firewood or some other they can be injured or hit during harvesting, and when using these as a means heat or cooking, pollutants are emitted into the air that affect humans. In the same way,

the lack of electrical energy does not allow keeping food refrigerated and fresh, or receiving adequate medical attention due to the lack of electricity.

Tabata T. and Tsai P. (2020) describe energy poverty as one in which people do not have enough income to pay energy costs for heating during winter time. This concept is used this way due to European criteria given the low temperatures in Europe, however, in the Asian region such terms are not applied due to the high levels of heat.

In Mexico, energy poverty is mostly related to deprivation or lack of access to energy services, which are essential to satisfy basic human needs. The basic services according to this author are water treatment, heating or ventilation of homes depending on their location, as well as lighting and refrigeration (García and Graizbord, 2016).

METHODOLOGY

For the development of the methodology, a research was carried out on scientific articles, case studies and international publications through the database offered by ScienceDirect. In order to obtain knowledge about the origin of the issue of energy poverty, the searches on the ScienceDirect page were filtered, which made it possible to obtain that the term began to have relevance approximately around the year 2002 due to the lack of economic resources in the Asian and African continents. As well as the review of articles after the year 2020 was carried out in order to identify how the term and the definition that each continent gives to the term of energy poverty has evolved.

Main attention was paid to the evolution of the concept, and its reference to the application in case studies; observing what concrete reference is made when referring to energy poverty. Although the concept is very practical, attention was focused on how the concept is used in order to analyze its use.

BACKGROUND

At present, the term energy poverty has called notably the interest of researchers from the European Union (EU), since the 70's there are some incipient efforts on the concept "Energy poverty is a concept that originated in a European context, as a result of the first world oil crises during the 1970s. It arises in the social imaginary of the United Kingdom, first of all, known as fuel poverty. However, thanks to the evolution of its theorizing in the rest of the continent, the concept reaches Latin America as energy poverty. (Colef, 2021: 1) the concept continues in constant evolution; in case studies, Africa becomes a continent of interest "in terms of access to energy, the countries of Africa are the ones with the most complex situation" (Griffa, 2019: 2) which mainly impacts them due to the inaccessibility of energy resources, derived from the high cost of generation, distribution of electrical energy and above all the lack of resources on the part of society.

The concept of energy poverty began to have greater relevance approximately in the year 2002, due to the fact that in the African continent it was observed that poverty and the difficulty of access to energy were notorious when compared with different regions of the world, from these Studies began to glimpse that poverty and energy have an obvious relationship, which is influenced by the amount of economic income that the population has (Stephen, 2002).

Although energy poverty attracted the interest of another part of researchers located in India in later years, which led to the creation of different visions on how to measure energy poverty, the variables that were most relevant to determine the level of energy poverty at that time They were: the availability of energy, forms of distribution and the amount of energy consumed by the inhabitants. When carrying out an analysis with data obtained in

the period from 1983 to 2000, it was obtained that the level of energy poverty decreased significantly, which revealed that there was a rapid development on the part of the country. (Pachauri, Mueller, Kemmler, & Spreng, 2004)

Ambuj (2005), the term energy poverty was used on occasions where the lack of access to energy services in homes was notable, it was made known that the lack of this resource compromised people's health, which led to because it was necessary to implement new technologies such as biomass in order to supply energy needs and at the same time reduce greenhouse gas emissions from fossil fuels.

REDIMENSIONING THE CONCEPT OF ENERGY POVERTY

At the beginning of this section, it is necessary to point out that it is written and contextualized from the different publications that deal with the subject of energy poverty. (Adom et al., 2021; Bagnoli et al., 2022; Drescher et al., 2021; Fungisai Chipango, 2021; Sareen et al., 2020; Siksnelyte-Butkiene et al., 2021) to mention a few.

When referring to energy sources, what has to do with the development and/or subsistence of a person or family; that is, in short, for the development and social subsistence; The energy concept, in its broadest conception, refers to a diversity of natural elements or with some industrial process that offer the main characteristic of providing energy that acts as a propellant for the operation of some satisfaction required for the indicated purposes, namely: development and/or subsistence. That is to say, this satisfier, in turn, can have the characteristic of being a basic and elementary form, or else, a satisfier that, like energy, has a transformation process, that

1 Example: The sun is, in turn, both natural energy (and in turn a source thereof), as well as a natural energy satisfier; not so, solar panels, which are provided with natural solar energy, but under a process of industrialization of natural elements, which involves: capital, work, appropriation of nature; and that carry intrinsic: science, innovation, which generate a new technique, technology of use of solar energy.

is, an industrial transformation, for which,

This must refer, necessarily to be more specific:

1).- Natural energy (which, in turn, can sometimes be a source), on the one hand; on the other, energy obtained from a transformation process that enhances natural energy and/or puts it in its affordable and usable form for people, that is, industrial energy.

2).- Natural energetic satisfiers¹, on the one hand; on the other, satisfiers that require energy for their operation and that allow people, and societies as a whole, to increase and prolong the longevity of their subsistence; that is to say, industrial satisfiers that are found in the form of merchandise in the capitalist market. With the exception of those countries that consider themselves socialist or communist, but that, in a globalized economy, as never before in the history of humanity, it is complex to think that the market for components is not used.

Having made the above more complex, it is also important to refer to the basic concept of the approach:

Energy, according to the RAE (2022) is "the capacity of a system to perform work". In the same way, the Nuclear Forum (2022) considers that "Energy is the capacity that bodies possess to be able to carry out work or because of their constitution (internal energy), their position (potential energy) or a movement (Kinetic energy)". One could continue citing the definition of energy, and invariably, they will continue in the same logic, since it is from natural science.

From the above, then, it is necessary to determine, specify what the energy sources could be, for the purposes that this present writing discusses. It is observed that there are (N+1) energy sources, such as: solar, wind, hydraulic, geothermal, fossil, gas,

among others. Some are transformed into oil, gasoline, nuclear, electricity, to name a few.

Going reflecting on the complexity of the concept of Energy Poverty, leads to having certain doubts about what is being written, about energy poverty, is it really what they are referring to, in its broad concept.

Therefore, those who write this document consider that it is necessary to resize the concept.

PROPOSAL FOR THE CONCEPT OF ELECTRICAL ENERGY POVERTY

The term -Energy poverty- has been coined to start, relatively very recently, the analysis of the conditions of access, or its availability of absolute or relative consumption, of the amount of electrical energy that a person or family requires for their development. and/or subsistence. Here is a first dilemma, which will be touched on in the next section. The reviewed writings carry out an analysis and/or measurement of the relative or absolute consumption of the amount of electricity for their development, personal, per family or per home. However, they use the concept of Energy Poverty, which is considered, being rigorous, imprecise.

When referring to Energy Poverty, and paying attention to the discussion in the immediately preceding chapter, reference is being made to all those sources of energy, whether natural or through a process of transformation of natural resources or elements. This said offers an exaggeratedly broad spectrum of energies, (N+1) types of energy, coming from different sources and with different uses, which serve for the development and social subsistence. To generate urban mobility, through a gasoline-based combustion engine, to heat your home through electric heating, to heat through wood combustion, to heat water through solar

energy, to heat water through gas combustion, to heat water through wood combustion, to heat water by burning alcohol, etc.

All of the above referenced are energetic, regardless of their origin or source; they are energetic.

It is considered that the concept of Energy Poverty is being used to carry out studies on relative or absolute consumption of electricity, which is considered not entirely adequate. Because what is actually being studied is the amount of electricity consumed or the scarcity of it for its consumption, which implies in a relation of monetary income, to be able to have a quantity of satisfiers for the subsistence of a person or a home.

The concept of Energy Poverty is an umbrella concept, where everything fits; but that, nevertheless, the deepening in the studies of these topics, it is considered necessary to begin to be more specific, and not fall into idioms, depending on what you want to illustrate. For example:

A. Electricity Energy Poverty for households. - Most of the studies refer to this type of energy poverty, to the scarcity of electricity in homes in some region of the world to satisfy the operation of a number of merchandise that offer a utility for humanity, be it to refrigerate food, home heating, cooking, etc.

B. Electrical energy poverty for industry. - Reference must be made to the shortage of electricity that any industry requires for its operation and operation in order to produce the merchandise that will go on the market.

C. Gasoline energy poverty for urban mobility of people. - It is the one that the people of a community lack to be able to move a gasoline combustion transport to move from one place to another within a city or region.

That is, note:

- Energy poverty. - is the broad concept, it says everything and nothing specific at

the same time.

- Electric for homes, electric for industry, gasoline for urban mobility of people, etc. It is specifying what type of energy poverty the case study refers to, or the approach that is being carried out.

In other words, the concept of energy poverty is a broad concept where everything fits, but the proposal is to specify what type of energy poverty is being referred to. Because there is not only one type of energy poverty, but rather an indeterminate number (N+1) of **TYOLOGIES OF ENERGY POVERTY**.

It is to begin to be more specific in the studies of Poverty and Energy, which is considered to be a field of analysis to which humanity has begun to enter due to the need to glimpse what is coming.

It is proposed that the grammatical structure to establish the different typologies on the study of energy poverty, be as described below: Energy Poverty (+) type of energy (+) subject or object of study. Example: Energy Poverty (+) Electricity (+) in households.

CONCLUSIONS

It is considered that more precise names must be given to the different types of energy poverty that are being studied around the world.

It is imprecise to call studies on electrical energy consumption in homes energy poverty, that is only one type of energy poverty, namely: Electrical Energy Poverty for homes.

It must be understood that there are a number of N+1 types of energy poverty, and in the studies one must be as precise as what the research or study refers to. That is, N+1 typologies of energy poverty.

The grammatical structure proposal that allows to be more exact in what type of energy poverty is being studied, is one of a universal nature, since it allows it to be used for other

types of energy, within the topic of study, although the example of Energy Poverty (+) type of energy (+) subject or object of study. Example: Energy Poverty (+) Electricity (+) in homes; or: Energy Poverty (+) Electricity (+) in industry; or: Energy Poverty (+) Gas (+) in Germany.

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