

## Moroccan Human Ecological Behavior: Grounded Theory Approach

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### ABSTRACT

*Today, environmental sustainability is everyone's concern as it contributes in many aspects to a country's development. Morocco is also aware of the increasing threats to its natural resources. Accordingly, many projects and researches have been discussed pointing mainly to water security, pollution, desertification, and land degradation, but few studies bothered to dig into the human demeanor to disclose its ecological behavior. Human behavior is accountable for environment deterioration in the first place, but we keep fighting the symptoms instead of limiting the root causes. In the conceptual framework highlighted in the present article, 22 interviews have been conducted using a grounded theory approach. Initially this study will serve as a pilot study and a cornerstone to approve a bigger project now in progress. Beyond the existing general ecological measures (GEM), this study has chosen the grounded theory approach to bring out firsthand insights, and probe to which extent an ecological dimension exists in Morocco as a developing country. The discourse of the ecological behavior within the Moroccan context is seen in more realist, social, and community philosophy. Insights from interviews have revealed the existence of the following external factors: institutional, economic, social, and cultural; and the following internal factors: knowledge, locus of control, and values. Two new variables have emerged about half way over the coding process; Islamic environmental ethics and place attachment.*

**Keywords:** Moroccan ecological behavior; grounded theory; internal factors; external factors

### INTRODUCTION

The alarming pressure on nature and the numerous environmental problems have raised many questions about the pro-environmental strategies that would prevent further natural deterioration. Pollution and shrinking natural resources are now genuine problems that compromise the quality of life. Human psychology and other different disciplines, have attempted to build a society less oppressive on their natural resources (Krause, 1993), but still no definite response has been given to clarify the whole picture of environmentalism (Stern & Gardner, 1981). The human pressure is persistently impacting the earth's dwindling resources, dropping the resources curve remarkably year over year. The ecological Footprint has more than doubled between 1961 and 2008 ("WWF update on alarming state of the world", 2004). "The Ecological Footprint is a measure of the load imposed by a given population on nature, it represents the land area necessary to sustain current levels of resource consumption and waste discharge by that population" (Wackernagel & Rees, 1998). Morocco, along with Kenya, Tunisia, Senegal, Ethiopia, Nigeria, South Africa, Uganda, and Zimbabwe, are nine African countries that have been living beyond their natural capacities (World Wide Fund. Green Infrastructure for Africa's Ecological Security, 2012). Indeed the sustainability of Moroccan natural resources is becoming hard to ensure, this is an undeniable obstruction for social and economic development. Morocco being aware of the significant decline of the environment conditions has signed numerous international conventions to promote sustainable development, mainly on desertification, maritime pollution, protection of

the ozone layer, and protection of endangered species (Omari, 2014). After the United Nations conference on Environment development held in Rio de Janeiro (Brazil) in 1992 and in Johannesburg (South Africa) in 2002, Morocco has set up the guidelines to progress a sustainable development by promoting multiple changes in political, legal, institutional, and socio-economic fields. In 2009, the Moroccan Solar Plan was launched within the energy strategy and sustainable development; this project aimed at decreasing energy dependence and greenhouse gas (GHG) emissions (Ministry of the environment, 2012).

The measures adopted have proven to be effective to improve Moroccan environmental conditions. However more proficient results would have come up if Morocco has given as much effort on shaping ecological Moroccan behavior and has involved the human factor in progressing sustainable development. Human behavior is the root cause for the environmental deterioration. The fears related to the environmental degradation like global warming, unsustainable cutting down of forests, and water pollution are nothing but the result of human behavior (Stern, 2000). Morocco has a substantial potential in the environment ground, and ambitious project for environment safeguard but wouldn't assure a successful path to sustainable development without taking into consideration the human factor; has declared the president of the association of teachers of life sciences and earth (Ecologie.ma, 2013).

The achievability of ecological behavior seems to have been given little interest by the scientific community; very few references have been examining the Moroccan environmental conduct. The approach of this study is exploratory; the article's objective is not to evaluate the Moroccan society's ecology conduct, but more modestly to understand why ecological behavior is not likely within the Moroccan behavioral context and what are the plausible barriers that hinder Moroccans from acting ecologically?

## CONTEXT AND REVIEW OF LITERATURE

The primary concern of this research paper is the human ecological behavior itself; which is, the "activities that take into consideration the protection and conservation of the environment" (Axelrod & Lehman, 1993). Ecological behavior is a controversial topic; many studies have been conducted to explore the probable variables that would affect a responsible environmental behavior. For the sake of simplicity, two elemental categories have been distinguished, intrinsic factors e.g. attitude, locus of control, traits of personality, and environmental knowledge; and extrinsic factors that are out of people's control and distress the environmental behavioral process e.g.; local infrastructure, social, economic and cultural factor.

### Internal Influences on Ecological Behavior

*Personality traits*, certain personality traits have been proven to be linked to the pro-environmental behavior. Borden and Francis (1978) have suggested that selfish people are less likely to behave ecologically. To be concerned about environment issues people should care about the community at large (Geller, 1995), someone who is aware of others' suffering and feels the necessity for doing something to ease their pain, is more likely to behave ecologically. This is supported by the *altruism theory* in the model of Stern, Dietz, and Kalof (1993) (as cited in Kollmuss & Agyeman, 2002). In the same vein, Hirsh and Dolderman (2007) have suggested that openness and agreeableness measured on the new ecological paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000) are associated with an environmental behavior. They have described an agreeable person as altruistic and warm with tendency to behave in an environmentally friendly fashion because of his/her empathetic concern. They also advocated that open individuals would have experienced more in natural surroundings, so they exhibit a more friendly behavior toward the environment.

*Knowledge*, some writers on sustainable development highlight the big role of information about the ecological threats (Hansen & Schrader, 1997), and the awareness of the natural environmental degradation (Kilbourne, McDonagh, & Prothero, 1997). *Environmental knowledge* is considered as a predictor variable to pro-environmental behavior (Kempton, Boster, & Hartley, 1995), proper behavior can't take place without proper knowledge (Frick, Kaiser, & Wilson, 2004). The increased knowledge about the associated benefits is related to the employment of a pro-environmental behavior. People who have demonstrated more knowledge about the environmental issues and concerns seem to behave more ecologically (Kollmuss & Agyeman, 2002). Schultz (2002) has stated that the non-recyclers have limited information about the benefits of recycling. Knowledge is an important element indeed, but has been proven not to be sufficient to predict ecological behavior (Schahn, 2002). Some mediators when present, seem better at converting ecological knowledge to environmental action e.g. attitude (Kaiser, Wölfling, & Fuhrer, 1999), intention (Schwepker & Cornwell, 1991), and values (Corraliza & Berenguer, 2000).

*Locus of control* has been defined as someone's perception of being able to make changes via behavior (Newhouse, 1990). Thus people having strong internal locus of control are more willing to behave ecologically, they believe that their actions have an influence and can indeed bring change contrary to those with external locus of control who believe that their individual actions are insignificant. The notion of "locus of control" has been compared to 'responsibility' in Blanke's model (1999).

*Values, norms, attitude* and other intrinsic variables influence people's ecological behavior. Bilsky & Schwartz (1994) define values as concepts guiding the selection of behaviors or events. In the environmental theory of *values-beliefs-norms* (VBN), Stern (2000) has explained that values impact the general outlook about the environment, which is the *general beliefs*; then, it effects the beliefs about the damages of environment alterations on things valued by people, that in turn impacts their perception of their capacity to counter these threats; and finally, this impacts their norms of taking action.

Attitude is proven to be a key element in numerous behavioral models, e.g. Theory of reasoned action, theory of planned behavior (Ajzen & Fishbein, 1980), model of responsible environmental behavior (Hines, Hungerford, & Tomera, 1987). Attitude was found to be associated with pro-environmental behavior, people with strong ecological/environmental attitude are more willing to engage in ecological behavior (Kollmuss & Agyeman, 2002). Although, the relationship between ecological attitude and pro-environmental behavior ranges from weak (Midden & Ritsema, 1983), to really strong (McGuinness, Jones, & Cole, 1977). To sort this out, it's been recommended to measure both concepts, *attitude and behavior*, at the same level of specificity (Kaiser et al., 1999).

### **External Influences on Ecological Behavior**

Human ecological behavior is very problematic, the individual's desire to behave ecologically doesn't effectively mean that he will do so, beyond the willingness and intention there are some other factors and conditions that might help or hinder the conversion from desire to real ecological action.

### ***Institutional Factor***

Regarding certain technical installations people would use, there are much potential equipment efficiency, waste decrease, reducing the level of the ambient noise and energy saving (Von Weizsacker, Lovins, & Lovins, 1997). However, the adoption of such eco-technology would be fairly expensive for less developed country. For example, ecological behavior would be more revealed in countries that are involved in environmental measures

(e.g. recycling facilities; facilitating recycling with accessible bins, promoting composting wastes) than those that are not. Numerous environmental behaviors couldn't be undertaken without the required infrastructure. Kaiser (1998) calls this variable as *influences beyond people's control* and explains them in two points, the first is people's tendency of acting ecologically and the second the difficulty/easiness to carry out certain behavior (*behavior difficulty*). Fietkau, Kessel, & others (1981) refer in their model to *possibilities to act ecologically* as the set of the external factors e.g. infrastructure and economic elements that affect people's ecological behavior.

### **Social and Cultural Factors**

Social and Cultural Factors in which people evolve, influence their behavior. Family values are transferred to oneself and contribute to shape the opinions, attitudes, and behaviors. Often people's demeanor is affected by their surroundings, for example the neighborhood's behavior, that is observed quite often, is more likely to impact an individual's behavior, specifically when the behavior described is considered as norms advocating how someone should act (Dietz, Fitzgerald, & Shwom, 2005), like showing an exemplary behavior toward the environment.

Ecological behavior is explained by different dimensions and illustrated by a multitude of factors; the facts are often vague and broad and leave the gate wide open for more investigations.

### **METHODOLOGY**

The inconsistency of the ecological measures available is not overlooked. The pro-environmental measures are fairly large, some authors put forward the ecological behavior as a multitude of dimensions (Newhouse, 1990), in some other studies it is rather broken down into a single measure (Maloney & Ward, 1973). As far as this research is concerned, Grounded Theory approach (GT) is more appropriate, as it is intended to understand a compound multifaceted phenomenon. It proposes too many advantages in investigating as complex a topic as the ecological behavior that is related to too many factors e.g. psychological, social, and institutional. This methodical research approach, is rigorous and at the same time allows flexibility and freedom (Jones & Alony, 2011), and it permits to the researcher to broaden its investigation, often beyond the classical disciplinary boundaries (McCallin, 2003). Initially this study will serve as a pilot study, a cornerstone step to approve a bigger project now in progress. Interview methodology is more suitable due to the nature of the subject. Ecology behavior has been a physiological and sociological matter for centuries; hence people are realistically more qualified to describe their own environmental behavior. For ethical consideration a readable sheet of information is provided to the participants, with the project outlined, and a consent section to be signed to approve their voluntary participation, along with a right of withdrawal at any time without giving a reason. In the consent form sheet the participant is invited to tick the box of a yes/no answer to agree or not on the interviews being audio-recorded and the use of anonymized quotes in publication. The interviews were conducted in both Arabic and French depending on the participant choice.

### **Sample and Procedure**

Eight participants (students, lecturers and school administrators) have been interviewed using purposive sampling. The power of using purposive sampling lies in identifying information-rich cases, which would disclose important amounts of information useful for the purpose of the research (Patton, 1990). Half hours in depth interviews were conducted, aiming to learn the Moroccan general behavior towards their environment. Open questions have been asked

to know to which extent Moroccan people care about their environment and what would promote or prevent them from behaving ecologically. The interviewee is invited to express him/herself freely. Brief set of prompts have been created to intervene and keep the interviewee within the boundaries of the topic, and to react to arguments that are worthy to be followed up.

During and after each interview, notes has been written down summarizing the interviews main ideas, the impression about the participants, comments and reflections about the interviews progress. After the eight interviews, analytical memos have been written down summarizing ideas, comparing similarities and differences between data and emerging patterns. It helps to make a comparison between the data collected, and raise more relevant questions to be asked in continuing interviews. Essentially, this elementary step permits to develop core focused codes to be expanded and refined afterwards via the theoretical sampling. It determines who to select next and the type of questions that should be asked in the additional interviews.

Selecting additional cases to collect more information has followed after the first set of interviews. The theoretical sampling process has been described by Taylor and Bogdan (1998) as an important procedure to the three levels of coding advocated by Corbin and Strauss (1994) in the grounded theory approach. For this matter, fourteen further semi-structured interviews were conducted. The number of the participant has been identified based on the theoretical saturation, which is usually interpreted by qualitative researchers as meaning that the interviewers are not hearing anything new from the participants (Sbaraini, Carter, Evans, & Blinkhorn, 2011). An interview guide has been designed in fairly open framework, containing a set of questions that need to be investigated based on the previous code development.

## **ANALYSIS AND FINDINGS**

After being carefully recorded, the interviews were thoroughly transcribed and read.

The analysis consisted on breaking the transcriptions down into fragments and labelling those fragments using open codes. Initially, the codes are generated based on information collected, inductively from early data. In focused coding, we continued on picking central codes within the whole dataset. A more hierarchical approach has been undertaken, and successive data arrangement has been made to categorization. Then, relevant codes have been selected. Subsequent coding stages have followed to refine the categories, some were subdivided and others integrated to move towards the explanation of the research focus.

### **Moroccan Ecological Behavior Influences**

According to the literature review, many environmental models have separated the pro-environmental behavior factors into internal and external (Kollmuss & Agyeman, 2002). Insights from interviews have revealed the existence of the following external factors: institutional, economic, social, and cultural; and the following internal factors: knowledge, locus of control, and values. Two new variables have emerged about half way over the coding process; Islamic environmental ethics and place attachment. The literature shows support for these emergent variables. Actually, Kaiser & Fuhrer (2003) have explained that the degree of the pro-environmental behavior depends on the level of a person's attachment to a place, that is to say when someone is eager to live in that certain place; he/she is more disposed to take care of it. As far as Islamic environmental ethics are concerned, Islamic fundamentals discuss the behavior toward the environment and how Muslim people would maintain the safety of the Earth's resources. The panel on Islamic perspectives proclaims the

reasonable utilization of the natural resources, and asserts the preservation of a healthy environment (Abu-Hola, 2009).

Social desirability has also been noticed through the analysis of the interviews, in fact social desirability has been considered for a long time by many authors as a response bias before starting to consider it as a substantive variable in its own right (Ones, Viswesvaran, & Reiss, 1996). Socially desirable responding (SDR) is defined as the tendency of subjects to qualify themselves in self-description with socially desirable scale values, and to reject those with socially undesirable scale values (Edwards, 1957). Social desirability has in fact been identified as a variable rather than a bias.

### ***External Factors Influencing the Moroccan Ecological Behavior***

Within the external factors many interviewees have showed an inconsistency in explaining their pro-environmental demeanor. Even they assert to be ecologically oriented; no ecological action seems to have been taken. Their disposition to ecological actions seems definite, nonetheless they have ascertained a wide range of factors beyond their control that obstruct pro-environmental actions to take place (Kaiser et al., 1999). They have pointed out the difficulty of carrying out many ecological activities due to lack of facilities and conveniences. Blake (1999) has defined these barriers as situational, social, and economic constraints that stop people from behaving ecologically regardless of their intentions and their drive.

*“I do care about the environment but we lack a lot of arrangements that would have facilitated the preservation of the environment.” (5)*

*“I was in France I always preferred riding a bicycle instead of a car; in Morocco cycling inside the city is impossible if not crazy”.(1)*

*“Common transport would have contributed tremendously to the wellbeing of the environment”. (11)*

*Economic factor* has proven to affect Moroccans' decision to undertake some ecological actions. The interviewees have identified some ecological measures and products as very expensive and beyond their financial capacity. They have also suggested the role of the economic factor as a way of putting pressure on people to force them to behave in a more friendly way towards the environment. For example, interview 4 has suggested significant fines for people caught red-handed polluting the environment, or impose some kind of taxes/eco-taxes.

*“Being ecological includes buying ecological product, though Moroccans would not be willing to pay more for a product that respect the environment. Even when they are sure that these products are truly green”. (3)*

*“Take the example of the wipes known as biodegradable; they are just more expensive than the normal ones.” (1)*

*Social and cultural factors*, Kollmuss and Agyeman (2002), have point out the role of social and cultural factors in explaining some pro-environmental actions and attitudes, they have hypothesized that social and culture factors in densely populated small countries are likely to be more resource conscientious than large societies. Within Moroccan community, social and cultural factors show an influence on the Moroccan ecological behavior too. Pro-environmental behaviors seem to be influenced by the social tendency, especially within less educated individuals. As mentioned in the interviews, the Moroccan society does not praise any good behavior toward the environment. It represents the last concern of the greater majority of Moroccans.

*“We grow up in an environment where everyone is throwing trash everywhere; no one cares about the environment...”. (2)*

### **Internal Factors Influencing the Moroccan Ecological Behavior**

Knowledge, values and other intrinsic influences have been proven to determine the Moroccan pro-environmental behavior. In this study, different types of ecological knowledge have been identified within Moroccans. As mentioned in the literature, it's not the level of knowledge available to the community that defines behavior, but rather the different types of knowledge that ought to perform together (in a convergent way) to determine ecological behavior (Kaiser & Fuhrer, 2003). The first form is called declarative environmental knowledge which refers to answers about different environmental systems (Schahn, 1996) that means to reduce ambiguity and encourage the behavior to take hold, for example the ozone layer destruction by chlorofluorocarbons (CFC) used as a refrigerant. The second is procedural environmental knowledge which encompasses the way to complete a specific conservational action, such as the action that should be taken to shrink household waste (Kaiser & Fuhrer, 2003). Effectiveness knowledge, which denotes people's knowledge about certain ecological behavior to efficiently get some outcome, for example curtailing driving behavior has less impact on the environment than a fuel efficient car (Stern & Gardner, 1981); and finally social knowledge which is related to common and shared social beliefs and contains motives and intentions (Kaiser et al., 1999), it also depends on what people might think about others or expect from them in a given situation (Ernst, 1994). From the interviews, Moroccans couldn't have answers about the causes that deteriorate the environment. They ignore the conservation actions that should be taken to positively affect the nature and don't know how to act efficiently to limit the environmental degradation. They have also showed very narrow knowledge about the environmental problems. In the other hand, there has been an error of Moroccan perception about the natural resources; they have shown this old pattern of thinking about the unlimited natural resources instead of thinking about limited use within an ecological limit.

*“We are kind of proud of our countries' biodiversity, we possess so many natural resources that we are the first exporter of many products ...offering best quality”. (20)*

*Locus of control*, Moroccans perceive their contribution as not enough to bring change. As stated previously in the literature review, their external locus of control believes that what's happening is due to other external factors or a force from outside (Mulyadi, 2011).

*“... I am not going to change anything by keeping garbage in my purse, I would just be making my purse messy and heavier (laugh)”. (9)*

*“You are just wasting your time; instead of interviewing me you should have asked more powerful people whose action would effectively impact the situation of the environment.”(19)*

*Values*, the interviews came up with the values that would be responsible for shaping ones behavior. For example, a family who would inculcate the respect of environment from early childhood would subsequently induce an ecological behavior in adulthood.

*“Good manners include respecting the environment and not throw the trash everywhere, we have been thought my brothers and I that we should treat elsewhere like your own space.”(18)*

### **Emergent Variables**

Some interviews have attracted our attention on the central role that religion might play in shaping one's behavior. Research on *religiousness* has been tied up to a positive prosocial

behavior. Morgan (1983) has found that the likelihood of moral and proper behavior varies according to the frequency of prayers. The prayerful shows more humanitarian behavior, e.g. lending money to a friend in need, or consoling a crying child. They are less predisposed to “intensively dislike anyone”, getting “angry or irritated”. Religious people (prayerful) are more likely to behave righteously despite the fact they are not waiting for any return from others (Morgan, 1983). As far as ecological behavior is concern, Islamic fundamentals have emerged from interviews to highlight the Islamic commandment about the good use of the environment resources.

Quran [7:85]: *"And do not mischief on the earth after it has been set in order that will be better for you, if you are believers". (20)*

Quran [2:205]: *"And when he turns away (from you O Muhammad), his effort in the land is to make mischief therein and to destroy the crops and the cattle, and Allah likes no mischief. (20)*

The second variable is *place attachment*, previous findings have stated that the stronger the place attachment is, the stronger the environmental behavior (Ramkissoon, Smith, & Weiler, 2013). Other scholars have discussed the link between place attachment and pro-environmental intentions and behavior (Scannell & Gifford, 2010). Interview 7 expressed his detachment toward morocco and has stated more than once his willingness to run away if he had the opportunity to do so. He showed an indifferent behavior to any ecological measure that would make the country or the environment better.

*"Morocco is dirty and messy and we feel already we are living in a huge open air trashcan; nothing is working in this country and I tried many times to flee but unfortunately it did not work out. The country is so disorganized and everyone's' big dream is to cross the ocean to live gracefully in a developed country". (22)*

## CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

Researchers in the ecological field have been developed considerably in recent years. Morocco has very often linked the disruption of the earths' equilibrium to the mass industrialization and to many other factors except its ecological behavior. The current study has modestly highlighted relevant factors that would explain the Moroccan ecological behavior. A grounded theory approach has uncovered many intrinsic and extrinsic factors: the intrinsic factors are comprised of knowledge, locus of control, values, religious, and place attachment and the extrinsic factors are a combination of institutional, social, economic, and cultural. Some participants in this study have offered some recommendations about how to impact the environment in a meaningful way. They have stated that, the intrinsic factors can be shaped with the raising of the awareness of citizens by the government through advertising and education. While, some of the extrinsic factors can be molded using education (like social and cultural factors), but other factors such as the institutional and economic factors require massive budgets to create the infrastructure necessary to facilitate a better environmental behavior.

The concern about the leading respondents in the research were of a particular interest, because the possible social desirability bias turned out to be, as mentioned previously in the literature, an explicative variable that elucidates the ecological behavior process in many pro-environmental behavior studies. Personality traits have been proven to impact the ecological behavior. However, due to lack of time and the complexity of a proper psychological assessment, personality traits were not highlighted though the interviews undertaken, which leaves the gate open for further investigations. Based on this initial research, a full-scale interview is in progress to dig deep into the listed variables considered as potential predictors



for the Moroccan ecological behavior. More interest would be dedicated to the inductively emerged variables (place attachment and religion). Further researchers will follow to better shape the Moroccan human ecological behavior qualitatively and quantitatively.

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