

Abstract

In a more and more preoccupied society for ensuring sustainability at all its levels (environmental, economic, social and cultural) the question is if a sustainable development could be reached through the primary or updated model of Homo Oeconomicus.

If sustainable development means to use the resources without affecting the capacity of the next generations to satisfy their needs and Homo Oeconomicus purely rational primary model on one hand suggest that people follow only their own interest and on the other hand, Homo Oeconomicus updated model which suggests that people decisions are based on irrational and unconscious mechanisms, the issue rests on the real possibility of sustainability to be achieved.

The argument of the paper is to identify how sustainable development is affected by human economic behavior, to which extend we can speak about the illusion of sustainability and what could be alternative approaches to attain sustainability.

Keywords: Homo Oeconomicus, Rationality, Irrationality, Sustainability

JEL classification: A14, Q01, Q56

Introduction

During the era of consumerism and constant preoccupation of the economic agents for an unrestricted economic grow in conditions of limited resources, the necessity of a new approach emerges, one that should take in consideration the degree of limited natural resources, the community, society, culture and ensuring the satisfaction of the current needs without transferring the costs of present actions to future generations: sustainable development and resilience-thinking as a systems adaptation to cycles of changes and shocks absorption (Brian Walker and David Salt, 2012).

The paper is trying to analyze the concept of sustainability correlated with the human economic rational and irrational behavior concentrated under the primary and updated current model of Homo Oeconomicus in order to observe if sustainable development is possible and what are the consequences of people rational and irrational behavior on the main pillars of sustainability: economic, cultural, social and ecological.

Description of the problem

Homo Oeconomicus

The Homo Oeconomicus paradigm has been used in XIX century under the name of "Economic Man" by John Stuart Mill who considered that the main objective of Homo Oeconomicus is to satisfy his needs at the highest level with minimum efforts or costs. (John Stuart Mill, 1836). Even if the Homo Oeconomicus term was used only after 1836, it has its origin back to the XVIII century, supported by the ideas David Ricardo and Adam Smith, the latter sustaining in "The wealth of Nations" that "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest" (Adam Smith, 1776).

It has been sustained that people have a selfish, pure rational, own-interested behavior and they show an intense aversion to work. Even if he was one of the pioneers of conceptualizing Homo Oeconomicus, Adam Smith was not so radical regarding Homo Oeconomicus traits, suggesting in "The Theory of Moral Sentiments" that people have sympathy for the wealth of others and the decisions are just the results of the continue fight between "passions" and "impartial spectator".

In the last couple of centuries, multiple economists such as Leon Walras, Vilfredo Pareto or Lionel Robbins have materialized mathematic models based on the hypotheses of rationality of Homo Oeconomicus. Thus, Lionel Robbins' theory of rational decision become dominant in the mainstream economics through the acceptance that Homo Oeconomicus acts perfectly rational with the objective of his own interest of wealth.

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Homo Oeconomicus model simulates the adaptation of the means to the objectives, obtaining maximum utility or profit with minimum effort or cost, emphasizing his capacity of acting rational in achieving short terms objectives but doubting the sustainability of his behavior. The pragmatic characteristic of Homo Oeconomicus sustained by the continuous chase of utility and optimum on short-term creates an impossibility for a sustainable development on long-term.

New approaches are considering totally mistaken Homo Oeconomicus model based on perfect rationality, selfishness, complete information and stable preferences and there are efforts on identifying more valid explanations of human economic behavior. Researches such as Daniel Kahneman, Amos Tversky or Dan Ariely are using interdisciplinary approaches from psychology, sociology and economics to find the root causes and comprehensive explanations to people irrational behavior.

Homo Oeconomicus model has to be updated in order to make use of the new research findings in various relevant domains that could explain a series of economic mechanisms and human behaviors. It is obvious that people are not acting fully rational, being influenced by a multitude of internal and external factors, but in the same time there is a stringent need for a more accurate prediction of economic processes which is requiring making the irrational and unconscious behaviors strongly predictable (Dan Ariely, 2008).

Sustainability

Starting with the second half of the XX century, there was a global movement concerning the issues created by the irreversible reduction of economic resources potential, as a result of human development activity (Emil Dinga, 2011) resulting in the conceptualization of sustainable development, defined in 1987 by United Nation Brundtland Commission in "Our common future" Report as "using present resources without affecting future generations of satisfying their needs"

David Pearce defines sustainability as "being preoccupied of social development by not transferring the costs of the development to future generations or there are efforts made to compensate such costs" (David Pearce, 1989) emphasizing the concepts of "strong sustainability" and "weak sustainability". While strong sustainability stipulates that natural capital (natural resources, fossil fuels, ecosystems and biodiversity, etc.) and human capital (knowledge, labor, infrastructure and facilities, etc.) are complementary but not interchangeable, weak sustainability sustains that natural capital may be reduced as long as human capital is increased maintaining the same overall stock of capital, still achieving sustainable development.

There is a need of analyzing if strong sustainability is a realistic achievement and even if weak sustainability is possible by comparing the value of natural capital transferred into human capital as there are inconsistencies in measure the natural capital transformed into human capital and how this fluctuation contribute to sustainability. The issue rests of correlating the concept of sustainability with the human economic individual behavior which is far of being aggregated into a global economic behavior addressed in preserving resources for future generations through a sustainable development, in an era of consumerism, selfish behavior, heterogeneity of economic growth, unsolved primary issues such as hunger, poverty or diseases, the increased sophistication of human secondary needs, motivations and preferences.

Sustainability key events Timeline (next page, figure 1)

Homo Oeconomicus Primordialis

The concept of Homo Oeconomicus has been used to express the aggregate behavior of people concerning economic decisions.

In this paper, I propose two concepts: Homo Oeconomicus Primordialis and Homo Oeconomicus Novus. I define the concept of Homo Oeconomicus Primordialis as the initial version of Homo Oeconomicus proposed by mainstream economics, outdated to current economic reality and various domains research findings, being represented by the following:

1. Selfishness
2. Perfect Rationality
3. Stable Preferences
4. Complete Information
5. Utility Maximization

1. Selfishness

Homo Oeconomicus Primordialis are following their own interests, no matter of consequences to the other members of community and without considering negative externalities produced by their decisions. This trait is not explaining altruistic human behaviors such as charity, volunteering, sacrifice acts or unconditional helping. In the same time Homo Oeconomicus Primordialis selfishness trait is not explaining self-destruction acts such as substance abuse, suicide or procrastination.

2. Perfect Rationality

Homo Oeconomicus Primordialis are pure rational agents, using logical cost-benefit analyses to take the best decisions and the markets, companies, public institutions and other economic aggregates are acting rational, reaching specific states of equilibrium through rational efficiency. This characteristics is not taking in consideration that in the majority of the cases, emotions dictates to reason, decisions are based on feelings, and our unconscious mind transmits decisions to our conscious mind, the latter trying only to find rational arguments for the decisions, even when the behavior is purely irrational. In the same time, people make decisions based on mental shortcuts, dominant factors and hidden motivations.

3. Stable Preferences

Homo Oeconomicus Primordialis have stable preferences and their behavior depends only on macroeconomics changes. This trait is not quantifying how a change to people behavior is caused by an alteration to individual preferences and not necessary to a macroeconomic change. As an example, it is possible that the decrease of oil consumption to be caused by price increase but in the same time, the decrease of oil consumption could happen due to the alteration of individual consumers as a result of the internalization of the effects that oil consumption has on global warming (Stefan Schneider, 2010). In the same time, it needs to be taken in consideration “*the herd effect*” (Ulrich Fehl, 1967) by which people act in a specific manner just to integrate and resonate with a specific group.

4. Complete information

Homo Oeconomicus Primordialis benefits of complete information which they can fully analyze in order to take the best decision. This characteristic is not taking in consideration that people are cognitive limited, they are not able to make an extended number of mathematical calculations and they are not able to accumulate all the information they interact with. People are continuously bombarded with information, being exposed to an extended volume of informational noise, unable in making fully rational decisions.

5. Utility Maximization

Homo Oeconomicus Primordialis are looking for maximum benefits with minimum costs, searching for utility or profit maximization. This trait has tautological valences due to the fact that by not being able to accurately observe people internal motivations, every behavior could be seen as utility maximization. As an example, it could be said that smokers are maximizing their utility because the time from life duration lost due to smoking doesn't worth the cost of quit smoking. In the same direction, we could see weddings happening when the benefits of a person being married are higher than the benefits of being unmarried (Gary Becker, 1976).

As it has been highlighted above, Homo Oeconomicus Primordialis is the first conceptualization version of Homo Oeconomicus, which is not taking in consideration *the evolutions* of the concept and the new researching facts in fields such as psychology, sociology and economics. There are two important aspects to be considered:

1. Homo Oeconomicus Primordialis is the brute form of Homo Oeconomicus from a conceptualization point of view which needs to be adjusted with the evolved form of Homo Oeconomicus: Homo Oeconomicus Novus, which is the refreshed form of Homo Oeconomicus taking in consideration the current economic reality and validated characteristics of rational, irrational, arational, conscious, unconscious and aconscious human economic behavior.

2. Homo Oeconomicus Novus is not a concept to match mainstream economics only but an interdisciplinary approach to human economic behavior so there could be identified a series of

traits, characteristics, principles, values and motivations that could explain apparently unpredictable mixture of rational, irrational, conscious and unconscious human economic behavior.

Homo Oeconomicus Novus

I define the concept of Homo Oeconomicus Novus by the new, fresh and updated version of Homo Oeconomicus Primordialis, taking in consideration the following traits:

1. Irrational Behavior
2. Aconscious Thinking
3. Inclination toward Possession
4. Social Validation
5. Pursuit of Happiness

1. Arational Behavior

Homo Oeconomicus Novus is having an arational behavior as being described by the result of a non-rational cognitive process. Homo Oeconomicus Novus arrational behavior is caused and explained by a set of primary emotions (Rosalind Hursthouse, 1991) such as love, hate, joy, rage, sorrow, shame, pride, courage or fear which take over on human decision system and exclude a rational decisional process. The Homo Oeconomicus Novus behavior is based on an arational decisional mechanism by cognitive representations and actional transpositions, autonomous of rational filters with the purpose of solving an aconscious perceived problem. Rational thinking is only the interface between aconscious mind which takes the decisions, and our behavior, the role of reason being of creating logical arguments that could explain our action in a manner validated by social norms, beliefs or values and to confer the illusion of control over decisions.

2. Aconscious Thinking

Homo Oeconomicus Novus uses a non-rational thinking process based on automatic mental processes in our aconscious mind that are using a high volume of information gathered from past experiences, current perceptions and sensations, motivations, desires, mental anchors and connections between cognitive units, in order to take a decision that match the context in correlation with our internal cognitive variables. Now days we are exposed to 2.5 quintillion bytes of information daily (Leonard Mlodinow, 2012), quantity of information which is far of being processed by human brain conscious capacity. Human brain is processing 11 million bytes of information per second only from sensorial system at unconscious level and is able to conscious process information of only 17-50 bytes per second which is making human rational decisional mechanism unable to promptly cope with complex variables.

3. Inclination toward Possession

Homo Oeconomicus Novus have a natural tendency toward possession, including but not limited to wealth, health, knowledge, power, virtue and no matter of cultural, social or personality differences, people's decisions that govern their life are directed to achieve the possession of sources of gratification. While we evolve as social and cultural subjects, or needs and desires of satisfaction are changing, becoming more and more sophisticated and more and more related to what other possess. We are in an era of consumerism, globalization, information burst, online social media boom and secondary needs satisfaction so the inclination toward possession is stringently present in every single person under various forms.

4. Social Validation

Homo Oeconomicus Novus is a social animal (Bryan Morris, 2014) having a native predisposition to belong to a group as they learned that on one hand they can save resources in making a decision and they learned that they are safer if they follow the crowd. People are also inclined to adjust decisions depending on social norms and other people expectations, being concerned about how they are perceived by others. Homo Oeconomicus Novus is looking for social validation and most of their decisions are based on how they report to others. This reaction is very likely to have its roots far back in human evolution when people's safeness was not easy to be maintained and by coordinating with the group they could offer a cohesive response to the aggressive factor – a similar behavior is used by herd animals to protect of predators. We are assisting to a “*de-individuation process*” (Diener, Fraser and Beamer, 1980) in which when people are found in a group, they become less self-aware and less concern about how they are perceived as individuals,

being more anonymous but being resonant with the group identity. Practically, the individual identity is transferred to the group identity which acts as a whole and the repercussion are very difficult to be reallocated to each individual.

5. Pursuit of Happiness

Homo Oeconomicus is searching for happiness which embrace different forms from individual to individual, ideally referring to a state of flourishing and living well by achieving a series of goals such as wealth, knowledge, health, power, virtue, etc. New researches shows that money are the fuel for happiness up to a specific level (approximatively \$75 000 annually) above which the increase level of happiness is insignificant or even decreasing (Daniel Kahneman, Angus Deaton, 2010). This level is considered to be the optimum, people earning below and above having similar symptoms of unhappiness. Homo Oeconomicus Novus take decisions in concordance with their happiness standards and objectives, very often reported to the social and cultural norms and not to real individual achievements that could enhance the level of happiness.

The Illusion of Sustainability

Sustainable development in the strong form of sustainability which considers that natural and human capital are complementary but not interchangeable cannot be achieved under neither Homo Oeconomicus Primordialis nor Homo Oeconomicus Novus model.

One of the most important trait of Homo Oeconomicus Primordialis is selfishness, accordingly to the model, people being interested only for their self-interest and to ensure a competitive advantage compared with the other members of society who compete for the same limited resources. In this regard, the un-updated Homo Oeconomicus Primordialis is in contradiction with what sustainable development means, as Homo Oeconomicus Primordialis misses an important component that is necessary to ensure sustainability which is altruism. If people would be preponderantly altruistic there could be real ways of satisfying current needs without affecting future generations to satisfy their own needs. Homo Oeconomicus Primordialis is not concern with resources conservation or consumption tempering if this is contrary with their own needs and interests, as they are focused on utility and profit maximization.

It is obvious that sustainability cannot be achieved through ensuring the adaptation of the means to scopes but by the preoccupation for the quality of life of all the current and future members of society with considerations for social, cultural and ecological pillars of sustainability apart from economical pillar.

In the same direction, neither Homo Oeconomicus Novus is not able at this level of evolution to cope with the parameters of sustainability due to their arational behavior, need of social validation, unconscious thinking, inclination towards possession and continuous search for happiness which in most of the cases in counter-sustainable. In order that sustainability to be realistic, there is an important aspect that should be achieved: perfect rationality which is referring in the context of sustainability to people capability of taking the best decisions for the current context integrated into a global future frame. As it has been demonstrated in the majority of the cases, human decisional system is not rational and in our conscious control and above all is influenced by a series of internal and external factors that are unknown to us yet. Homo Oeconomicus Novus cannot be able of an integrated sustainable development due to several factors which makes out of the concept of sustainability unrealistic and illusory.

1. Human Cognitive and Behavioral Mechanisms

People are having an arational behavior which is based on aconscious and emotional decisions and cannot be in our control only in a small part. People are not making decisions to cope with the benefits of people they do not know personally or sympathies, being primarily preoccupied by the benefit of themselves and people they have affinities with, through an enormous level of consumerism. The decisional cognitive mechanism is based on unconscious thinking which takes its input from past experiences, memories, desires, motivations, sensorial system concerning primarily individual's conservation and less from an imposed set of actions related to the conservation of others.

Cognitive biases caused by bounded rationality (Simon Herbert, 1991), cognitive dissonance (Festinger, 1957), loss aversion (Kahneman, 1979), cognitive heuristics (Amos Tversky, 1974) and similar other factors are obstacles in transforming sustainability mirage into a reality. The need of

social validation prevents a sustainable behavior in the majority of cases, people taking decisions based on direction given by the majority and once the majority of individuals are not adopting a sustainable behavior, the group as a whole will not take sustainable actions. We can go even further and affirm that global sustainability could be achieved only through local sustainability so all the premises of sustainability needs to be met in each and every single individual so we can say we reach the starting point of sustainability from where needs to be maintained or enhanced.

2. Incomplete and Ignored Knowledge

We live in an era of bursting information, online interaction and sensational speed of accessing information but this is not enough for a sustainable development. It is true that people have, apart from the situations where the current common knowledge is missing on the subject, the possibility of accessing relevant information in order to make sustainable decisions but due to human incapacity of conscious processing a high volume of information and their cognitive mechanisms of making decisions based on few dominant or important factors and ignore the rest of factors, subjectively considered unimportant, it leads to decisions far from sustainable development. There are unsolved problems due to lack or incomplete knowledge or knowledge asymmetry and until primary problems of humanity such as hunger, poverty, diseases or conflicts are not addressed with valid solutions, sustainable development actions are in vain. In the same time the lack of knowledge is limiting even more the available natural and human capital. With other words, the lack of knowledge is preventing the sustainable compensation of the reduction of natural capital with the increase of the human capital.

3. Increasing Level of Entropy

Entropy measures the level of unavailable energy in a system (Nicholas Georgescu-Roegen, 1971) so a system with a high level of entropy imply a high level of unusable captive energy, while a system with a low level of entropy imply a high level of usable and available energy. The entropy entail the principle of irreversibility, the entropic level of the universe continuously growing from the temporal state of low entropy to the temporal state with higher entropy (Emil Dinga, 2009), showing the direction of time. Theoretically a sustainable development would involve that the entropy of the system formed from ecological, economic, social and cultural environments to be lower than the cumulated entropy of each subsystem, which is very unlikely to happen due mainly to the inclination of the universe to create disorder through natural processes of diffusion and disintegration contrary to the orientation of people to create order by transforming natural and human capital into final products with the cost of raising the overall level of entropy and diminishing the level of available energy for future generations. While through our current processes we are continuously increasing the level of overall entropy, we can't achieve a sustainable degree of our development.

Conclusions

In the mainstream economics, Homo Oeconomicus paradigm has a central place trying to explain a series of economic mechanisms. We can discuss about a conceptual evolution from the initial incomplete and erroneous paradigm introduced by John Stuart Mill which I named Homo Oeconomicus Primordialis and is based on selfishness, pure rationality, complete information, stable preferences and utility maximization to an updated version, able to comprehensively explain economic individual behaviors, which I think it should be called Homo Oeconomicus Novus, based on arrational behavior, aconscious thinking and decisional mechanisms, inclination towards possession, social validation and pursuit of happiness.

Neither Homo Oeconomicus Primordialis nor Homo Oeconomicus Novus in the presented form, could be an integrated part of a sustainable development due to specific characteristics of each model and factors such as human cognitive and behavioral mechanisms, incomplete and ignored knowledge or increasing level of entropy, making form sustainability just an illusion without a real possibility of being reached.

In conclusion, Homo Oeconomicus Primordialis model has been started to be updated and refreshed with a new paradigm: Homo Oeconomicus Novus as a comprehensive and valid approach to explain human economic behaviors. In the same time, sustainable development, which is a desirable scope for the humankind, is unlikely to be attained due to several gaps of the concept and various incompatible, non-adjustable factors.

Research Perspectives

There is a stringent need of continuing to fundament Homo Oeconomicus Novus paradigm to a more profound level which could reveal a more accurate model of prediction for the human economic individual behavior.

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