GREEN HOUSING DEVELOPMENT

A PERSPECTIVE FROM ANGOLA

DISSERTATION

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4. ABSTRACT

Green housing developments take an important role in our societies, not only because we face an era of environmental awareness, but because people need to think long term and face the impending scarcity of natural elements that have been in use.

This paper takes a look upon the needs of a particular country, Angola, and the basic needs people in the said country face on a daily basis, having in mind their way of living, their actual needs, how they view the world of green development and how cultural marketing can have an influence on how people from an underdeveloped country may think and act upon the worlds change into sustainability seeing as most of them are not even aware of those changes and needs.

The findings of this study will show how a green housing development can help current and future generations in need and try to find the most sustainable approach to bring the basic needs to these people, such as water and electricity for a population with 0 to minimum wage in the country.

5. ABSTRACT PT

Os empreendimentos habitacionais verdes desempenham um papel importante em nossas sociedades, não apenas porque enfrentamos uma era de consciência ambiental, mas porque as pessoas precisam pensar a longo prazo e enfrentar a escassez iminente de elementos naturais que estão em uso.

Este artigo analisa as necessidades de um determinado país, Angola, e as necessidades básicas que as pessoas nesse país enfrentam diariamente, tendo em conta o seu modo de vida, as suas necessidades reais, a forma como vêm o mundo do desenvolvimento verde e como o marketing cultural pode ter uma influência sobre como as pessoas de um país subdesenvolvido podem pensar e agir sobre a mudança do mundo para a sustentabilidade, visto que a maioria deles nem está ciente dessas mudanças e necessidades.

Os resultados deste estudo irão mostrar como um desenvolvimento de habitação verde pode ajudar as gerações atuais e futuras com as suas necessitadas e tentar encontrar a abordagem mais sustentável para levar as necessidades básicas a essas pessoas, como água e eletricidade para uma população de 0 a um salário mínimo no país.

6. INTRODUCTION

In times when the world has been suffering from global warming and as a result an increasing in the scarcity of natural resources, measures need to be taken. One of the appropriate solutions is to become greener and more sustainable, reducing the usage of natural resources and take upon substitutes on our daily lives, for instance in homes and housing developments, which represent one of the higher areas for both pollution as well as consumption of natural resources (Chetty, Tran, & Grinter, 2008).

A change in the natural ways of life is not an easy task, it requires previous studies and a will to change, a reformulation on the habits and beliefs of people. A great part of the countries globally does not have means to develop or enforce measures that help with the sustainability nor the green life due to the level of poverty (Ferreira, et al., 2015). With that being said, there is an even higher need to find solutions to bring to those countries' accessible responses for the grave and imminent deficit of natural resources. In undeveloped countries housing and the basic needs are already lacking for an enormous amount of the population, apart from not having reliable food or water supplies, many of them do not have a proper house, and for the ones who manage to find a sack to live in, the conditions are the worst imaginable, and with the Covidd-19 pandemic, the numbers have only increased. Poverty is set to increase to 150 million by 2021. (The World Bank, 2021)

Throughout the years there have been several institutions such as Sprung Structures that carried out emergency housing facilities for the population in countries that have suffered from a natural disaster and were completely devastated leaving thousands of people without a roof over their head. Those projects were meant to create a fast and temporary solution for example the Typhoon Haiyan in the Philippines, where Sprung Structures built disaster

recovery buildings for the population affected (Sprung Structures, 2020); however, in many more countries that reality is not temporary, is definitive, and there has not been many solutions carried out to solve or help those that need the most.

It is true that a project in this dimension, apart from expensive, the usage of natural resources would be above from the yearly levels that can be used, and it would not be safe for anyone. For instance, for the year of 2020, 'the Overshoot Day'[1] was reached on August 22nd (Bellamy, 2020). Despite those facts, a solution might be green housing developments, that preserve precious natural resources and improve quality of life. Which would not harm the environment any further than it has already been. However, a project with this extent and purpose needs to be thought trough, and research and studies must be made, one of which is related to the marketing strategies and culture related to it. Creating a relationship between marketing and architecture because it is one of the key purposes of this thesis. It is not an easy task to be made, let alone a relationship that involves culture, as there are differences among the areas which have not yet been addressed properly in order to create an easy and flowed correlation.

The world possesses 195 different countries, and although many of them share the same general culture, there is at least one culture per country. Angola is not different from that; the country has 18 provinces and 6 official dialects that represent the different cultures of the country (Daniel, 2019). A country with this kind of diversity in cultural terms is a country with a lot to give to its community, a country that has enough space to grow and to introduce a new reality to its population. On the other hand, it is a challenge to bring the new world to them, as it involves a change in the mentality of the country.

[1] The moment each year when humans have used up more natural resources that the Earth can renew in 12 months.

To talk about Angolan ways of living and leave out their culture is a mistake, apart from all the wonders the country may offer, good quality of life is not one of them. The main cities of the country are the ones who have most quality of life and better structure when it refers to housing. In the heart of the country, where the water and electricity are not reachable, the population has the simplest life imaginable. Their houses are small and made from clay, mud and sticks, most known as pau-a-pique houses. Their food and day to day supplies are all around them, they plant and harvest their food and water, as well as hunt and fish for the rest (Daniel, 2019).

This way of life is predominant for the villages of the country that do not make part of the new world of technologies; however, they are not the only ones who do not relish from the positiveness of having electricity and running water. A great part of the housing accommodations in Angola lack from the most basic necessity; in 2018, the poverty headcount ratio was of 32.2%; without any conditions whatsoever for the population (The World Bank, 2018). In the middle of the capital city, Luanda, you can find a big discrepancy in social status; there can be found from the richest to the poorest that has to sleep in the streets. That reality is not only a serious humanitarian problem but also a cultural crime, as the most basic houses in the heart of the country may offer more comfort and sustainability than the agglomerated shacks found in many of the populated areas.

In the next chapter it is going to be disclosed more of the history of Angola, sustainability in green housing developments and about the relationship of marketing and architecture.

The research questions for this study are as follows:

-How is the Angolan consumer behaviour towards green consumption?

-How does culture influence Angolans in their green consumption?

7. LITERATURE REVIEW

This dissertation explores more sustainable responses to housing developments incorporating the green idea into a society that might not grasp the term just yet, while respecting and still bringing the culture into said developments. Before trying to create a connection between cultural marketing and green designs there are still a lot of questions to be asked such as 'How does culture enter in green housing?', 'What does cultural marketing have to do with green and sustainable developments?', 'What is the influence of culture on the decision making to become green?', 'Do the cultural values make the decision of green consumption individualistic or collectivistic?'. One of the first points is that "contemporary architecture should seek a greater understanding of local culture if it is to be sustainable" (Guy & Farmer, 2000); the fact that the culture, the background can have an enormous influence on how the world is perceive and how to take upon the responsibility to become more environmentally aware, for instance, a population that has been cut out from the modern world is likely to not know about all the environmental crisis the world has been facing, much less the scarcity of elements that is found imperative for survival.

7.1. Angolan Culture and History

Angola is an African country that is situated at the Southwest part of the continent, on the South of the Atlantic Occidental coast, the country is located in between Namibia and Congo, with an area of 1 246 700 km^2, with a total population of 32,866,272 and has a population density pf 26 per km^2 (Worldometer, 2020).

Angola is a very rich country as its fauna and flora are well diversified, being the only country with species like Giant Black Sable (endangered species) and Welwitschia Mirabilis. On the coast, the country is also very rich and

diversified when it comes to their marine biology. As for natural resources, approximately 45 of the most important minerals in the world's commerce can be found on the underground of Angola, some of them being: petroleum, diamonds, iron miner, phosphate, copper, feldspar, gold, bauxite and uranium (Sawe, 2018).

The country, colonized by the Portuguese, has Portuguese as the official language. During the colonization period and for many years afterwards the country was at war, conquering the independence on November 11th of 1975, after which the country entered a civil war that ended in August of 2002 (Pinto, 2015). Those many years of war left their sequels in the underdeveloped country which had to start rebuilding and repopulating the cities destroyed.

Angola has had the same cultural background for centuries, with the most pertinent ones being Ovimbundos, Ambundos, Congos, Chócues and Ovambos. After the colonization, Angola took from Portugal not only the Portuguese language but also the Christianism and incorporated much of the Portuguese gastronomy into his own that was already very extensive. (Oyebade, Culture and Customs of Angola, 2007)

When it comes to arts, there is a history behind them, not only the paintings that portray the past of the country, but also in the artefacts produced, such as the blue mask, which are not just sculptures or masks made out of wood, they pay an important role in cultural rituals which represent life and death, the passing from a child into an adult as well as the celebration of the new harvesting and hunting season (Oyebade, Culture and Customs of Angola, 2007).

Each of the ethnic groups in the country have their own artefacts all made from wood, bronze and ivory, and even today, national artisans still make and sell those items in the country among many others. The most famous artefact in the Angolan art is known as the Chócue Thinker that most represent the many cultures of the country (Historia da África UFF, 2012).

A few other strong properties of the culture are the popular parties with the different dancing styles of each ethnicity, as well as the literature from some of the most renown authors like Pepetela, Agostinho Neto (Angola's first president), Boaventura Silva Cardoso and many others. Apart from the literature, the country also possesses cinematography and theatre that portrays the history and culture of the country (Puglia, 2018).

In the areas where the civilization does not reach, schooling is very dim. Not only most of them do not speak Portuguese, but they also renegade schools and find them strange to their reality where they value the tradition, their rites of passage, learning how to hunt, how to be a man and a woman and the educational system that the urban areas find so important are a contradiction to what the elderly teach in those villages (Silva, 2011).

Angola has a very strong culture when it comes to the villages in the heart of the country, the beliefs and values in those regions are more valuable to the population in comparison to the 'new world' which is the normal for most people. The country does have structural housing in the most developed areas, Luanda, Benguela and Huambo are a few of the cities more developed in the country and with better living conditions, however, even in those cities, the number of people living in poor conditions is highly elevated, around 41% of the total population of the country is considered to be poor (Vanguarda, 2020); which means that for every 100 Angolans, 41 have a low income, therefore, live in poor conditions.

During the many years of war, Angola suffered from mines being dug into the ground, consequently having a great number of lands to be inhabitable due to the high risk of a bomb being set off. As a result of this event, the government tried to remove the mines while rebuilding the rest of the country which was habitable, by adopting legal frameworks, much of which revealed overtime to be too expensive for the population, resulting on the population having to submit themselves into poor conditions of living (Cain, 2018).

Even though there have been projects to develop low-income households, it has not been enough for the minimum to no wage part of the population, that is why there is an urgent need to create strategies and projects to deliver the basic conditions to the population, prioritising this set.

7.2. Sustainability in Green housing developments

Due to the rapid growth in building developments the levels of carbon emission and energy consumption have been spiking substantially imparting considerably to global warming. Green building development fluctuates according to irregularities on economic and social developments, as a result, green buildings have become the vessel of sustainability development, assuming the responsibility to stabilize the social, economic and environmental issues of sustainability. The Sustainable Development Goal subsidized to the increase of the economy, however costing an astronomical expenditure of resources and growth of environmental concerns which impair the global ecology (Wen, et al., 2020). Several definitions for both sustainable and green buildings have emerged briskly worldwide, representing an affirmative response from the construction industry with reference to innovative and sustainable proposals to address the present situation.

Green Building has various meanings, with a majority referencing to requirements related to resource conservation, ecological protection, improvement of energy efficiency and pollution reduction respectively to the developing stages of building construction (World Green Building Council, 2021). Even so, GB[2] importance is an exceedingly endorsed concept, as its intention is to bolster sustainability while bettering the environmental achievement in buildings, strongly associated with reduction of life cost, expectancy on investment return and market strategy benefit (Teng, Mu, Wang, Xu, & Liu, 2019). The purpose of GB is to obtain ultimately a tuneful and sustainable correlation between the green and

[2] Green Building

the development of economic, social and ecological environments. Regarding the ecological sustainable development, the influence GB has is connotatively optimistic, knowingly, ecological value indicates the ecological benefits delivered to GB in particular energy saving, water, land, materials, solid waste and promotion of health.

Rules to deliver GB are enforced in construction, as they serve to appraise the sustainability performance of the building by dividing them according to their response capacity to sustainable requirements.

Several countries have established sustainable strategies based on their individual prerequisites, As a result of that fact that at the moment does not exist one concrete system to access the viability of sustainability in buildings, however, there are sustainability indicators which help to evaluate their development in developing countries: Sustainable construction practices, site and ecology, energy, water, material and waste, transportation, indoor environmental quality and building management (Olawumi, Chan, Chan, & Wong, 2020).

To some extent, essential social sustainability standards can be designated namely as education and awareness, as the existing rating tool for green buildings refer to energy and water as their main objective for sustainability, seen as energy criteria is harder to achieve compared to water criteria. To accomplish SDGs in the construction industry it is needed to work along with a description of the countries needs accordingly. A few of those descriptions of SDG's are Poverty, zero hunger, Quality education, clean water and Sanitation, Affordable and Clean energy, Decent work and Economic growth, Reducing inequality, Sustainable cities and communities, Climate action, Life below water and Life on land (Wen, et al., 2020).

For a sustainable living to be started, there is a need for a development, in this case, the development refers to sustainability, which is a reference to environmental protection, economic development and social equity. Our societies have been built for centuries and in order to add any drastic change a rehabilitation

is in order, to add sustainability it is the same, for that, there is a need to have in count all housing developments, whether they are informal or self-help housings.

Regarding sustainable housing development, the priority needs to be the poor, whereas general rehabilitation is more concerned on middle to upper-middle class housing. To further address this topic of sustainability housing, there have created two different ways which are often used: environments for self-help and managed low-income housing, and improvements for lower- and middle-income do-it-yourself home. Self- managed housing can be either self-built or manufactured homes, in other hand, do-it-yourself homes started as the so-called shacks (Sullivan & Ward, 2012).

There is an enormous need for rehabilitation in order to be able to retrofit and recast housing developments. The idea is to create green buildings, and eventually green societies, and to achieve this goal it is necessary to reduce the energy use which enables the opportunity to invest in both economy and technology to be able to retrofit old structures. However, there is a negative side for those green societies, there are high costs for sustainable applications. These smart housings are equipped with renewable energy applications to avoid the negative impact of carbon emission, but not everyone can afford them.

The awareness for those same smart/ green housings is growing and it is in their favour, the creation of sustainable solutions for housing, and for that comes the awareness for health benefits and economic benefits of having technologies made for saving energy and water. For those saving programs there are projects related to waterization for energy efficiency and renewable energy. Besides these programs there are other areas of sustainability available, which are: water/ wastewater management, waste disposal systems, microclimate design applications, shading, rainwater harvesting etc (Sullivan & Ward, 2012).

The application mentioned are the ones that are trying to be applied in low-income households, and the technological interventions that can possibly be made are:

- Microclimate Design and Waterization for energy efficiency.
- Renewable energy technologies for alternative energy.
- Water and wastewater technologies for water quality and conservation.
- Waste systems for the recycling and reuse of resources (Sullivan & Ward, 2012).

With all the awareness about climate change, there has also been an enormous growing need of technologies to emphasise the energy use and eco-efficient technical solutions for societies.

Eco-efficient building/societies are often divided in two. First, is about the materials and energy efficiency in buildings, the technologies used to measure the improvement. Second, are the strategies to allocate new constructions to existing infrastructures. There have been reports about studies related to sustainable housing and how it is seen in people's daily lives, the problem is that it is also generalized as to being a representation of people's daily consumption and so, the need for the so-called sustainable living increases. This need is developed around the future societies and how they need to be post-carbon societies with ecological sustainable housing. However, the question posed is "How to achieve this reality?".

With co-living arrangements perhaps? There are projects which refer to co-housing as a way of being more ecological, social and economic. The idea of sharing spaces and resources. So, is a circular economy the answer? A sustainable transition is happening all around the globe, people believe that the future is post-carbon, that the salvation is in eco-efficiency and technology developments.

The future is to be made based on everyday lives, the infrastructures, environments and provisions are being studied to be post-carbon and to add growth in economy at the same time (Hagbert & Bradley, 2017). All the change in the world, all the new developments for sustainable and affordable housing are also to improve and to anticipate the crisis in affordability. The resources needed are limited, so measures to enhance the efficiency are in development. Government parties such as construction managers, project managers, policy makers and others, are working on plans to allocate resources. However, these allocations rely on the iron triangle[3].

To reallocate it involves a mass housing project which involves environmental impact, customer satisfaction, quality, cost and time. One problem with this is the fact that mass housing production tends to be not affordable, although, mass housing projects can be made affordable, made also low-income communities and sustainable. This means that the reallocation process would have to think more about the quality and cost rather than time.

To reduce the cost, it must have in count people's income and home appliance so that it is just to all, however, income also relates to what people spend daily and it is not only with energy but also food and water, if the consumer produces their food than the amount of money spent daily will decrease, and that approach can be used in all the other areas, making the consumer a proconsumer. Another way of dealing with affordability is to have a sustainable house with the use of energy efficiency to reduce energy operation, thermal solar systems to replace electric water heater leads, luminous efficacy lamps, automated lighting system, improved insulation, etc, meaning, low energy buildings and zero-carbon (Chan & Adabre, 2019).

[3] Iron triangle are fundamentals of time, cost and quality

One more way can acquire sustainability is through supply-enabling strategies. If you give people low loans and better supply that comes from low-cost lands, you reduce the production costs. In other hand, there is the possibility to divide the housing market in two: affordable housing market and normal housing market. That way both markets can be sustainable and affordable (Adabre & Chan, 2019).

For the developing and underdeveloped countries who are the ones who mainly struggle with affordability, mainly caused by poverty, or natural disasters, there are projects that create the minimum conditions to some communities. These projects create sustainable and architectural constructions with energy saving and use of renewable energies sources such as recycling, rational water management, pollution reduction, sound and thermal isolators with low economic and social costs, housing models that usually fits two people giving them the minimum conditions to live with comfort (Seyfang, 2010).

To generate solutions for sustainable development and consumption there are the grassroots innovations that are activists and organizations which work on getting those solutions. These grassroots innovations challenge characteristics and resources for a continuous development. One of the solutions they came up with are the homes of the future, which are more affordable and more sustainable. These houses are created to reduce the emission of CO2, starting the movement for low or zero-carbon homes (Seyfang, 2010). Zero-carbon homes are seen as an aspiration for environmental sustainability in housing. A zero-carbon home is to have a zero-carbon emission from all the energies that are used in the house.

Some of the advantage for zero-carbon homes are: energy efficiency, affordability, quality, innovation, sustainability, and meeting with people's needs. These homes can be considered as a form of sociotechnical system. Unfortunately,

there are also disadvantages for these homes: difficult to finance, requires commitment, and difficult to obtain sites for production.

One approach to produce zero-carbon homes are groups of self-build housing, which have been studied to have potential to support a more environmental and social sustainable environment (Heffernan & Wilde, 2020). The carbon emission on a global scale is reaching higher levels each year, and it has become a constant concern. One of the methods to decrease this reality are the renewable energies, however these energies are more expensive. A more affordable and yet with less carbon emission approach is the use of ammonia instead of coal. However, ammonia is considered very toxic and harmful, so, although it is a new approach is having to be handled carefully so it can be delivered. Some of the benefits of ammonia are that it is being mass produced right now and used as fertilizer, which means that a lot of countries have infrastructures for storage and transport (Hasan & Dincer, 2019).

Ammonia could most definitely substitute oil and coil in our daily lives and eventually it can be replaced by hydrogen, the one problem with hydrogen is that it is very difficult to collect and store. For the zero-carbon solution, renewable energies are the answer, from those beside ammonia and hydrogen there are also: wind and solar energies. However, the biggest problem is to have people changing their current energy methods at home for the low or zero-carbon, as people only change for what they trust, and as long as they do not see a mass change happening, they won't follow (Wilde, 2019).

In terms of housing, one of the recent discussed approaches has been low-carbon emission homes, these types of housing are to be made of products that will produce low carbon emission and become more sustainable for the community. Low-carbon emission homes are supposed to be efficient in terms of energy, affordable, sustainable, innovative, and with quality. However, because it is not yet a common approach, these homes are difficult to fund. The use of renewable

energies has been one of the approaches being implemented to deliver the low-carbon emission solutions into communities. The issue with the renewable energies is the fact that they are not that affordable.

Apart from wind, solar, and wave energies, there are also ammonia and hydrogen-based energies which are more affordable approaches, to substitute coil which has one of the highest emissions of carbon dioxide per energy unit, and oil, therefore reduce the carbon emission. However, ammonia and hydrogen are more difficult to work with in comparison to the rest, starting from the fact that ammonia is highly toxic and harmful, and hydrogen very difficult to storage.

A few projects have been made, for instance one in Columbia, where they were developed houses installations that are eco-sustainable which are supposed to be the new 'future' for our societies. In this specific project, for electricity, "the module was equipped with a stand-alone photovoltaic system to deliver 13,2 kW-h/month" (Salazar, Arroyave, & Moreno, 2014).

In the Uk for instance, a few years ago became a challenge to change their housing developments into zero carbon homes, and they had three elements that should've been followed when developing these projects, which are: a Fabric Energy Efficiency Standard (FEES), Carbon Complience and Allowable Solutions (Heffernan & Wilde, 2020).

Another approach to reach the goal of less carbon emission in a shared economy, living and developing self and shared housing communities to reduce the usage of resources and the emission of carbon. For those who do not wish to be living on a shared community, there are approaches related to the ultilites at home that are being made to produce less carbon emission, for example self-suficiency through water harvesting and sewage treatment, or even the use of traditional building materials made from recycled straw bale, wood, cob, reed and thatch. The problem with this, is the people that are used to commodity and now are fearful of the change.

The benefits for sustainable and affordable housing are still not very disclosed for people, and what they miss to understand is that affordable housing has the greatest potential for sustainability requirements.

7.3. Influence of culture in green housing development

In the construction industries, one of the main materials used are the raw ones which are extracted globally making it 40-50% of the global usage, in turn, construction industries contribute largely to the carbon emission worldwide. Professionals in fields related to construction have an obligation to find an equilibrium within the energy efficiency on the buildings senility while applying non-renewable material which are essential for the manufacturing (Murtagh, Roberts, & Hind, 2016). "A holistic shift is required in organizational 'mindset' and culture" (Polonsky & Rosenberger, 2001). It is the responsibility of the designer/architect to incorporate sustainability onto the work, therefore, it falls on them to advise and inform customers of sustainable approaches which results into marketing strategy to advertise their services. Sustainability has become a great and important facet of value creation in design/architecture, it presents the capacity to enrich more the marketing of this area.

The cultural background of a country has a crucial influence on its population, on how they are perceived by the rest of the world. Said background, can be considered one of the most important characteristics of the country, a patrimonial wealth and part of the identity of that country and its people. Be that as it may, how can the culture of the country or person influence them on changing their habits into a more environmental conscious one?

Sustainability has become the goal to achieve when referring to housing and way of living, anyhow, in housing or building developments, the conservation and promotion of culture has been neglected as a model for construction having only in consideration the social, economic and environmental dimensions of

sustainability. Buildings can be used as historical figures of a society, they can be a representation of culture, designed to embody the past while predominating the modernistic view, treasuring the legacies of the past while embodying the current and future cultures of a community.

Culture in buildings can be represented not only on the outside, but on the inside as well. It can also be represented through the cultural diversity, identity, vitality and continuity of the building along with the aesthetic experience, creative sensibility, spiritual enrichment and behavioural shifts. Buildings can testify to the local culture and emulate significantly in establishing a sustainable community. The accentuation on green and eco-friendly efficiency does not safeguard a sustainable forthcoming, as it is unavoidable re-orientation on the view of the world (Wu, Fan, & Chen, 2016).

Being connected does not need to refer to a physical connection, buildings and constructions may also present a connectivity through a cultural relation among the past, present and future. Such philosophy is in fact lacking from the current constructions. The changes that implementing cultural sustainability in housing developments alternatively than merely technicalities engage on the perception of the human-centric idea of evolution.

With the fluctuation of globalization and competition between businesses, companies and personal business have had the urge to shift their mindset from conventional strategies towards convoluted strategies in which they overstep limits. A multitude of professional in differentiated areas often find success when adopting culture to their portfolio. Culture has been known to perform as a mediator between products and their performance in the market, as national culture often influences consumers decision making and consequently ethnical cultures perform as a mediator of quality awareness. As a result of the influence of culture, construction related businesses may be inclined to rethink and revaluate how they are positioned in the market. (Talay, Townsend, & Yeniyurt, 2015)

7.4. Sustainable consumer behaviour

Sustainability is driven by the need to be more environmentally conscious, therefore, requires a level of product innovation, considering the issues societies face related to consumption of products which harm the environment. Although the creation of sustainable product might seem like a solution to environmental issues, it is not only that. Sustainable product innovation often requires investments, which are not low; political support; consumer approval and disposition to pay for those products (Antonides, 2017).

For this study, it is imperative to understand the consumer behaviour to be able to guide the design for the sustainable housing development which aims to invigorate the sustainable consumption, as well as delivering the basic needs to the population.

In the past few decades, the world has been more and more aware of the environmental and with it has come the awareness of the understanding and responsibility of the consumer behaviour in the marketing field.

Consumer behaviour is derived from different points of view, for example, political view; marketing view; consumer attentiveness; and ethical crisp. In order to decipher the consumer behaviour, researchers frequently analyse the merge of theories from different methodologies, as the scrutiny of the consumer behaviour is not similar to an economic analysis for instance, that derives from suppositions which in turn create a perceptive foundation of how the consumer decision making process goes (Antonides, 2017).

Studying the general consumer behaviour, the focus is most likely in the personal benefits and costs; whilst green consumer behaviour is more focused on long term deliveries, it is not about getting prompt personal satisfaction, but having future outcomes that directed to the welfare of the society as a whole (McCarty & Shrum, 1994).

Studying the consumer behaviour is very compound to detail by simply stating assumptions. The researchers who work on this area need to arbitrate between the preponderance of supposition and the stow of habits that demonstrate the traits of said consumer, bringing forth elucidation for the particularity of features of the sustainable behaviour, such as social influence (Antonides, 2017).

Papers such as *The Effect of Elite Polarization* and *Does Nationality Matter in Eco-Behaviour?* state that political climate and nationality are remarkable components in escalating the extent of eco-behaviour. On the other hand, the paper *Sustainable Consumption Dilemmas* discusses the importance that social domination has on consumption, without limiting the consumers free will. However, in *Keep on Rockin'in a (Plastic-)Free World: Collective Efficacy and Pro-Environmental Intentions as a Function of Task Difficulty* it is discussed that the communal endeavour could depend on the hassle of the piece of work.

Making a purchase, no matter what the product, there are implications involved, they either are ethical, resource, waste or community impact (Young, Hwang, McDonald, & Oates, 2009). The decision-making process for ethical or sustainable solutions in products bring off a 'motivational and practical complexity of green consumption' (Moisander, 2007).

In the today's world there has been an increasing need to keep the consumer informed about the sustainable aspects which need to be taken into consideration when purchasing products labelled as sustainable (Young, Hwang, McDonald, & Oates, 2009).

Consumers choosing to become sustainable or persue an eco-friendlier selection may be influenced by what is around them or is involved in their day to day lives; for example, when it comes to sustainable foods, consumers might be influenced by parents who focus on a more healthy diet, friends who are concerned

about the environment, or even external factors such as living in a foreign country and experiencing new ethics more related to sustainability (Antonides, 2017).

A categorization and review of the consumer behaviour was made, where external and internal critical factors are said to influence on the consumer behaviour, related to energy usage, the categories stated were consumer choice; needs, values and attitudes; learning; buying process; categorization of consumers and product attributes and categorization (Faiers, Cook, & Neame, 2007).

Environmental attitudes are the willingness or the behaviour that consciously looks to reduce the bleak outcome of the individual's act on the natural world. Therefore, giving emphasis once again on the direct influence the environmental attitudes have on green consumer behaviour (Kilbourne & Picket, 2008). This behaviour can be referred to as pro-environmental behaviour, that in essence is the people's behaviour regards the environmentally friendly purchase or clearance of certain products. Furthermore, it can have two different aspects, the first is the green purchasing behaviour which can end up on the consumer acquiring the green product; and the second is the general environmental behaviour in which the consumer decreases the consumption of resources and energy as well as the diminish of waste products and the recycling of them (Kilbourne & Picket, 2008).

Dobson wrote about how the consumer behaviour changes related to the sustainable development of products. For him, behaviour changes driven by environmental citizenship considerations can last longer than behaviour changes triggered by financial incentives; he declared that attitudes may have a bigger influence than behaviour, however, behaviour change is of the utmost importance for environmental policies (Dobson, 2007).

To understand and change the consumer behaviour concerning sustainable consumption, is extremely essential to have the purchasing of the product itself, which was what Dahlstrand (Biel & Dahlstrand, 2005), Sener and

Hazer (Sener & Hazer, 2008), and Wheale and Hinton (Wheale & Hinton, 2007) said. Which might be enclosed in the brand strength; culture; demographic characteristics; finance; habit; lack of information; lifestyle; personalities or trading off between different ethical factors (Young, Hwang, McDonald, & Oates, 2009).

Williams and Dair (Williams & Dair, 2007) stated that changes must happen in the assembled environment so that in turn the sustainable behaviour can occur. Everyone's consumption behaviour can be seen as a cycle of purchase commitments, which may be the one of the most logical forms to comprehend green consumerism. The circumstantial elements although important, have been overtaken by a more directed focus on how the green consumer made the purchase selection itself (Young, Hwang, McDonald, & Oates, 2009). The shortage of time for the research project, the decision making, and the purchase all have been the main barricade for the purchasing process of green products, followed by the price of products that is well documented in Sriram and Forman project (Sriram & Forman, 1993).

Consumers necessitate up to date and more conscious exploration in order to acquire the appropriate information, for instance, the product environmental and the social responsibility of companies conduct (Young, Hwang, McDonald, & Oates, 2009). The last statement can also be supported by Sriram and Forman verdict in which the consumer deposits less value on the products environmental performance when acquiring a higher quandary product as opposed to a more recurring one (Sriram & Forman, 1993).

For a green consumer, a micro purchase may come with a process. This process includes five divergent elements, socio-economic, infrastructure and cultural factors for the purchase are crucial. The first element is the consumers general green values and knowledge; the second is the green criteria for the purchase; the third are the barriers and facilitators; the fourth is the actual product

purchase; and the fifth one is the feedback (Young, Hwang, McDonald, & Oates, 2009).

7.4.1. Influence of culture in the sustainable consumer

Culture has been defined in different ways, one of which as: "The collective programming of the mind that distinguishes the members of one group or category of people, from another" (Schultz, 2002).

Green consumer behaviour intention can the affected by internal and external factors. The internal factors are the personality traits of the consumer and the value systems, while the external factors are social, cultural and economic ones (Leonidou, Leonidou, & Kvasova, 2010). People tend to support their actions on individualistic or collectivistic rational, even if they do not realise it. Hofstede believes that this type of thinking is connected to the societal roles (Hofstede G. , 1984). Findings suggest that environmental consciousness plays a positive and remarkable hold on green consumer behaviour and active ecological behaviour (Gammoh, Okoroafo, & Koh, 2019).

Value oriented and green consumer behaviour are all the same unreliable and the market position and excellence diverge from culture to culture. Schiffman and Kanuk stated that the cultural values have an important role in shaping the individual point of view concerning the world, as this view is commonly applied by all members of the group thus outlining the attitudes and behaviour (Schiffman & Kanuk, 1994). Cultural dissimilarities have a deep influence on how organs of a society think and act.

Developing countries have been seen as countries with the most cultural influence in the day to day lives of population, for that reason, researchers have emphasized the importance cultural values orientation have on those countries, as opposed to the developed ones (Diekmann & Franzen, 1999). It has been pointed out that there is a notable positive correlation between ecological intent and

behaviour (Chan & Yam, 1995). It is important to acknowledge and forecast the influence culture has in the consumer purchasing behaviour. One of the principal drives of the consumer behaviour is the collectivistic culture (Hofstede G. , 1980).

Collectivism and long-term orientation cultural values are deeply associated with environmental attitudes. Nonetheless, there has been shown that in some developing countries (ex: Sri Lanka) the environmental attitudes did not have a positive significant effect on green consumer behaviour intention (Samarasinghe, 2012), like Angola, there is a lack of awareness in consumers. Considering the number of pertinent problems developing countries face, people pay more attention to the most pressing issues, which, unfortunately are not the environmental ones (Diekmann & Franzen, 1999).

Culture does not only pay a significant role in influence on a country level, it is important to recognize that its influence can also be on individual level. Brands need to start focusing more their charm in the collectivity, the harmony their products have with the environment. As for the individual level, one can say that a sense of community or collectivism may pertain to environmental consciousness. For those reasons, it is vital that marketing managers focus on consumer's individualism and collectivism all together. The designing of environmental campaigns or green messages must also focus on cultural factors and the benefits the products have for the entire society and the environment (Gammoh, Okoroafo, & Koh, 2019), as well as the analysis on how predecessors and outcomes of consumers environmental viewpoints and behaviour can have a positive act on emerging economies (Samarasinghe, 2012).

7.5. Research Hypothesis

Cultural values either from a person or a population in general can influence the formation of their environmental beliefs and attitudes and in the

future may help to predict their preference regarding their behaviour. These values are commonly viewed as a factor that helps on the formation of the idea an individual has of the world, how the world is perceived through their eyes. Nevertheless, the cultural differences that the country in question has can also have an enormous influence on each of the region of the country, northerners may think and act differently from the southerners, and that difference may be encountered also when is referred to sustainable thinking.

The cultural orientations of a person are directly connected to their values, which makes their orientations in people's relationship to nature and the world, their relationship to other people, the activities performed and how they perceive time and space partially important on their predisposition to green consumption. On the grounds that there can be both individualistic and collectivism cultures, being individualistic culture the one where the individual has his own goals and considers them more important than the group, this individual might be less inclined to add value to a society or the world if that is not beneficial to him, whereas collectivism culture has the group (population) as a whole, and sees the needs of all more important than the individual needs, making it more perceptive to the idea of being concerned about the environment and the nature if it is beneficial to the population.

If History and nature are associated with past-oriented versus future-oriented cultural values or even long-term or short-term oriented values, what is to say that the cultural values are not pertinent to environmental concern attitudes? Cultural values can be oriented differently, from Man-nature, Man-himself, Relational, past-time and activity orientated which are all classified into time and space, hence History and nature.

The decision to go green is correlated to the necessity to change the mentality of the person in question in order to adhere the green consumer behaviour, which is not so much about the immediacy of the personal beliefs but

rather the future-oriented outcomes that in the long term may benefit the society as a whole (Samarasinghe, 2012).

Are collectivistic cultures more susceptible to become green?

To become green is a process, and before one make that decision it needs to ponder on where it may lead. One of the many reasons that come up on consumers deciding to go green is the consciousness about the environment, however, green products are often correlated to high prices and low availability which creates a barrier for those environmentally conscious to change to a greener consumption. On the other hand, to be conscious about the environment one needs to have access to information and education, and in underdeveloped countries more than half of the population either does not have any schooling or not enough available information about the matter. Whether it is because the lack of funds or cultural principals that is one pertinent problem with green consumption. The culture can be a very big influence due to social relationships that tend to work as a model for the consumer reaction and perception of the world.

In a society where the collectivism culture predominates, individuals lean on the affiliation, demonstration and status that contribute on their consumers behaviour (Samarasinghe, 2012). The social conformance of the collectivism accentuates the interdependency, making the people from this culture more inclined to flourish environmentally friendly stance, as they exhibit a more united front having the society supporting on the individual's decision making. Seeing that the collectivism culture is about the group, people are usually instructed from birth that they are members of a whole, commonly from sizable families, they are taught to share their resources and to protect each of their representatives with genuine devotion as they believe that their outcomes benefit the society. When facing scarcity, the resources are shared through the entire group making the society thrive. Collectivism idealists are more inclined towards an environmental concerned attitude. (Sreen, Purbey, & Sadarangani, 2018)

Collectivist culture does not mean that the members of the society will for sure prefer to go green and to change their mindset and ways of living, however, because of their sense of responsibility towards others and the nature itself, they might be more inclined to be sustainable or environmentally concerned compared to the individualists who do not take responsibility when their actions affect other or the environment unless they are benefited from it.

In a country such as Angola where families are extensive and, in some extent, people believe that their actions may affect others, a collectivistic approach for the implementation of the green and sustainable awareness might seem more reachable, as one of the main problems is the scarcity of resources for the population.

As it follows the hypothesis:

Hypothesis 1: Can the cultural values of a population/person influence on green consumption.

Hypothesis 2: Can the Angolan consumer behaviour be influenced to become green in the architectural sector?

The next chapter will be displayed the methodology of the thesis, divided into two sub-chapters:

1-Research Paradigm and Research Methods.

2- Data collection strategy and Approach.

8. METHODS

The research taken on this thesis, was a modified and fundamental theory research design, whereby the research questions and inquiries were made by theoretical sampling and comparison between the literature, the risen theory and data (Fischer & Otnes, 2006). The target population for the study are Angolans, where the study took place. Before stating the methodology used for this study, it is imperative to point out that the objective of the study is to show the influence cultural values of Angolan population have on green consumption, and to understand the consumer behaviour of this population. In which as previously mentioned the research questions are:

Research Question 1 - How is the Angolan consumer behaviour towards green consumption? How much do Angolans know about green and sustainable consumption?

Research Question 2 -How does culture influence Angolans in their green consumption? Does culture have any influence in green consumption in Angola?

At the first glance of the pertinent literature, it was referred that the study was focused on Angola and its population, as well as the cultural relevance and the connection between design and marketing (Beverland, Micheli, & Farrelly, 2016) for green housing developments. This observation points out the absence of materials addressing the consumption of green products in Angola, which influenced the choice of research design. However, taking into account some previous works found related to the influence of culture in sustainable consumption, which highlight how valuable it is to understand the influence culture has on an individual as well as to the country (Bas19).

8.1. Research Paradigm and Research Methods

The pragmatism research paradigm does not get convoluted in the controversial metaphysical notions such as truth and reality, however, it does take upon the supposition of single or multiple realities that are often unlocked in factual exploration (Creswell & Clark, 2011). A substantial promoter for the pragmatist philosophy is the fact that knowledge and reality are both driven by beliefs and habits which are socially assembled (Yefimov, 2004). Pragmatist researchers not only set aside philosophical arguments, in particular metaphysical ones to do their research; they however, concluded after a thoughtful argumentation about the efforts and involvement, that the wider philosophical arguments can be dealt with. Which means that it is entangled to human experience and needs (Dillon, O'Brien, & Heilman, 2000). Pragmatists trust that people have a free will to believe in whatever they desire, although, a few of these beliefs are not all likely to reach the goals and needs sets (Morgan, 2014). A major advance of pragmatists epistemology refers to the understanding that all people know is related to experience. One person's understandings of the world are determined by social experiences, meaning that every knowledge is individual and therefore built by socially common experiences (Morgan, 2014).

Deductive means interpretation from the particular to the general. If an unconventional relationship or link resembles implication by a particular theory or a case example, possibly it is true in many cases. A deductive design can analyse to see if this association or link did acquire on more general circumstances (Gulati, 2009). A deductive approach is about originating a hypothesis centred on an existing theory followed by the development of a research strategy to analyse the hypothesis (Wilson, 2016). Snieder and Larner stated that "the deductive approach follows the path of logic most closely. The reasoning starts with a theory and leads to a new hypothesis. This hypothesis is put to test by confronting it with

observations that either lead to a confirmation or a rejection of the hypothesis" (Snieder & Larner, 2009).

Hypothesis are tested because of the confinement of sampling, as researchers hardly ever work with the total population. These hypotheses are to be proven true or not true, therefore, based upon the sampling to approximate the representation of the population. Depending on how a sample is to be administered, a probability can be determined, presuming that the hypothesis is true. The testing of a hypothesis delivers means to quantify to what length the data from the sample is commensurate with the null hypothesis (Field, Miles, & Field, 2012).

For this pragmatic and deductive study, the method being used are mixed methods, mainly quantitative (survey and questionnaire) using a hypothesis and quantifying the Angolan population. Using a judgment process and by convenience of the researcher, as there are local impediments such as the study being made in a far location and the fact that a big part of the population is not literate, having a 66.03% (World Bank, 2021) of population that attended primary school, however since 2014 there has been a decline in those numbers; and the fact that the population do not know how to use internet or technology to answer online surveys, even though there are 10.36million people in Angola with internet access (Kemp, 2021). For that reason, there are also interviews being carried out.

The discovery of the level of knowledge regarding sustainable consumption and what are the approaches to be made in order to bring into the Angolan community the green housing development to which addresses the delivery of the basic needs missing in this population, having in count the cultural aesthetics of the study, there is a curiosity to combine both the green construction and the local culture and heritage. Showing the influence cultural values of this population have on green consumption.

From the research question 2, referring to the influence of culture in the green consumption, a hypothesis was created:

Hypothesis 1: Can the cultural values of a population/person influence on green consumption.

Hypothesis 2: Can the Angolan consumer behaviour be influenced to become green in the architectural sector?

8.2. Data collection strategy and Approach

Data collection: phase *I*. This research was conducted in two stages. In total 201 interviews/surveys (175 answered the online survey in phase 1, and 26 people were interviewed in phase 2) were conducted. First, 175 people chosen by chance answered the online survey. All Angolans from different age groups, profession and social status. This stage involved a general understanding of how much Angolans know about green products, their willingness to consume green products and a general discussion of current problems in the country that might have a sustainable solution where each person was questioned about their own ideas of how to respond to those same problem with or without sustainable solutions. This survey showed that some people do not have any understanding about green products and have never heard of them before, while others seem to have a vast understanding of the subject. It is to point out that 67.1% of the Angolan population live in urban centres and 32.9% in rural areas (Kemp, 2021) and the ones who live in rural areas are the people who would benefit better from a green housing development.

The questionnaire was self-administered, where the respondents completed for themselves, the questions posed. For this specific case, it was made electronically in its entirety. The type of questionnaire was chosen taking account some of these factors: the people meant to be reached, as it was already mentioned,

the study is being made from a far location; the questions asked in order to collect the necessary data and to avoid contamination of the answers given (Saunders, Lewis, & Thornhill, 2009).

The questions developed for this questionnaire reflect a broad range of Angolan cultural values, and even though some of the questions may seem redundant, the questions were classified based upon the most prominent values underlaying them. The questions are all a result from an analysis made on the online survey previously taken, focusing more on the analysis of the culture, and the researcher own experience both as a student and as an Angolan.

Data collection: phase *II*. To have a more depth understanding in the influence of culture on green consumption in Angola, a second phase of data collection was conducted. In this phase there were conducted interpretive interviews with Angolans, which will be detailed later the Findings chapter. In total 26 interviews were made. Because this study is being made far away from the country being studied there was a limitation regarding the number of interviewees and how the interviews were held. For the interviews, people were chosen according to their availability and driven by a theoretical sampling logic through which interviewees have the ability to contribute to the emerging theories, yet with a range from students, working people and even retired in order to get different perspectives on the subject.

The interviews were conducted both online and in person and lasted on average 20 to 30 min; according to the standard practice to avoid interviewees bias answers; there were a mixture of questions where the person being interviewed answered in their own terms with a fluid conversation and exchange of knowledge about the topic to explain or clarify certain answers given (McCracken, 1988).

Both online survey and the interviews held presented a deep insight as to how Angolans feel about green consumption and cultural influence, which enable the research findings to further refine the study.

9. FINDINGS

In the Methods section, it was mentioned that the research intended to prove if the cultural values of Angolan population have any influence on the green consumption in housing developments, and to understand to what extent this population consumes green products. This section will be divided into sub-themes, detailing the analysis of the data, and the presentation of the same.

The data collected was from both an online survey and interviews, as it was previously mentioned in the Methods section.

9.1. Data Analysis

To analyse the data collected to support the research questions:

Research Question 1 - How is the Angolan consumer behaviour towards green consumption? How much do Angolans know about green and sustainable consumption?

Research Question 2 -How does culture influence Angolans in their green consumption? Does culture have any influence in green consumption in Angola?

It was used the Google Forms for the online survey, and the interviews were analysed one by one manually. Every detail related to the questions and answers is available in the Appendix section.

The findings of this research show that Angolans do have some knowledge regarding eco-friendly and sustainable products and helped to understand to what extent do Angolans consume and are willing to consume in sustainable terms. It also helped understand what the biggest problems in the Angolan society from the point of view of the population are, and what sustainable approaches the people believe that should be implemented to solve some of the biggest issues of the country in the current period of 2021. The interviews gave a deep and insightful

knowledge of how the culture has affected the people, and to what point it can influence in the consumption of sustainable goods for green housing developments.

9.2. Online survey

The online survey, created in Google forms, was projected directly from the Research Question 1 -How do Angolans feel about green consumption? How much do Angolans know about green and sustainable consumption? However, for a general understanding, and to later develop the interviews questionnaire, there were a few questions that related to culture.

Questions in the online survey were created in three different categories, each of them designed to understand several elements related to the Angolan population. The first category was to get acquainted with the people answering, a standard background check on each on them referring to their gender, age group, level of scholarity, and questions regarding green and sustainable products, if they know of these products and whether they use or intend on using them. The second category was more focused in Angola at the moment, about the current issues the country has been facing while gathering the point of view of the people about what responses they would give to the issue in hand. The final and third category, relates to sustainable solutions for the country and once again requires the people to give opinions about what issue (current or recurrent) in the country they would like to see being solved, as well as solutions related to green housing developments. The questions on the questionnaire were dimensionally measured on 5-point Likert scale (Strongly Agree- Strongly Disagree) in some of the cases, while on others they were more of Yes and No questions.

The answers on the online survey related to the first category showed that from the 175 people who answered it, 64% where female and 36% male. The age

groups were between 18 and 64 or more, having respectively 44.6% (the highest percentage) for the age group of 25-34 (as show in the Figure 1 below).

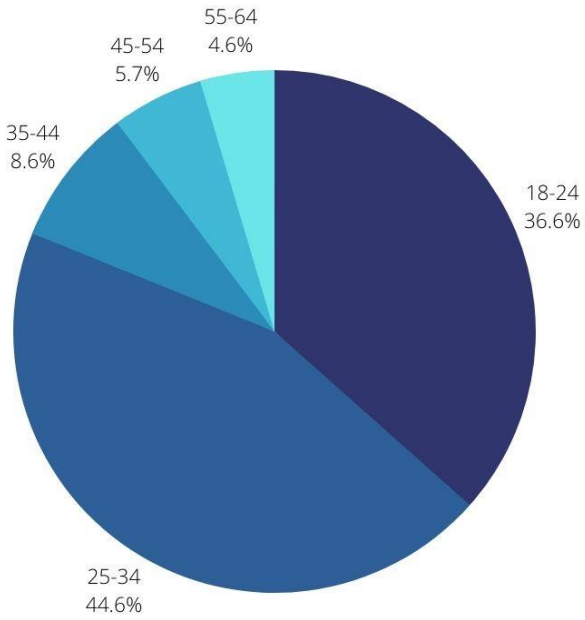

Figure 1: Age group Graphic, from the Online Survey.

From the cluster of people that answered the survey, it was shown that this set of people have at least attended University (65.3%) and thus have a bachelor's degree (Figure 2), which might have influenced in the percentage of people who have a vast (50.9%) or some (29.7%) knowledge of green or eco-friendly products (Figure 3).

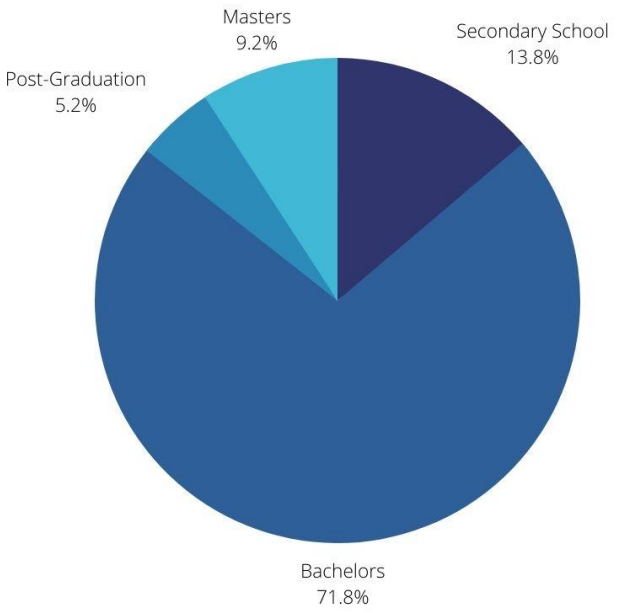

Figure 2: Educational background Graphic, from the Online Survey.

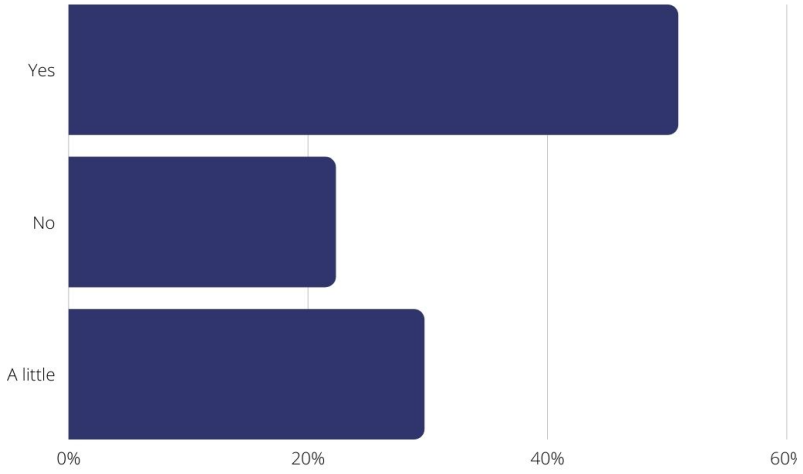

Figure 3: Knowledge of Green or Eco-Friendly products, from the Online Survey.

Angolans strongly agree that green or eco-friendly products can help solve problems related to nature and its resources (46.3%) as shown in Figure 4,

however, from the data collected, it was shown that the people do not have the financial purchase power for green or eco-friendly products (Figure 5).

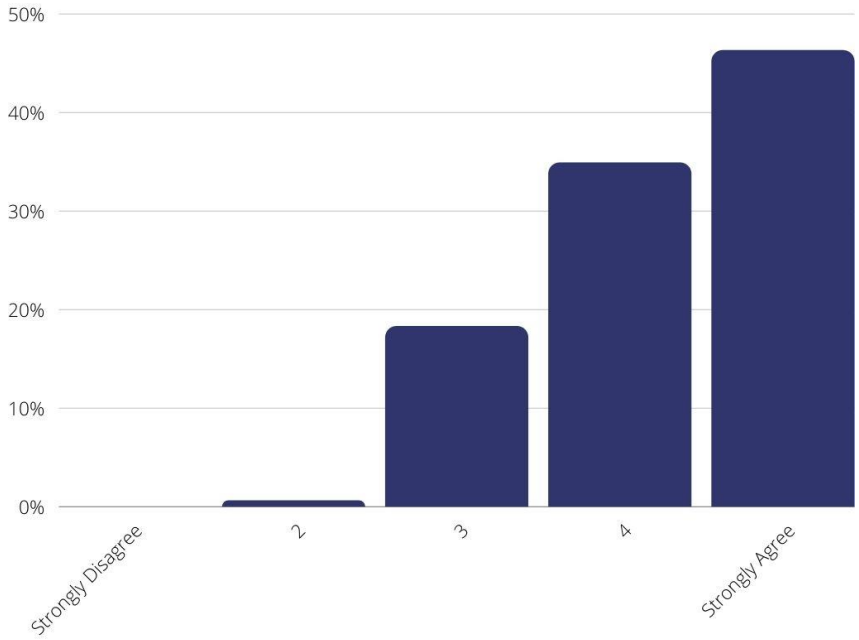

Figure 4: Percentage of people who strongly agree that Green or Eco-Friendly products help solve problems related to nature and its resources, from the Online Survey.

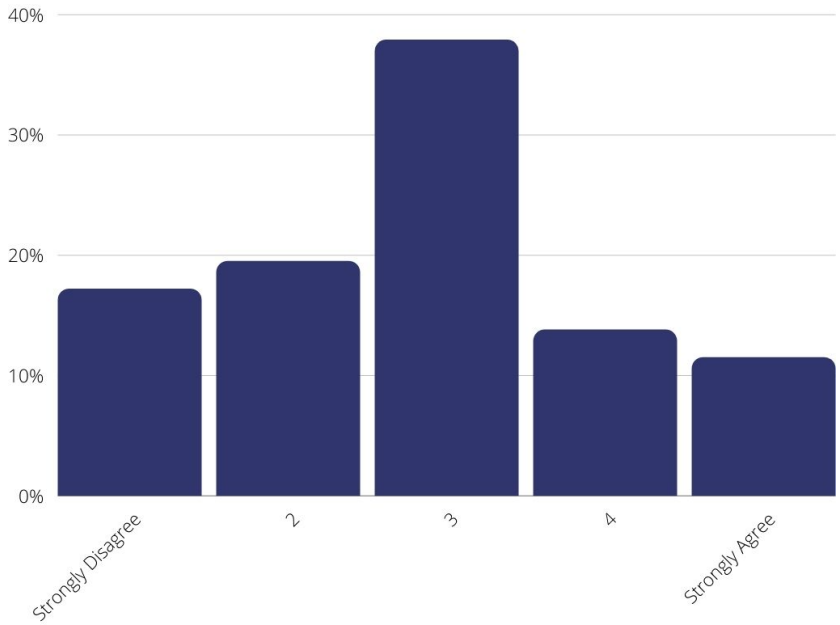

Figure 5: Percentage of people that do not and do have purchase power for Green or Eco-Friendly products, from the Online Survey.

People in Angola, according to the knowledge they have about sustainability and willing to purchase green products (62.3%) and given the opportunity they would implement in their home's sustainable products such as solar panels, recycled water and home appliances with alternative energy efficiency (74.3%), some of them have already traded generic brands to brands and products that are eco-friendly, and the data percentages can be found in Figures 6; 7 and 8 respectively.

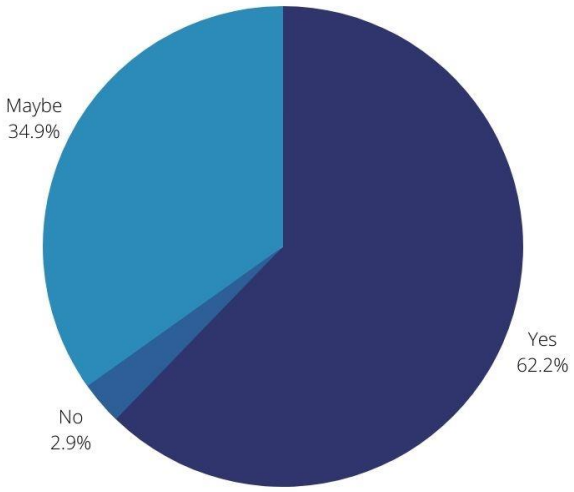

Figure 6: Percentage of people who have the intent of purchasing Green or Eco-Friendly products, from the Online Survey.

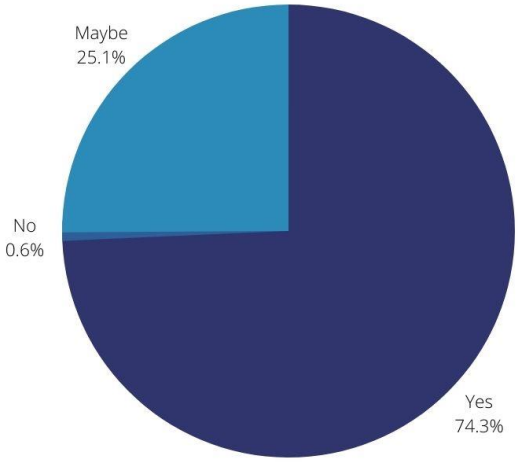

Figure 7: Percentage of people who given the opportunity would implement green products in their homes, from the Online Survey.

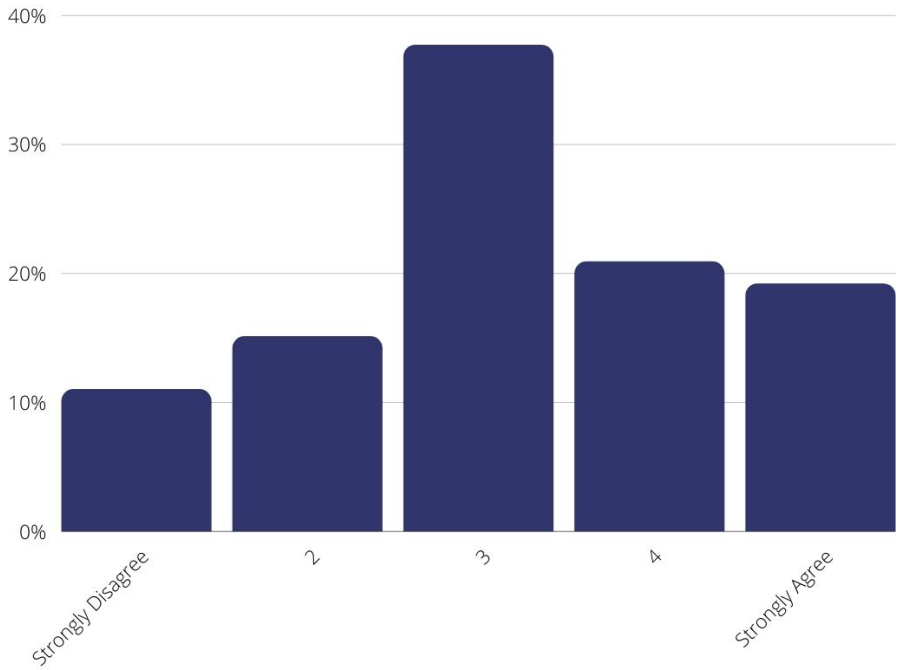

Figure 8: Percentage of people who have traded brands and products for ecological reasons, from the Online Survey.

The second category of the online survey referred to some of the current issues in Angola in the year of 2021. The city of Luanda to be more exact faces a grave problem related to the collection of garbage citywide. The government has accumulated a debt with the companies that collect garbage of two hundred billion of kwanzas (250 million euros) referring to the 2018/2020 triennium (Luamba, 2021). However, this was not the only issue in hand, Angola suffers every year with heavy rains during the rainy season of the country, and 2021 was not different. The city of Luanda alone had torrential rains that caused killings, flooding's, impassable roads, bridges collapse and families were left without a roof over their heads (Angência Lusa, 2021).

The people who have answered the survey were asked if they have helped or not in the issues related to the garbage not being collected, and 54.1% have answered that they have tried to help, while 33.3% said that they did not (Figure 9). In the meantime, 78.3% believe that the garbage can be recycled and then used to help the people who need the most, providing them with basic needs (Figure 10).

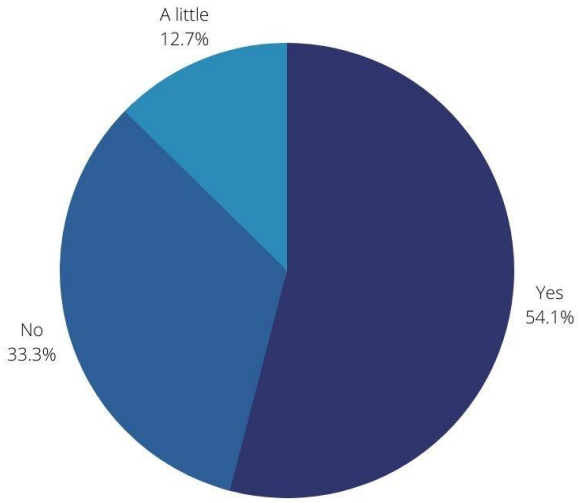

Figure 9: Percentage of people who have or have not tried to help with the garbage situation in the country, from the Online Survey.

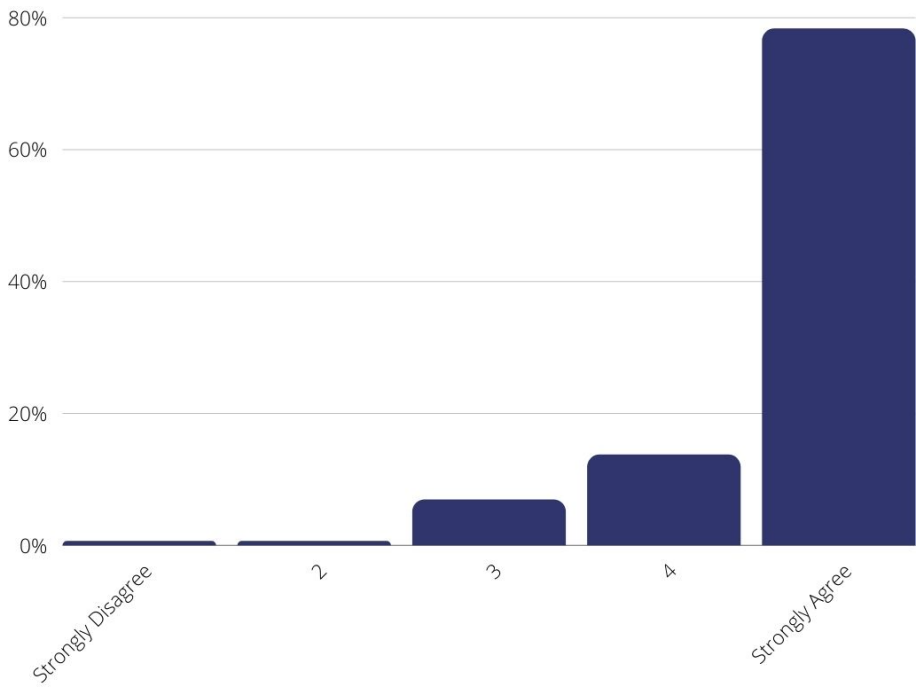

Figure 10: Percentage of people who believe that the garbage can be recycled and used to help those in need, from the Online Survey.

In this category there was one specific question, that asked people to write a comment. This comment was regarding the garbage situation and what solution they would give to solve it. After a throw analysis, the answers were divided into four groups, where 45.1% of the people said that the most immediate solution would the to recycle the garbage. (Table 1).

Answers:	**Total of people:**	**Percentage:**
Recycling	79 answers	45.1%
Garbage Separation	13 answers	7.4%
Eco Points/ Garbage dumps	15 answers	8.5%
Garbage Collection	24 answers	13.7%
Raise awareness of the Population	44 answers	25.1%

Table 1: Table of answers regarding solutions to solve the problem of the garbage in Angola, from the Online Survey.

For the final question in this category, the focus was the rain, people were asked if they thought the government and ONG's should be doing more to solve and help the people who have been affected with this issue over the years, with no surprise, 94.3% answered yes, and only 1.1% answered no. (Figure 11).

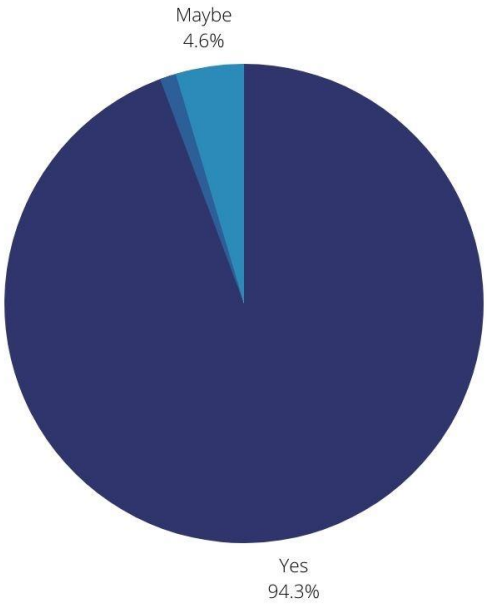

Figure 11: Percentage of people who believe the government and ONG's should help people who suffered from the rain in Angola, from the Online Survey.

The third and final category of the survey was more focused on sustainable solutions for the country when it comes to housing, which is the focus of the thesis. The questions circulated between delivering green housing developments to the population, and whether the people would be inclined on helping this project or if it would be welcome by the population. Similar to the last category, the final question of the survey also asked for people's opinion. In the first question, after a brief explanation of what a green housing development entitles, people were asked if they had the opportunity to help implement a project of this nature, would they be inclined to do it? And 86.9% answered yes, while 12% answered maybe and 1.1% no (Figure 12). For the question that followed, the focus was the people who

would receive this project, if they should receive help from a project of this nature, 97.7% said yes, while 2.3% said maybe and none answered no (Figure 13).

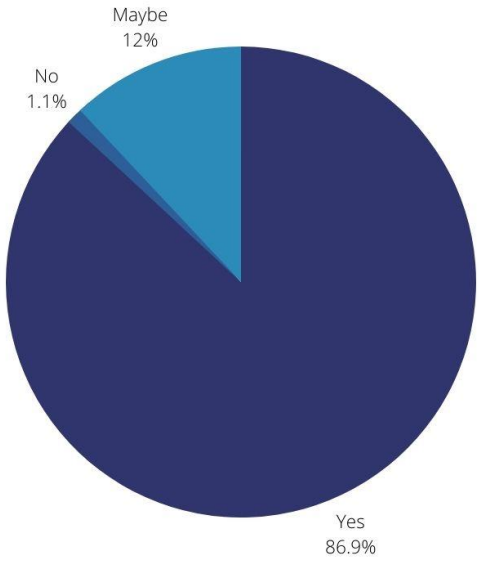

Figure 12: Percentage of people who given the opportunity would help implement a green housing development in Angola, from the Online Survey.

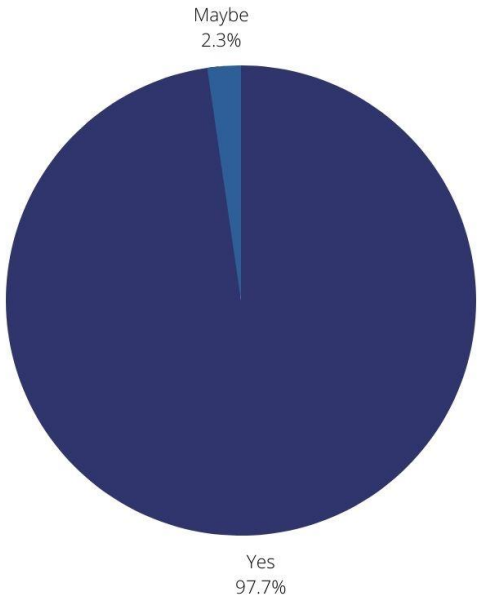

Figure 13: Percentage of people who believe the population in need should receive help from a green housing development project, from the Online Survey.

The final question of the entire survey was yet again one that needed the opinion of the people, it referred to all problems the country faces, whether they are the ones from 2021 or the longest problems ever faced in the country, asking them to state one problem they would solve if they could. This, to get a comprehension of how the people feel about certain issues of the country. According to the answers give, they were divided into 10 groups (Table 2).

Answers:	**Total of People:**	**Percentage:**
Corruption	16 answers	9.1%
Basic Needs	41 answers	23.4%
Housing	7 answers	4%
Recycling	45 answers	25.7%
No opinion	16 answers	9.1%
Water	5 answers	2.8%
Roads	3 answers	1.7%
Education	19 answers	10.8%
Hunger and Adjacent	19 answers	10.8%
Health	4 answers	2.2%

Table 2: Table of answers regarding problems in Angola that need to be solved, from the Online Survey.

9.3. Interviews

After gathering information from the online survey, some questions felt that they needed to be further addressed, with that, the researcher felt the need to do interviews with 26 people to get their opinion in the subject of cultural

influence. The structured qualitative interviews were mainly based on the Research Question 2 -How does culture influence Angolans in their green consumption? Does culture have any influence in green consumption in Angola? Which is where the Hypotheses came from. Hypothesis 1: Can the cultural values of a population/person influence on green consumption.

Hypothesis 2: Can the Angolan consumer behaviour be influenced to become green in the architectural sector?

The questionnaire for the interviews was drafted from a sample from another thesis work related to cultural values in America (karayegen, 1999), however, it had to be modified in order to fit the needs of the study. Some of the questions were a rewrite from the online survey, having in consideration that the interviews are not being treated statistically but through content analysis. However, even though they were not made in depth, the questionnaire has a different set of questions:

-Demographic questions, which addresses name, age, marital status and educational background, profession is mean to get an understanding of the respondents and analyse whether their age groups and gender have any influence on how they answer.

-Native culture questions, helps to measure the respondent's awareness of Angolan culture, which can lead to the researcher's analysis regarding the influence cultural values might have on the population and which are the primordial needs when it comes to housing.

-Sustainability questions, were meant to once again understand to what extent people know of these products and if they believe these products to be welcome or not in their midst.

The questions of the structured interviews were as follows:

1- Name?

2- Age?

3- Marital status?

4- Level of education?

5- Profession?

6- Do you have any knowledge about ecological/sustainable products?

7- How did you find out about the products?

8- Do you use ecological/sustainable products?

9- Would you say that you are influenced by others regarding the use of these products?

10- Would you influence others to use green/sustainable products?

11- How do you define the Angolan culture?

12- Do you think culture has a positive or negative influence on the Angolan people?

13- Would you say that Angolans are a people easily influenced in cultural terms?

14- In Angolan culture, at how old is it considered normal for a person to become independent and leave their parents' home?

15- How would you say that the elderly is treated in Angolan families?

16- To what extent are you considered culturally influenced?

17- How old do you start working in Angola?

18- When is it considered appropriate to marry and have children in Angola?

19- In your opinion, what are the biggest impediments in Angola regarding housing?

20- Do you believe that in sustainable consumption it is necessary to respect the country's cultural values? Yes (next question) No (why?)

21- How can culture have a positive influence on sustainable consumption?

22- Villages in Angola are sustainable, however, they lack basic sanitation (water and energy). If a project that would involve building sustainable houses with basic sanitation were presented to the population of these villages, how do you think they would react? Due to the impact that culture has on their daily lives.

23- What is the best way to preserve our Angolan culture in housing developments?

24- If Angolans are easily influenced culturally in various aspects, would you say that they can also be easily influenced when it comes to sustainable housing?

Some of the data, as previously mentioned was retrieved from the online survey (as show in the Figure 14) related to the influence of culture.

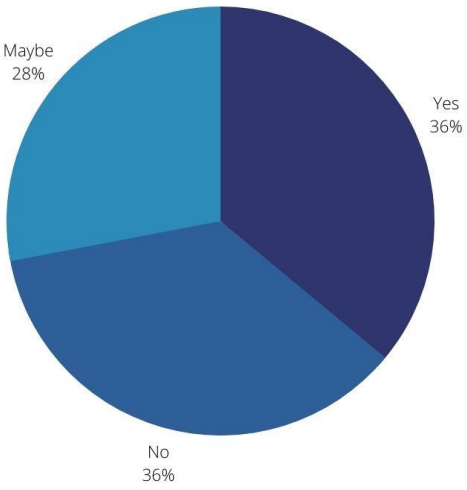

Figure 14: Percentage of people who believes or not, that the culture can be an impediment in the implementation of green or sustainable products in housing developments, from the Online Survey.

From the Figure 14, the interview was drafted, and the people chosen gave their insight in matters related to the research relevance. In its entirety the interviews were taken from a set of 24 question, where 7 of them had the most relevance for this work. They are: 1- Does culture have a positive or negative influence on Angolan population? 2- Would you say Angolans are easily influenced culturally? 3- What would you say are the biggest impediments in Angola in terms of housing? 4- Do you think that it is important to respect the cultural values of the country in green consumption? 5-How can culture influence in a positive way the consumption of green products? 6- The villages in Angola are sustainable but lack the basic needs (energy/water). If the idea of building sustainable houses with water and electricity was presented to them, how do you think they would react? Because of the cultural impact on their daily lives. 7- What is the best approach to preserve our Angolan culture in a housing development project?

The age gap for the respondents varies from early 20's to late 60's, having 17 people in their 20's (65.3%), 4 in their 30's (15.3%), 2 in their 40's and other 2 in their 50's (both 7.6%), leaving 1 in late 60's (3.8%). For the educational background, 17 people have finished a bachelor's degree (65.3%), 4 have a master's degree (15.3%), 2 have finished secondary school and other 2 have a high certificate degree (7.6%), while 1 has gotten to the 7th grade of elementary school (3.8%). The interviews raised an awareness that people in Angola, despite the knowledge of green products do not use them because the country itself does not pay too much attention to it (also showed in the survey illustrate in Table 1). People answered the questions in a very deep and personal way, which might be due to the fact that not all of them feel that they are particularly influenced by the culture in their day to day lives, even though 84.6% stated that Angolans can be easily influenced by culture when it comes to sustainability. However, their

answers revealed the country cultural values related to housing might be influenced by culture, although there is still lacking general knowledge of the population in relation to green consumption. There was one question posed, question 15 which asked how elder people were treated in the Angolan culture, and it is safe to say that 100% stated that elderlies are very well treated in Angola and are considered very wise and a fountain of knowledge and cultural values.

Unfortunately, the questions related to the impediments in housing and the introduction of sustainable houses in Angola showed that there is a lack of opportunity to purchase or rent homes (answer given by the 26 respondents), even though in Angola depending on the social status people start working quite early and after finishing their studies set to marry and build a family of their own, according to the answers given. On the other hand, in the villages, even with a project that gives the basic needs to the people, they might not react accordingly for there is a lack of knowledge and understanding regarding the topic, which would imply an educational process first.

In the next chapter (discussion) it will be discussed the results from both the online survey and the interviews in a more detailed way, proving even some of the answers that the researcher found to be more relevant, as well was a detailed discussion regarding the hypothesis presented previously.

10. DISCUSSION

The previous chapter, discussion, was developed according to the data collected for the research, the data, was detailed and presented. In this chapter, the findings are going to be discussed in more details and clarified whether the results were the ones desired or not.

To remind, the purpose of the study was to show if the cultural values of the Angolan population have an influence on green consumption in housing developments, and to understand to what extent this population consumes green products. The results indicate that Angolans do have the intention to consume green or eco-friendly products; that a project of green housing developments as much as it is needed it would entail educate the population about sustainability, and, that the culture might have an influence in the sustainable consumption.

10.1. Current problems and priorities in the country

Angola is a developing country, and as it was mentioned on the Literature Review, the country is very rich and has enormous prospects if handled in the right direction. During the data collection, in both the survey and the structured interviews, it came to light the prominent problems the country faces.

In order to develop any project related to sustainability, first certain problems need to be addressed, and one of the urgent problems that are detailed in the Findings Chapter on Table 2, are the recycling of garbage followed by the lack of basic needs in housing.

Those are both pressing issues which not only need to be solved for the wellbeing of the population, but also, because there is no sustainable housing development if the country does not work on recycling nor sustainable activities. Thus, showcasing the importance of the study itself.

In other hand, problems related to education and hunger were also mentioned (Table 2). Housing however, it is also a problem in the country, although it may come as no surprise due to the lack of basic needs.

All those problems, need to be made a priority. Creating facilities whose benefits are not only for the people living on them but also for the country is a positive outcome for marketing markets.

10.2. The Angolan Consumer

The findings of the research revealed that the Angolan consumer although having some knowledge related to sustainability and green consumption, do not seem to have the purchasing power to do so (Figure 5), however, from the numbers withdrawn it is shown that more than half of the people do have the intent of purchasing green products and given the opportunity would implement those within their homes, products such as solar panels, recycled water and other all previously mentioned.

Further on the results, the data gives details related to the possibility of the green housing development being created and the first impressions were positive, people would implement such project in the country and would be a part of it, however, most of the people surveyed feels that the project is more beneficial to the part of the population that has an increasing lack of basic needs.

Similar to other developing countries, the Angolan population has impediments when it comes to sustainable consumption. The data collected acts as a support to previous studies referred in the Literature Review, where it is stated that developing countries prefer to have their focus on the permanent problems that they face daily rather than impose the consumers to go green.

In one of the papers mentioned before, the researchers mentioned that environmental problems in developing countries may be more complicated than they appear (Diekmann & Franzen, 1999), when asked to point out their issues and

priorities it is not likely that the population will choose problems related to the environment which are supported by the results shown on the Findings.

The results from this study provide more insightful evidence to support the statement retrieved from another paper which states that the less awareness towards environmental actions the less the intention towards consumer behaviour there is (Samarasinghe, 2012). People who do not have knowledge about green consumption won't be interested in consuming green products because they do not have enough information to back their decision, and this fact is stated in Table 2 in the Findings where there is a percentage of people who stated education as one of the main problems the country faces.

10.3. Cultural influence in green consumption

Culture is very present in the Angolan community, from the foods people eat, to how they talk and act, music listened and art they perform or craft, all of which detailed previously on this study. Angola, being a Portuguese colony, has embodied a lot from the Portuguese culture, making the people of the country influenced culturally for many years now.

The results build on existing evidence that culture does play a role in influencing the consumer towards green products, (Samarasinghe, 2012), showed that there is a correlation between cultural values and environmental attitudes. Like him, (Gammoh, Okoroafo, & Koh, 2019) stated on their results that it is imperative to focus on the influences of culture on the individual level as well as the country level as both are pertinent for the positioning and communication strategies in the market.

During the collection of the data, people that answered the online survey stated both yes and no in equal measures related to the influence of culture (Figure 14) leaving a small part that did said that the population may be influenced culturally. In the meantime, from the structured interviews, the interviewees were

more inclined to state that culture does have influence in the consumption of green products.

Although there are many impediments in the housing department, where people do not have the means to purchase or rent houses it is important to point out that even if the people are able to find a place to live, the country does not pay too much attention to sustainability, because of the lack of information, products and the more pressing issues.

Using culture as influence on green consumption entails educating the population from the start, giving the people knowledge so that they can make the choice that better benefits them and the environment. For instance, in the previous chapter, it was stated according to the data collected that the elderly was treated with the utmost respect in the country. Elderlies are considered the pillars of the family, the fountain of knowledge, they are the ones who teach the family about history, culture, values; with that, if the elderly are taught about environmental issues and concerns, it is almost certain that they will teach the others and influence them to do the same.

In the Literature review, it was mentioned that in some parts of the country the people look up to 'sobas' who are the elderly responsible for the village. Those 'sobas' decide the future of their community, they influence the remaining others to exert their activities right. In order to implement projects related to green housing developments in those areas of the country, the sobas must be the first ones to be taught, they are the ones who will lead the rest of the community afterwards into learning and accepting change.

(Gammoh, Okoroafo, & Koh, 2019) stated that collectivism and the sense of community is positively related to environmental consciousness, this fact agrees with the previous statement.

10.4. Hypothesis

Research Question 2 -How does culture influence Angolans in their green consumption? Does culture have any influence in green consumption in Angola? Which is where the Hypothesis came from.

Understanding the influence culture can have to a country and its people is important for the implementation of marketing strategies (Gammoh, Okoroafo, & Koh, 2019). However, in developing countries the lack of awareness increases the negative significant relationship between cultural values and environmental attitudes (Samarasinghe, 2012) and (Diekmann & Franzen, 1999).

Hypothesis 1: Can the cultural values of a population/person influence on green consumption?

Hypothesis 2: Can the Angolan consumer behaviour be influenced to become green in the architectural sector?

-The null Hypothesis: The cultural values of a population/person can influence on green consumption. H0: $\mu=\mu 0$

-The alternative Hypothesis: The cultural values of a population/person cannot influence on green consumption. H1: $\mu\neq\mu 0$

In line with the hypotheses, this would imply that there is a 50/50 chance that the culture has an influence on green consumption. From the interviews (26 people) at least 13 need to state that the culture does have an influence on green consumption so that the null hypothesis can be accepted. In the meantime, from the online survey (175 people) at least 87 need to state the same fact, which means a 50% chance for the influence of culture. If the results show more than 50% people answering that there is no influence of culture in green consumption, then the null hypothesis will be rejected and the alternative hypothesis accepted.

Survey (175 people)	Interviews (26 people)
36% said Yes	84.6% said Yes
36% said No	15.3% said No
28% said Maybe	

Table 3: Percentage of people who believe or does not believe in the influence of culture.

From the online survey, as shown in Table 3 above, the results for both yes to the influence and no are the same with 36%, leaving the maybe with 28% which implies a possibility to be either yes or no. Not taking into account the 28% of people who answered maybe, the null hypothesis can be accepted, however, if it is considering that means that there is a 28% chance that those people choose no, rejecting the null hypothesis and accepting the alternative hypothesis instead. For that reason, the analysis for the survey can the considered inconclusive for there is a lack of data.

From the interviews the results were rather simpler and from that cluster alone, the null hypothesis can be accepted, as there was more than 50% of people (Table 3) acknowledging the influence of culture in green consumption. The questioned asked to obtain those number was -Do you think that it is important to respect the cultural values of the country in green consumption? Which lead to the next question if the interviewee answered yes. -How can culture influence in a positive way the consumption of green products? This question alone, suggests that the culture has a positive influence in the green consumption, leading to the assumption that the culture *does* have an influence in the first place. With that, one can argue that the hypotheses can be valid to some extent.

The results might suggest that culture has a positive influence on the Angolan consumer in order to implement sustainable or green products. However, based on the findings the data is not sufficient to positively state that. On that note,

similar studies already mentioned above, with more calculated results, show that cultural values do have a high correlation to environmental attitudes and behaviour.

11. CONCLUSION

For this last part, it is going to be stated whether the research questions have been answered, but also if the aim of the research study has been achieved. Furthermore, practical and managerial implications as well as limitations of the research will be presented.

The aim of the study is to show if the cultural values of the Angolan population have an influence on green consumption in housing developments, and to understand to what extent this population consumes green products.

Data collected showed influence among the Angolan population that indicated that the people do consider cultural values beforehand. The Angolan consumer although having the intent to persue a more sustainable course does not have the means to achieve the end. Problems regarding the daily lives of the population were brought up and taken into account during the findings and discussion of the study.

The results of the study on the consumers are intended to lead to increase in the sustainable or green consumption, introducing sustainable responses to some of the problems regarding the housing situation of the country therefore, increasing in sales, market share and brand satisfaction within the Angolan market.

When making purchase decisions the Angolan consumer does not take the sustainable or green solution because of the lack of economic power, the people do not have enough means to afford the products, however, a green housing development may be just the solution to incentivize the population into taking a more sustainable way of living.

11.1. Research Questions

Returning to the research questions, which are the aim of the research study:

Research Question 1 - How is the Angolan consumer behaviour towards green consumption? How much do Angolans know about green and sustainable consumption?

This research demonstrates that the Angolan consumer does have some understanding related to green consumption, although not very precise nor deep, the population does know to some extent what it entails. The common knowledge varies depending on social stability and literate degree. It is also clear that most of the population need to be lectured on sustainability and its advantages for the country, for instance, the recurring problem of the garbage and the heavy rains of the country, which could be addressed and treated in a more sustainable way.

On the other hand, the Angolan consumer does feel positive towards green consumption. It was shown on the data analysis that Angolans do have the intention to use green products and add them to their day to day lives, however, the cost that comes with the sustainable living is much higher to any other products, and that cost has the consumer concerned about not being able to purchase them.

Furthermore, the Angolan consumer, believes that they can help with the emerging problems within the country with sustainable consumption, and agree that the people who must benefit the most from sustainable solutions are the ones who lack the basic need at home, concluding that a green housing development could be well received in the country.

Research Question 2 -How does culture influence Angolans in their green consumption? Does culture have any influence in green consumption in Angola?

The discussion chapter addresses the answers to the second research question, the discovery was positive to the influence of the cultural values of the population towards green consumption, however it was also pointed that as much as the culture is very present and the population has shown a history of cultural influence, there are still some worries related to how this influence is transmitted to the population. The results shown confirm also the previous research made on the subject that were mentioned in the literature review.

This research clearly illustrates the extent of cultural influence on Angolans in their green consumption, but it also raises the question of the lack of understanding and needs the country itself has, making it clear that the population still needs to be educated properly on sustainability.

Based on these conclusions, researchers and marketeers should consider doing a more in-depth studies on developing countries and the influence of culture on their green consumption in housing developments.

12. LIMITATION AND FUTURE RESEARCH

In this final chapter of the study, the researcher is going to address the limitations and impediments that occur during the process of the study. The data collection difficulties and how it could've been done differently.

In addition, the researcher debates the future research that is necessary to have a much deeper analysis of the study and what it can provide to the market in question.

12.1. Limitations

The generalizability of the data collection, analysis and results was limited due to some difficulties that were faced, namely the small size of the sample (201 respondents) and the access to the respondents, seeing that the study was made in Angola and the researcher is in Portugal and couldn't dislocate to the country at hand due to Covid-19 pandemic to obtain more relevant data that generated a lack of reliability.

The study cannot be generalized to a larger population of the country even without concerning with the distance, the length of the study was too short to gather the exact amount and data that is necessaire to understand and implement a project of this magnitude. The sample gathered was mainly composed of schooled people from the ages 18 to 70 who had the possibility to answer the online survey, and from the structured interviews people were chosen by judgment. Although the results did give very interesting results, it would be even more interesting and fulfilling to have more unemployed, unschooled and less financial stable people observe and question.

Furthermore, because of the aim of the study, a more observational data collection should have been done, within the country itself and with people from the villages and the ones who would benefit more from a green housing development that offers basic needs.

12.2. Future Research

If the study was made again or more in depth, it would've been a combination of better qualitative research with quantitative one. There would be interviews not only with the consumer but with construction and architectural companies that propose eco-friendly products and solutions in order to understand which strategies are put in place according to each type of proposal.

Improving the general knowledge of sustainability would be another approach, create seminars, lessons, projects that incentivize the population to be greener, teach those who do not understand the meaning of sustainability, add value to already existing projects and promote national works to collect the garbage and recycle it, to recycle the water from the rain and so on.

Further research is needed to understand the durability and non-durability of eco-friendly products in comparison to the conventional solutions used at homes. Research on the sustainable solutions for water and energy instead of just relying on the same that has been used all these years. The people who don't have water or energy should be approached and educated on how these new solutions could help them improve their ways of living.

Although the cost for a project like this is high, the longtime results are worth the research and the implementations. This specific project is to help the construction and architectural sectors to invest in sustainable solution within the housing developments of countries such as Angola who are in a great need of action.

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15. APPENDIX

Survey questions:

1- Gender?

2- Choose your age group.

3- Select your level of scholarity.

4- Marital Status.

5- In which city do you live?

6- Employment situation.

7- What is your current living situation?

8- Select your annual income.

9- Do you have knowledge about green or eco-friendly products?

10- How did you get to know green or eco-friendly products?

11- The protection of the environment is important to me when purchasing my products.

12- I believe green products help to reduce the pollution (water, air, etc).

13- I believe green products can help solve problems related to nature and its resources.

14- Given the choice, I would choose green products over conventional products.

15- My interaction with people influences on my purchasing of green products.

16- My culture influences on my purchasing of green products.

17- It is my decision whether I buy or not green products.

18- I do not have enough financial power to purchase green products.

19- I am confident about the credibility of the labels for green products (e.g.: energy efficiency rating such as 5-star energy efficiency)

20- I intent to buy green products.

21- Given the opportunity I would implement green products in my house (solar panels, recycled water, alternative energy efficient appliances)

22- The well-being of the people around me is of great importance to me.

23- I have changed from products/brands for ecological reasons.

24- I have tried and have been trying to help solve the garbage situation.

25- I believe the garbage can be recycled and used to provide basic needs to people who need it.

26- Which solutions would you give to solve the garbage situation?

27- The rain has always been a great problem in the country. Do you believe the government and ONG's should be doing mor to help the people affected by it?

28- If you were given the opportunity to help implement this kind of project (green housing development) in the country, would you be inclined on doing so?

29- In the heart of the country there are several communes that, as we see in Luanda, lack drinking water and energy. Do you believe that people who are currently in these conditions should receive help from a project of this nature?

30- Do you believe that our culture would be an impediment in the implementation of sustainable products in houses around the country?

31- If you could solve an actual problem in the country, what would it be?

Structure interviews:

1- Name?

2- Age?

3- Marital status?

4- Level of education?

5- Profession?

6- Do you have any knowledge about ecological/sustainable products?

7- How did you find out about the products?

8- Do you use ecological/sustainable products?

9- Would you say that you are influenced by others regarding the use of these products?

10- Would you influence others to use green/sustainable products?

11- How do you define the Angolan culture?

12- Do you think culture has a positive or negative influence on the Angolan people?

13- Would you say that Angolans are a people easily influenced in cultural terms?

14- In Angolan culture, at how old is it considered normal for a person to become independent and leave their parents' home?

15- How would you say that the elderly is treated in Angolan families?

16- To what extent are you considered culturally influenced?

17- How old do you start working in Angola?

18- When is it considered appropriate to marry and have children in Angola?

19- In your opinion, what are the biggest impediments in Angola regarding housing?

20- Do you believe that in sustainable consumption it is necessary to respect the country's cultural values? Yes (next question) No (why?)

21- How can culture have a positive influence on sustainable consumption?

22- Villages in Angola are sustainable, however, they lack basic sanitation (water and energy). If a project that would involve building sustainable houses with basic sanitation were presented to the population of these villages, how do you think they would react? Due to the impact that culture has on their daily lives.

23- What is the best way to preserve our Angolan culture in housing developments?

24- If Angolans are easily influenced culturally in various aspects, would you say that they can also be easily influenced when it comes to sustainable housing?