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Assessing financing models to the goals of sustainable consumption

A research proposal, in partial fulfillment of the requirements of the degree of Masters of Business Administration

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Abstract

The interpretive, exploratory research reached conclusions from historical secondary data regarding financing models, namely interest-based and non-interest-based methods of financing with respect to the concept of sustainable consumption. The purpose of the research was to demonstrate that the way we manage our finances has an effect on the concept of sustainable consumption and its goals. The outcome of the research showed us that there is a definite linkage between the variables, especially in light of general systems theory, and concludes that the interest-based financing model is negatively aligned to the goal of sustainable consumption.

Keywords: sustainable consumption, usury, Islamic finance

Declaration

I declare that this research project is my own, unaided work. It is submitted in partial fulfilment of the requirements of the degree Master of Business Administration for the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

....   Date: 11 November 2009
Yusuf Aboobaker

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1. Introduction

For the purpose of introducing this research, consumption is the act of final purchase of goods or services that have exchangeable value (Mohr and Fourie, 2008).

The World Business Council for Sustainable Development in Sustainable Consumption: Facts and Trends (WBCSD, 2008), states that the drivers of consumption are population growth and the rise in global affluence with associated consumption culture among higher income groups.

Population growth

Figure 1 – Estimated world population, 1950-2000, and projections: 2000-2050; Source (UN 2004)

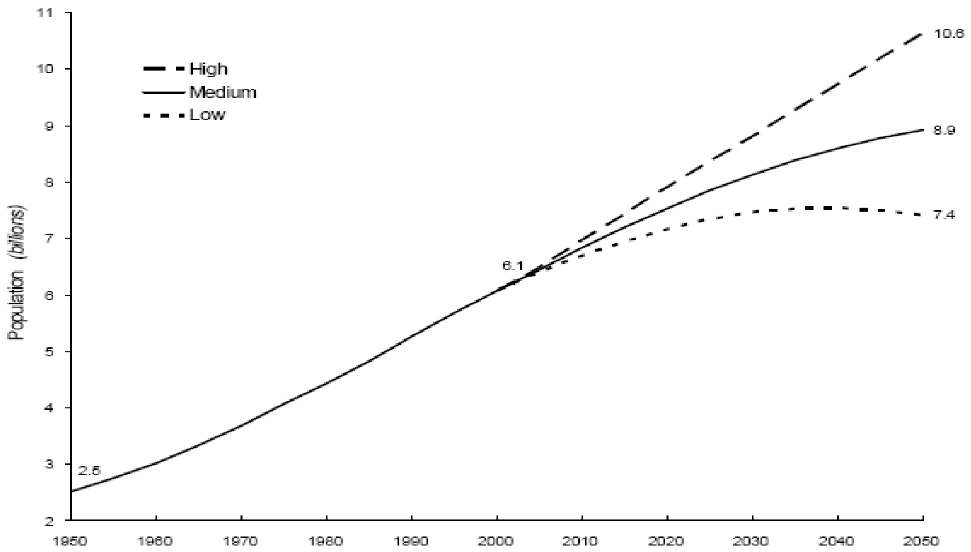


Figure 1 is representation of world population and how it is projected to grow based on low, medium and high forecasts. The medium forecast predicts 8.9

billion people by 2050; UN reports that this is driven largely by growth in developing nations.

The rise in global affluence

Currently, one of the most important measures of performance and indicators of a nation's affluence is the Gross Domestic Product (GDP). Mohr and Fourie (2008, p.57) define GDP as the: "Total value of all final goods and services produced within the boundaries of a country in a particular year." One way to calculate GDP is by using the expenditure approach, in which all spending on final goods and services by different participants is summed up. In the broadest sense, it therefore calculates how much a nation consumes. One can add all the nations' GDP figures and the result would yield world GDP.

PwC (2006) reported that annual world GDP growth for the period between 2007 and 2050 is 3.2%. In 2050, this means that the GDP will be approximately four times our current world GDP. The fastest growing nations are Brazil, Russia, India and China (BRIC).

Culture of consumption

Society has ascribed symbolic value to consumption beyond the obvious functional role of satisfying basic human needs (Jackson 2005). Jackson (2005, p.5) goes on to write that this "...symbolic role of consumption facilitates a range of complex, deeply engrained 'social conversations' about status, identity, social cohesion, group norms and personal and cultural meaning". It is this symbolic role together with the functional role that drives consumption. The roles will be explored later, but, suffice it to say, for introductory purposes, the consumption culture is widespread in higher income groups.

The manifestations of our consumption patterns are well known in the areas of the environment and climate change brought on about by excessive carbon emissions. The World Wildlife Fund (WWF), in The Living Planet Report 2008 (2008), regards global consumption patterns being unsustainable; that is to say, consumption patterns are already exceeding the earth's ability to replenish the resources that we consume and they quote this excess at 30%. If coupled with population growth and the rise in global affluence and the culture of consumption, the unsustainable trend is set to continue at an accelerated pace, and the human race will be at the precipice of disaster. On a more subtle level, but no less important, it seems that consumption patterns by higher income groups have an effect on society as a whole and the fabric that binds society is being unwoven. Crime is one of the manifestations of lack of social cohesion. The Human Sciences Research Council of South Africa (HSRC) reports in 2007 that a high GINI coefficient (a measure of income inequality) is a key indicator of crime, as relative deprivation incites people to acquire unlawfully (HSRC, 2007).

To avert the environment disaster and social meltdown, it is becoming apparent that efficiency gains and technological advances alone will not be sufficient to bring global consumption to a sustainable level (Cohen 2005). Changes to policy and changes to consumer lifestyles, including the ways in which consumers choose, acquire and use products and services is imperative. It is this process of choice, acquisition and usage on which this research will focus.

By dividing the GDP of the world by the population of the world, the result is GDP per capita which is an average of how much a person consumes. The Central Intelligence Agency (CIA) in their annual fact book (2008) (CIA 2008), estimate that GDP per capita is US$10,400. The CIA then went on to add up all the debt that has been financed by individuals, businesses and nations in the world. They took that figure, divided it by the population of the world, and the result is the average debt that has been financed, which is estimated at US$8,044 per person, or per capita. This means that, on average, approximately 77% of all consumption by one person is debt-financed.

From the above startling fact, many of the items consumed today are debt-financed, or, because of some aspect, consumers' lifestyle is debt-financed, which allows them to consume. If consumption is so heavily reliant on debt-financing, then a closer inspection of debt-financing is required.

Debt-financing, broadly, has two categories or models of operation, namely:

- interest-based financing; and
- non-interest based financing.

This research takes a closer look at two financing models based on these principals and the impact each has on sustainable consumption and its goals.

1.1. Problem Statement

Can the way we finance impact sustainable consumption?

1.2. Context

The research takes place in the aftermath of the sub-prime crisis, a crisis known for financial alchemy with roots in interest-based debt-financing. An aftermath that brings bailouts (more interest-based debt) and stricter laws and regulation imposed on financial institutions that grant credit to protect the consumer. An aftermath that sees some banks saved and the common layman left high and dry to face the repercussions of his ill-informed choice. An aftermath that speaks of growth (a euphemism for increased consumption) to repair the damaged caused by the financial sector.

In South Africa, the aftermath of the financial meltdown saw the labour movement, the face of social movement, and a call for economic policies to move to the socialist left in the hope of reducing business-friendly policies. A labour movement that also organises mass strike action for the purposes of:

- bringing equity to wages of workers and managers;
- preventing job losses; and
- demanding adequate service delivery by government.

1.3. Motivation

Every generation is faced with a challenge of their times. Our generation is faced with a challenge that is more profound; a challenge created by unintended consequences, a challenge that, if not risen to, may result in the demise of the human race. This challenge is sustainable consumption.
It requires going beyond looking to our government for solutions, it requires changes in all facets of our daily lives, whether it is at home with our families, how we commute or how we operate in our businesses, and it requires an immediate response.

1.3.1. Business

One of the fundamental principles underpinning King III, which is the corporate governance framework for South Africa, is sustainability. King III goes on to say that. “Sustainability is the primary moral and economic imperative for the 21st Century, and it is one of the most important sources of both opportunities and risks for businesses. Nature, society, and business are interconnected in complex ways that need to be understood by decision makers. Most importantly, current, incremental changes towards sustainability are not sufficient — we need a fundamental shift in the way companies and directors act and organise themselves” (IODSA 2009 p.12). Sustainability is the broad umbrella for all sustainable issues. For managers, it has become incumbent on them to understand sustainable issues in order to act or make decisions that maintain the corporation which they manage as good corporate citizens.

Under the expenditure methods of calculating GDP, one of the participants is businesses, or firms and as such their contribution to consumption should not be avoided. Technically, the firm spending is classified as ”capital formation investment”, but production and consumption are different sides of the same coin (Connolly and Prothero 2003). We cannot consume if we do not produce. One of the important tasks management must undertake is financing decisions in order to produce optimally. This research is trying to gain deeper understanding of the consequences of these decisions.

Of recent times, the financial crisis that has recently affected our economies is blamed on the financial institutions and in the manner in which they offer their financial products to consumers. The crisis once again has showed humanity that business and individuals should not be examined in isolation. In a globalised society, business mistakes take their toll on individuals and the world.

Perhaps this crisis can serve as an impetus to the ”fundamental shift” which King III speaks of.

1.3.2. Academic

Sustainable consumption is, and has been, elusive. The reason behind this elusiveness is what motivates this research. It is the sincere hope that this research is certain, certain by standing on the shoulders of giants that have come before.

Kilbourne et al (1997) posit that western societies are in a long-run decline and that the decline rests in the ideology of consumption, an ideology that is not fully understood, and Heiskanen and Pantzar (1997, p.435) go on to say “that no voluntary changes in consumption practices can be achieved if policymakers, business, and consumers alike lack an understanding of how and why we consume”. It is therefore the position of the researcher to offer with humility an attempt to understand elements of the ideology and functions, in order to contribute to the growing body of work of sustainable consumption. Cohen (Cohen 2008) comments that sustainable consumption ‘*problematique*’ has been constructed around carbon-related material flow debates and has tended to disregard the financial aspects or how finances flow in acquiring goods and services. This research takes focus on the financial aspects of which Cohen speaks.

Research on sustainable consumption requires a trans-discipline approach (Heiskanen and Pantzar 1997); the approach of the research will therefore have the lens of study from an economic, philosophical and financial perspective.

1.4. Objectives

The purpose of the research is as follows.

First, in general, it hopes to contribute to the body of academic literature which deals with sustainable consumption. In particular, the aim is to:

- Describe the impact of financing models on sustainable consumption and its goals.
- Show that the choice of financing models selected can affect sustainable consumption.
- The creation of a model to evaluate whether financing models are aligned to the goals of sustainable consumption and thus in itself acts as a contributor to sustainable consumption.

Secondly, it hopes to provide food for thought for the reader by describing the meaning of why things are the way they are by using paradigms in the hope that new perspectives on sustainable consumption and sustainability in general will be forged.

1.5. Scope

Sir Isaac Newton was reported to have said:

"To explain all nature is too difficult a task for any one man or even for any one age. 'Tis much better to do a little with certainty, and leave the rest for others that come after you, than to explain all things by conjecture without making sure of anything".

The"little" the research pursues is abstract and theoretical in nature and attempts to understand the finding and effects of financing models on the goals of sustainable consumption. The scope of data evaluated will be restricted to documentary sources.

2. Literature Review

"I Keep six honest serving-men: They taught me all I knew

Their names are What and Where and When And How and Why and Who.

I send them over land and sea; I send them east and west;

But after they have worked for me, I give them all a rest."

Rudyard Kipling 1865-1936

2.1. Introduction

The literature review puts the research project into context and shows in part how it fits in to the larger body of knowledge of sustainability. The review also introduces financing models. The purpose of the review was to identify knowledge gaps and demonstrate that the research problems stated in Chapter 4 are derived from the literature review.

The review adopted the modified process of Levy and Ellis (2006) for a literature review. The steps of the modified process are:

- searching;
- classifying;
- analysis; and
- synthesis.

The review was conducted in part by searching quality scholarly literature databases such as inter alia; Jstor, ABI/INFORM, ScienceDirect and Ebscohost. Keyword searches, along with extensive use of forward and backward author/references searches, were conducted. In an attempt to capture the broadest search, the researcher opted to use the metaphorical ”funnel approach” for sustainable consumption. Once gathered, the theoretical framework for ”classifying” the literature began with listing the articles by concepts, then ”analysis” took form in separating and prioritising ideas. The ”synthesis” of the ideas took form by generalising the ideas. The categories for generalisation is the basic interrogative questions of what, how, where, who, when and why. The reason for this generalisation approach is the lack of preciseness in definition of the underlying concept at hand, namely sustainable consumption.

With particular respect to financing models, the search process undertook the form within scholarly literature databases as well as online bookstores from countries where the financing models are most prevalent. The congruence in thought and opinion by all foreign authors made classification, analysis and synthesis a mere formality.

The presentation of the literature review begins by exploring key concepts. The key concepts punctuated the reviewed articles either implicitly or explicitly and serve not only as the basis for understanding the review, but in part acknowledge and agreement with the authors, that solutions can only be found with the understanding of these concepts.

2.2. Definitions of concepts

2.2.1. Paradigms and paradigm shifts

Kuhn (1962) popularised paradigms and paradigm shifts. He said that a paradigm is the currently accepted body of theory regarding a subject. Kuhn explains his ideas by using examples taken from the history of science. One example is Ptolemy's theory and Copernicus's revolutions.

Ptolemy's theory held that planets and the sun revolved around a stationary earth. When Copernicus came along and postulated that the sun is the centre of cosmos and the earth and the other planets revolve around the sun, his peers rejected this theory as it involved too much conjecture. However, later, when Galileo introduced his theories of motion, Copernicus's theory of earth rotating around the sun gained favour.

Kuhn (1962) suggested that as a paradigm is stretched to its limits, failure of the current paradigm to take into account observed phenomena accumulates as anomalies and if the challenging paradigm provides answers to those anomalies, it gains acceptance, it will replace the old paradigm, and a paradigm shift will have occurred.

Milbrath and Fisher (1984) extend Kuhn's paradigms to include dominant social paradigms (DSP). Milbrath defines it as "a society's dominant belief structure that organises the way people perceive and interpret the functioning of the world around them." (Milbrath and Fisher 1984, p.7) Milbrath and Fisher (1984) points out that it is not dominant in the statistical sense but the paradigm is held by dominant groups within society. As an example, the researcher offers this contextualised précis account of smoking:

In 1999, the government of South Africa amended The Tobacco Products Control Act of 1993 “to provide for the prohibition of advertising and promotion of tobacco products” (RSA 1999, p.3). This change in public policy was the culmination of many uncoordinated and sometimes coordinated efforts. For many years prior to 1999, smoking was in vogue to such an extent it was strange not to smoke, but, since 1927, when Kennaway and Cook discovered carcinogenic compounds in tar (Terre Blanche *et al.* 2008), and countless others subsequent to them provided the empirical evidence proving the dangers to one’s own health, this brought the beginning of the end to the paradigm.

2.2.2. Systems and systems & analytical thinking

Nicholas and Steyn define an A system as: “An organised or complex whole; an assemblage of parts interacting in a coordinated way” (Nicholas and Steyn 2008, p.33). An easy way to think about a system is to relate it to a football match. The parts could be the two teams, which in itself is a smaller system made up of team players, the referee, the linesmen, the ball and the football pitch. Each team organise or jockey for some position against the other team and within the team to interact with the ball to score goals. As observers to the football match, some fans might know all the rules, have history and profiles on the players, can marvel at the beauty of the game, while others do not follow and do not appreciate the beauty and see it as men running after a piece of leather and then there are some whose only interest is a particular player and all they do and how they do it.

Cilliers (1998) writes that a complex system is not constituted merely by the sum of its parts, but also by the intricate relationship between these parts. He offers a definition of complexity as when a system can offer more possibilities than can be actualised. He continues and reports that complex systems have a history which helps to make sense of the system. The football match would not be considered complex but the economy could be considered as complex.

Systems thinking is viewing the system as a whole; A systems thinkers understand that the system is made up of parts that can act independently but they always go back to see how the parts fit into the whole. The idea is that the parts can affect the whole and vice versa and the whole can be more than the sum of parts (holism).

Under system thinking, systems have a point or state when they are in balance— this is called Systems Equilibrium. This point of equilibrium can be described as a state that has attained internal stability and functioning. This state can evolve over a great period of time without fading away.

When classifying systems, often natural systems like the environment are placed in contrast to artificial systems, which are made by humans. Artificial systems can imitate natural systems without being natural themselves, as they can be described in terms of function, objective and adaptation (Simon 1996). Unless explicitly programmed, artificial systems lack such equilibrium-restoring capabilities while biological systems can restore to equilibrium (Faber, Jorna & Engelen, 2005). As an example, the economic system may be considered as a man-made system and therefore is classified as an artificial system.

Opposed to System thinking is Analytical thinking or reductionism. In this line of thought, analysis breaks down things into smaller parts to better understand the parts and the relations. While this helps us understand parts better, this type of thinking does not allow us to see the big picture. Its narrow focus allows us to manipulate parts, but it does not allow us to understand the implication of the whole system.

2.3. Sustainable consumption

The two concepts embedded in sustainable consumption are sustainability and consumption. The review has taken a closer look at each of the concepts and provides an account of the main themes before delving into the literature of sustainable consumption.

2.3.1. Consumption

As a way of introducing consumption, the research offered a definition that consumption is the final purchase of goods and services. While at some level this is true, consumption is said to have a deeper meaning than the final purchase of goods and services (Jackson 2003; Droge *et al.* 1993; Sanne 2002; Kletzan *et al.* 2006 & Mont 2004). The review has shown that the meaning comes from the roles consumption plays in the life of humans.

Firstly, consumption has a functional role; humans satisfy their basic needs in order to live and function properly. The themes that appear in the literature are the physiological theme and the utilitarian theme.

The physiological theme

The physiological aspects of consumption deal with consumption of food and water for the existence for life. Writers from Plato (*The Republic)* to Maslow (*Hierarchy of Needs)* speak of physiological needs, citing in one form or the other the undeniable instinct for survival.

The utilitarian theme

Some label this as the “quality of life” theme. The premise of this theme can be dated back to Aristotle (4BC), when he wrote of the ”good life”, using wealth to acquire products and services to live a life as those did in Rome, the centre of the Roman empire (Crespo 2008). Over the eras, this basic principle has been built upon and has shaped our thinking, none more so than by Adam Smith (1776) and later John Bentham (1787), when they surmised that a rational person, one with self-interest, maximizes utility (a measure of the relative satisfaction) from the consumption of goods and services.

Secondly, consumption has a symbolic role; humans have provided meaning to consumption beyond the fulfilment of basic needs. The key theme that has appeared in the literature is the identity theme.

The identity theme

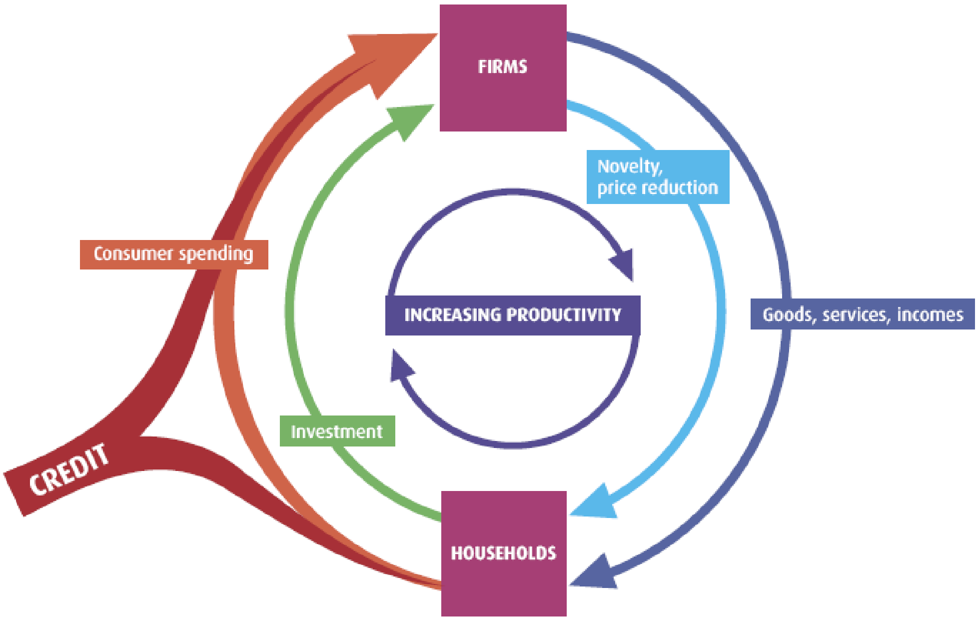
Consumption provides a personal (self symbolising) identity for the consumer (Wicklund & Gollwitzer 1981). Consumers value goods, not just for what they can do, but for what they represent (Jackson 2003). Consumption acts as a socially-recognised symbol which provides identity with a social group and a position within that group and it distinguishes boundaries with respect to other social groups by communicating allegiances to certain ideals and values

(Ledgerwood *et al.* 2007). An extension to the identity theme is the pursuit of the meaning theme where human consumption and patterns provide meaning to the life of a consumer (Jackson 2005).

The third role is that of consumption as imprisonment. This role is not so much consumer choice but consumers being locked in by structural forces (Sanne 2002) or by dominant social paradigms (Kilbourne 1997) to perpetuate consumption at the levels it occurs. This idea dates back to 1899 when Veblen wrote his institutional theory of consumption. Veblen is most notable for coining the phrase “conspicuous consumption”. His institutional theory says that individuals are not responsible for levels of consumption, but responsibility lies with institutions that created the demand for their products to be consumed (Scott 2007).

Institutions are one of the structural forces Sanne (2002) includes; another is economic policies of capitalism and regulatory/public policies of democracy. For example, at a macro level, capitalism is underscored by the paradigm of perpetual growth (Jackson 2009). Jackson (2009) offers a simplified picture of a capitalistic economy in Figure 2. In this figure, firms employ capital and labour, extracting as many hours as possible from each employee to produce goods, services and income for households. In capitalistic economic theory, work is a disutility, which makes the utility of consumption possible (refer above to utilitarian theme). Households offer up labour and capital in the form of investment for income return.

Figure 2 - The 'Engine of Growth' in Market Economies



Part of income is consumer spending returning revenues to firms, part invested in firms and part saved. Governments or its agents (not described in the figure) seeking GDP growth want to perpetuate the cycle, they introduces money or regulate interest rates to compensate for savings or to entice savers to spend. Business with its aim to profit maximise use marketing perpetuates the ideology of consumption (Kilbourne 1997); the result of this circular activity in effect is set up for growth for GDP and profit.

This intended or unintended co-opting of business, regulatory and social institutions has loosely created a perception that economic growth is a surrogate for quality of life. This "intuitionalism" of the tripartite locks consumers in; a behavioural pattern which is difficult to escape (Sanne 2002, Michaelis 2003).

2.3.2. Sustainability

In the 1970s, the deteriorating relationship between global ecology and the economic system, came on to policy agenda (Jackson 2003). The term sustainability was used to provide an anchor for handling the type of problems concerned in achieving economic development, while taking into account the environmental limits. Over the last four decades, inter alia, ecologists, sociologists, economists, marketers and biologists, worked on defining sustainability. However, each discipline had emphasis on their favourite perspective.

The core idea of sustainability and development was captured by the Brundtland Commission in 1987: “Development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (Gladwin, Kennelly & Krause 1995; Connolly & Prothero 2003). However, today as we write, there is still no universal definition of what sustainability is. Many institutions have offered working definitions with elements and themes overlapping other but no definitive definition can be agreed upon. Gladwin et al further expresses that definitional diversity of sustainability can be expected during the emergent phase of a paradigm shifting concept (Gladwin *et al.* 1995.) In 2005, (Faber *et al.* 2005) reported over 50 definitions and circumscriptions of sustainability that exist. Dyllik (2002) writes that the only thing that is certain about sustainability is that it has become a mantra for the 21st century.

As a means to understand sustainability, we use Faber's *et al.* (2005) explorations into the subject. Faber *et al.* (2005) has taken an interesting standpoint; he cites sustainability as a concept that cannot be rigidly defined. However, he provides a conceptual framework to understand sustainability. The framework consists of three aspects: an artefact, goal orientation and interaction.

Artefact

An artefact has been defined by Faber *et al.* (2005) as either physical or non-physical functioning as a component in a system which interacts with other artefacts which contribute directly or through components to a common system goal. The artefact in reference here is the focal point to which sustainability is attributed. For example: a car can be sustainable or an economic system can be sustainable. Faber *et al.* (2005) goes on to offer a broader reference: sustainability is the equilibrium between an artefact and its supporting system, where they interact with each other without mutual detrimental effects. Sustainability explicitly refers to this equilibrium.

Goal orientation

This refers to the position the definition takes to reach sustainability. Can it be inferred as absolute or relative? Faber cites that absolutism can pose a problem in the case of sustainability as nobody really knows what the real form of ultimate sustainability is.

Interaction

Interaction is a recognition that sustainability can be in either a static or dynamic way between the artefact and the supporting systems. Static, meaning only the artefact changes behaviour in reaction to changes, whereas dynamic means that both the artefact and supporting systems can change in response to stimuli. Faber suggests that interaction of sustainability is dynamic.

2.3.3. Interrogatory responses

2.3.3.1. What is sustainable consumption?

The term "sustainable consumption" can be dated to the earth summit held in Rio 1992. The concept, however, has been on policy agenda since The Club of Rome's Limits to Growth report in 1972 (Jackson 2003). While it is understood that the term "sustainable consumption" was only coined in the early 1990s and popularised later, sustainable development as a concept has been around since the 1970s. And since consumption and development are so closely interwoven, one cannot happen without the other (Fuchs & Lorek 2005). Key word or searches were performed on sustainable development and sustainability in general to find themes.

Throughout the past four decades, there has been no clear definition to what sustainable consumption is.

Table 1 below shows that the numerous writers that were reviewed have different definitions. Some writers even offer the numerous definitions they found.

Table 1- Sustainable consumption definitions

Author	Title
(Kilbourne 1997)	."The search, use and disposal of goods and services...should be reproducible for succeeding generations in all indefinite future periods."
(Connolly & Prothero 2003)	No definition offered, Consider the topic 'fuzzy'
(Jackson 2003)	This author provides numerous definitions: "The use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the lifecycle, so as not to jeopardize the needs of future generations". "The special focus of sustainable consumption is on the economic activity of choosing, using, and disposing of goods and services and how this can be changed to bring social and environmental benefit ". "Sustainable consumption means we have to use resources to meet our basic needs and not use resources in excess of what we need ". "Sustainable consumption is not about consuming less, it is about consuming differently, consuming efficiently, and having an improved quality of life ".

	"Sustainable consumption is consumption that supports the ability of current and future generations to meet their material and other needs, without causing irreversible damage to the environment or loss of function in natural systems". "Sustainable consumption is an umbrella term that brings together a number of key issues, such as meeting needs, enhancing quality of life, improving efficiency, minimising waste, taking a lifecycle perspective and taking into account the equity dimension; integrating these component parts in the central question of how to provide the same or better services to meet the basic requirements of life and the aspiration for improvement, for both current and future generations, while continually reducing environmental damage and the risk to human health" .
(Fuchs & Lorek, 2005)	". . . the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations."
(UN 2002)	No concise definition offered
(Sanne 2002)	No concise definition offered
(Michaelis 2003)	No concise definition offered
(Cohen 2005)	"Sustainable consumption has emerged over the past decade as a conceptual rubric for joining up various international efforts to foster consumer practices that

	respect ecological integrity and promote global equity."
(Kletzan,Koppl,Kratena,Schleicher & Wuger 2006)	No concise definition offered
(WBCSD 2008)	"The use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations."
(OECD 2008)	No concise definition offered
(Buenstorf & Cordes 2008)	"An aggregate pattern of economic activities that can be upheld over time without compromising the environment's capacity to support the needs of future generations."
(Cohen 2008)	No concise definition offered

The reason for providing all these definitions, along with what consumption and sustainability is, is to demonstrate that the concepts have deep meaning and to provide a simple definition to the concept undervalues the concept of sustainable consumption. It must be noted that, the even though definitions were offered by past writers, the rest of their writings included themes that did not come strongly across in their definitions.

Such themes are the social dimension, and linked to that is the space and time dimension. The social dimension takes form in an ethical and moral argument about consumption, or rather over- and under-consumption (Sanne 2002). The space dimension talks to north-south equity dimension of the way types of consumption take place and time is linked to intergenerational equity questions, i.e. meeting the consumption needs of present generations without compromising the ability of future generations to meet their needs (Rogers 2000).

While the concept has deep meaning, the review performed has demonstrated that key themes exists and overlap. These key themes are:

- An Economic model for consumption that enhances quality of life
- Consuming products and services that have optimal foot print on the ecological environment
- Consuming products and services that have the least detrimental consequences on society.
- Dimensions of space and time must be considered with respect to consumption

To extend on Faber's (2005) viewpoint on sustainability; the artefact is consumption, the goal orientation is relative, and the interaction is dynamic, therefore this research offers the deliberate systems thinking definition of sustainable consumption; the equilibrium between human consumption and the ecological system and the social system. Since human consumption is facilitated within the economic system, the equilibrium may be between the economic system, ecological system and the social system.

2.3.3.2. Who is responsible for sustainable consumption?

In the early 1990s, Gladwin argued that there was a conceptual division and disassociation between organisations and the remainder of the natural world. The reason for this argument is based on that management theory ranging from stakeholder theory to business ethics includes very little on the natural environment and lack biophysical foundations. They offer the word ”castration” to denote the level of interplay. The evidence the writers provides is concluding that the citing of sustainability within management theory articles is .003%. This was performed within abstracts of the articles during the period 1990 to 1994. They go on to argue that, while government agencies have written extensively on the matter, it has not filtered into management theory. They argue that it must belong in management theory and the role of business for achieving sustainability is vital.

The researcher notes from these early days of organisational science articles, sustainable and sustainable consumption articles now manifest within particular disciplines with the broader organisational science. Marketing and consumer journals contain vast material on the subject in the broadest sense. At its essence, marketers view the promotion of high levels of consumption as counter sustainable (Kilbourne 1997). Technology and operation management-related journals also have regular sustainability-related articles. Their focus is on optimal production.

The growing body of knowledge with the business fraternity indicates that academics and practitioners believe that business has a role to play in sustainable consumption.

The Organisation of Economic Cooperation and Development (OECD), having 30 member governments, represents the economic interest of their member governments. The OECD reports that policy making of governments generally focus on sustainable production which enforces stemming the environmental impacts of unsustainable industrial production practices, primarily through regulations and taxes. They go on to say that putting policies in place to promote sustainable consumption is just as important to limit environment degradation. They comment that polices will have an effect on social externalities and promote a market place for sustainable products (OECD 2008).

In 2002, South Africa, under the auspices of the United Nations (UN), hosted the world summit of sustainable development, at which 194 states and regional economic integration organizations were represented. The unprecedented attendance is a clear demonstration that sustainability is a real concern for the governments of the world. The essence of the summit was to reaffirm the nations of the world's commitment to sustainability and to commit to an equitable and caring global society (UN, 2002).

Krause further reports and shares the opinion of the UN that it is for governments to create the right conditions in which consumers are encouraged to shift towards sustainable consumption (Krause 2009).

What becomes clear from the reviews undertaken is that sustainable consumption attempts to firmly place the responsibility of sustainability on the consumer (Fuchs & Lorek 2005), by modifying consumer behaviour. Individuals can play an essential role in any transition toward a more sustainable economy (Buenstorf & Cordes 2008). However, while sustainable consumption is the demand side management of a problem, recycling, efficient usage, eco-friendly products, shared services and conservation measures are all helping to achieve the goals of sustainable consumption, but Heiskanen and Pantzar regard the efforts as “insufficient ...and do not provide much basis for drastically reducing the resource intensity of western lifestyles” (Heiskanen and Pantzar 1997, p.410).

The review also has revealed that, while sustainable consumption rests with individuals, responsibility must be at three levels: government, business and individuals. Their responsibility is because of the power they wield; government through policies, business through corporate governance and individuals through choice. The reviews also revealed that, while many authors provide a point of view from a particular actor’s perspective, it becomes clear that the solution requires changes by governments, businesses and individuals.

2.3.3.3. How can sustainable consumption be attained?

While each actor has different power bases and leverage to act to attain sustainable consumption, an underlying theme runs through the literature which is, the actors needing to make paradigm shifts.

For governments, it is the shift that economic growth does not equal quality of life; economic growth is but a mere factor among several for quality of life (Jackson 2009; Kilbourne 1997).

For businesses, the shift would be to acknowledge that profit for shareholders at the expense of others and the environment is not the ultimate goal of business (Gladwin *et al.* 1995). However, government polices seem to reinforce profits as the government is bankrolled by taxation based on income.

For individuals, it is the shift that says more and more consumption of products and services does not translate into well-being or happiness (Jackson 2005). Costanza (2008) agrees with Jackson (2005) when he comments that both ancient wisdom and new psychological research tell us that material consumption beyond real need can actually reduce well-being. However governments, businesses reinforce the paradigm.

Notwithstanding the paradigms shifts needed, another theme that emerged is that government, business and individuals need to work together to achieve sustainable consumption. There is recognition that a systems approach is needed (Heiskanen & Pantzar 1997; Gladwin *et al.* 1995; Sanne 2002; Michaelis 2003).

What can governments do?

Many writers suggest that government must change policies to facilitate or enforce sustainable consumption. Most of the policy change proposals affect, in particular, business. Such as policies surrounding production standards especially carbon emissions; however, very little of enforceable policy debates seems to be around the all the aspects of sustainable consumption.

Some macro policies for debate, that have emerged are;

- The millennium targets; Carbon taxes and key macroeconomic indicators and.
- On an abstract level, the notion of justice and social contracts

While debate is healthy, ecological and social limitations are reaching proximity. Cohen (2008) writes that at least four factors are responsible for the lack of action on behalf of governments:

- Governments do not want to abandon the goal of continuous economic growth; growth is seen as a surrogate for quality of life.
- Sustainable consumption experts are in debate as to whether the aim of sustainable consumption is to change quality of consumption or reduce quantity of consumption.
- Many experts view sustainable consumption not as overconsumption but also as under-consumption. If this is the case, then redistribution must take place to ensure that the greater majority of the world consume at an adequate basic level.
- No scientific evidence to suggest what the correct sustainable level is.

What can businesses do?

As far back as 1982, Donaldson (as cited in White 1993) calls for a social contract, a contract, not like a Rawlism contract between government and its constituents, but between business and society. His reasons, while not directly aimed at sustainable consumption, still make a lot of sense with regards to the position of business in society or a social system. He postulates that business exists only through the cooperation and commitment of society; it draws employees from society; sells its goods to society and receives status from society. He suggests that this spells an implied agreement between a business and society, because the business holds responsible to society conditions for its existence. So therefore society must hold the business responsible. This is the basis for Donaldson's social contract. Donaldson is very careful to state that "society" is individual members of society and not an aggregate with or without a proxy.

At the business level, some international government agencies seem to be leading the way to providing policies and recommendations for business.

In 2002, the World Summit for Sustainable Development (WSSD), held in Johannesburg, submitted that all programs focussing on sustainable consumption and production should rely on a science-based approach of a Life Cycle Assessment (LCA) (Hertwich 2005). LCA is a tool to assess the environmental ,economic and social impact of product systems and services, accounting for the emissions and resource uses during the production, distribution, use, and disposal of a product (Hertwich 2005; UN, 2002).

The WBCSD writes that the role of business is to put sustainable consumption into the mainstream. The approach offered by them is grouped into three broad categories.

- Innovation
    - business processes for the development of new and improved products, services and business are shifting to incorporate provisions for maximizing societal value and minimizing environmental cost(WBCSD 2008, p.6).
- Choice influencing
    - the use of marketing and awareness-raising campaigns to enable and encourage consumers to choose and use products more efficiently and sustainably(WBCSD 2008, p.6).
- Choice editing
    - the removal of “unsustainable” products and services from the marketplace in partnership with other actors in society (WBCSD 2008, p.6).

OECD 2008 released policies for debate aimed at business. They include:

- labelling standards for products;
- taxation and subsidies for producers; and
- communication and education by business to consumers.

What can individuals do?

Sustainable consumption from the outset was aimed at individuals, for the simple reason that the most obvious consumption occurs at the individual level. The review has revealed that there two broad themes of how individuals can attain sustainable consumption.

- The reduction theme

  In the simplest of terms, this means consuming less; however, there are a few ways that have been identified namely:

  - Sharing and pooling of resources, for example ”car sharing, communal washing centres and tool sharing schemes, indicate that more sustainable patterns of consumption may be found for other household functions” (Mont 2004, p. 135).
  - Waste recycling, recycling by helping in reducing strain on the environment (Connolly & Prothero 2003). Findings are that recycling is seen as a environmental concern rather than a consumption issue and has limited impact on reducing consumption.
  - Consume less, live a more minimalistic lifestyle,” want not, waste not”.

- The substitute theme

  This theme suggest that products and services that have to bought must be produced that adhere to a value system that includes the goals of sustainable consumption. By the day, there are more and more green consumers, individuals are choosing to consume products which are more environmentally friendly and individuals have begun to ask questions of source and production methods (Evans & Abrahamse 2009).

The different actors can play roles in attaining sustainability. Much of the review has revealed definitive initiatives that can bring humanity close to ecological equilibrium. However, social system equilibrium and economic system equilibrium are brushed with a more general stroke under labels of macroeconomics.

While not included as a theme (as the review reveals a very limited number of writers who comment on this subject), Cohen takes a very interesting point; the writer shows a link between consumer credit and sustainable consumption (Cohen 2005). The same writer continues this train of thought and gives this point from a macro economic perspective. The basic premise of the argument is that consumption has been allowed to occur at the rates it does because of credit. Cohen goes on further to incite new research in this area (Cohen 2008).

2.3.3.4. Where should sustainable consumption take place?

The main themes that emerge to where sustainable consumption should take place are 1) western lifestyle countries or 2) the whole world.
Authors who write that western lifestyle countries should aim for sustainable consumption say this because these countries' consumptions patterns are causing the degradation to the environment (Kilbourne 1997 & Heiskanen & Pantzar 1997). However, more recently, authors are writing more and more

that all countries must be involved in attaining sustainable consumption. Their reasoning is that, firstly, resources for production actually originate from places that may not necessarily consume at unsustainable rates but resource exploitation (worker and environment) usually occurs and, secondly, when the definition of sustainable consumption is meant to include under-consumption, then the aim of sustainable consumption must occur in non-western lifestyle areas. The more general acceptance seems to be a worldwide adoption of sustainable consumption as the effects manifest in the environment and to a lesser degree society, which is seen on a global stage and not localised.

2.3.3.5. When should sustainable consumption happen?

The short answer to this question is that nobody really knows. Most literature, if not all, reviewed takes the position that sustainable consumption must begin immediately as the effects are dire. From the 1970s, when sustainability was in early conceptual form, academics from natural sciences-related disciplines, to the contemporary popularised US presidential candidate Al Gore in his climate change documentary *An Inconvenient Truth*, have been punting immediate action.

2.3.3.6. Why is sustainable consumption important?

While the effects of unsustainable consumption are seen clearly on the environment, all the information and data about global warming, polar cap sizes, deforestation and carbon dioxide indicate why sustainable consumption is important for the human race to exist, but on a more subtle level the moral and ethical undertones that exist in the literature suggest sustainable consumption is a way to show humanity how to co-exist, not only inter-species but also intra-species.

Why is it important for individuals?

For the individual, self-preservation is instinctive. If our consumption patterns threaten our existence, then self-preservation is paramount.

While at an individual level this may make a lot of sense and is easy to understand and should be enough reason to why sustainable consumption is important, man however has, through his intelligence, created institutions or entities to manage his affairs. These entities have, some may say, a life of their own and it is for this reason the research now takes a closer look at the purpose of two social institutions that impact our lives daily, namely government and business. The reason for this section is because it will show that the reason for existence of these social institutions is not contrary to sustainable consumption or its implicit goals, even though today the purpose of these institutions in the minds of many may be murky.

Why is it important to governments?

The study of political philosophy shows that much study on contemporary governments is based on the works and interpretations of the ancient teachings of Greek philosophy and the period of European enlightenment.

Arguably, the most notable Greek philosopher, Aristotle, wrote on the subject by understanding that the intention of his work was to find what is ”good” and in finding what was “good” he could make himself and others ”good”. He postulated that the fundamental essence of mankind and the purpose of life is to do ”good” so that the end of life is ”good”. However, he recognised that man is ruled by desires and needs rather than reason and he therefore argued that laws are needed in order guide people to do ”good”. The ”good” life can be achieved through political partnership, as some things can only be achieved communally which help secure the necessities of life, as government is an association of kinship groups which can come together to establish a constitution that would allow people to live the best possible life. Aristotle wrote profoundly on what a ”good” life is, and he wrote on this subject in context of a natural (*physics*) order and a man-made (*nomos*) order and the good of man is in the exercise of virtuous activities of the soul with excellence that are in accordance with that order (Thompson 2008). Thompson (2008) suggests that government must ensure the “good life” by adhering to natural and then man-made order.

European enlightenment in the eighteenth and nineteenth centuries saw the rise of the individual; this was aided by the economic transformation of that period. Jeremy Bentham brought to the fore the concept of utilitarianism, where the basic idea is to act in a way which offers the greatest benefit to the greatest number of people. The economic theory of utility popularised by Adam Smith coincided with the theory of utilitarianism (Thompson 2008). This mode of thinking coupled with the foundational work of Aristotle and peers has created the modern form of government, where people expect freedom, justice, equality of opportunity, rights and fairness and the responsible government must negotiate between these principles and get them entrenched in their social contract for maximum benefit to society.

In the period of ancient Greece, the purpose of government was to enable the purpose of life which was a ”good” life, Today, the utilitarian emphasis on the purpose of government has shifted to what people want, and not their purpose.

Either way, the review shows that governments are there to serve society and if society is demanding sustainable consumption, then governments must try to serve the needs of society.

Why is it important for business?

Throughout history, the role and boundaries of business in society within the ecological system has been much debated (Warhurst 2005). Aristotle wrote of fairness and courage, and that profit was a means to an end and not the end itself (Spiller 2000). Fairness is required with society and the environment and courage indicated a type of response needed to conduct business. While these foundations were laid, millennia have shown us that business has built a reputation of a selfish and narrow instrument, and business people unashamedly feel no obligation to deny that their motives are selfish and narrow and the assertion that their purpose as a business is defined by profits, that their societal and environmental responsibilities do not extend beyond what the law and regulation impose, and that their duty to society and the environment are essentially incidental and their primary duty to shareholders (Kay 1998) . A well-known exponent of this view is Milton Friedman, when he wrote in 1970 an article titled; *The social responsibility of business is to increase its profits.*

While this view is prevalent there has always been the inclusive broader view. The King report on corporate governance, a report respected worldwide, recently released a third edition reviving this broader view where within it is stressed that the role of business is more than just the bottom line. In previous editions, they espoused a triple bottom line, and in the latest edition, they espouse sustainability as imperative.

From this interrogative question, the research has demonstrated that sustainable consumption is important for the;

- Individual, for self preservation;
- Government, to serve society
- Business, to serve society.

2.4. Financing models

2.4.1. Introduction

The Oxford dictionary defines finance as a noun; “the management of large amount of money”, and as a verb; “to provide funding for”. Within this context the verb makes most appropriate sense. The research is concerned with the model or the different ways which funding can be provided.

As of way of introducing the models in chapter one, the research put forward interest-based financing and non-interest based financing. The terms used for introduction was used to gain the understanding of the reader without a great deal of intimate knowledge about the models. Interest-based financing has a long and chequered history. It roots are in the annals of recorded history under the concept of usury, while non-interest financing is being popularised by Islamic financing. Therefore the two models for closer inspection are:

- usurious financing; and
- Islamic financing.

The research needs to be clear; one of the reasons for the research has opted to look at these models is because of the richness of data found in literature. It was not the intention of the researcher to misguide within the introduction; it was merely to provide initial understanding to frame the topic until the appropriate time for elaboration.

Some of the other reasons for choosing these models are because;

- usurious financing model is pervasive; and
- the use of the Islamic financing model is on the ascendant and, indeed, is one of the fastest-growing segments of the global finance industry (Gait & Worthington 2007). The Guardian newspaper of the United Kingdom reported that the Islamic financial sector is growing at a minimum of 15% per annum and assets held in the sector value almost one trillion US dollars (Guardian 2009).

2.4.2. Usurious financing interrogatory responses

2.4.2.1. What is usurious financing?

Persky writes that in modern times the definition of interest—the rental price of money— has etymology in usury, but usury and its definition is ambiguous (Persky 2007), and Mews and Abraham go on to say that the contemporary meaning of usury is concern with charging excessive rates of interest (Mews & Abraham 2007). However, looking through the ages, Persky writes that Canon law describes usury as a loan payment in excess of the principal amount (Persky 2007). And it was only when European enlightenment had the meaning of usury that it evolved into the general contemporary meaning as we know it today.

For the purpose of this research, we shall use the canon law interpretation whereby making usurious financing a loan where repayments exceed the principal amount.

2.4.2.2. When has usurious financing been used?

The review has revealed that throughout the recorded history of western civilization, usury has been rooted in the economic activity of mankind. Below are some selected accounts of the usage.

Mews and Abraham provide evidence of interest charged on loans of silver and gold in the ancient world as early as 5000 years ago (Mews & Abraham 2006). In the 4th century BC Aristotle comments on the unnatural acquisition of wealth (chrematistics) in the form of '*tokos*'; which has been translated as usury (Screpanti & Zamagni; Field & Kirby, 2005).

The famous biblical story in Matthew 21:12,13, set in the time when the Roman Empire governed Jerusalem, tells of an angry Jesus overturning/overthrowing (depending on the version) the tables of money lenders. This too is an indication of the pervasive nature of usury 2000 years ago. Lewison (1999) writes that in the third century CE, the Council of Nicaea (325 AD) allowed usury outside of the clergy. 1200 years later the base reasons for the protestant reformation was that the Catholic Church condemned usury, only to condone usury a hundred years later themselves in England. Rogers (2000) chronicles this history of usury in England in the 16th century.

Medieval Italy saw the creation of the bond market whereby governments, municipalities and principalities used bonds to finance their conquests (Ferguson 2008). The bond market created a market place where the public could loan money to governments; these bonds were usurious. With each conquest, governments become more and more entrenched in usury.

By the late 18th century, the accepted usefulness and accepted legitimacy of usury was even asserted by Adam Smith, the philosopher (Persky 2007). Smith called for a cap on usury; he did not want free markets to dictate out of fear of unscrupulous lenders (by now the word usury has come to mean charging of excessive interest).

Today, most governments around the world have usury laws dictating the cap on interest rates. Monetary policy as we know it uses the interest rate to control spending/consumption. The assumption is that society at large engages in usury.

The review has shown that usury was in practice at least 4000 years before the Christian era. The Christian era saw and still sees the practice of usury as taboo but when European enlightenment occurred and the dawn of industrialisation occurred, usury become mainstream and generally accepted.

2.4.2.3. Why has usurious financing been used?

Each nation can recount why usurious financing has been used but this research has focussed on the literature of European history. The reason for this choice is that contemporary states throughout European colonialism or imperialism have adopted and share values and practices. While there some very good historical documents (Munro 2003 and Tawney,1926) that go into depth on when usurious financing began, the research has tried to establish from these documents why usurious financing was adopted in the first place.

While the research reveals that usury has been used for over 4000 years, the account of this research will begin in medieval Europe in the 12th century. At that time, Christianity was the predominant religion and condemned usury. It was also a time that a commercial revolution was taking place. Thomas Aquinas was a theologian of this time and much of his writings concerned the issue of the commercial revolution; one such issue being usury. Aquinas' work was based on the Biblical scriptures but also on the secular work of Aristotle, Aquinas conclusions were that usury was illicit (Munro 2003). The Roman law of Italy of that time reflected this and also recorded in specific detail three cases regarding a lender to receiving compensation for damages that occurred after the loan contract was issued, Munro (2003) writes, it was specified as this was used as a loophole.

These three cases (Munro 2003) are the basis for what some writers call ”just compensation”.

- *poena detentori or mora*: a penalty imposed for late repayment of the principal sum, as specified by the maturity date.
- *damnum emergens*: damages or compensation for the loss that the lender incurred after the loan contact had started; for example, if an emergency happened after the loan was made and the lender now did not have the money which was lent to the borrower.
- *lucrum cessans*: forgone potential gains from an alternative, licit investment in commerce or industry. The lender’s opportunity cost was called *interesse.* The origin of the word interest is the Latin *interesse, “be important”.*

During the next 100 years or so, many of the governments or municipalities in Italy were engaged in war over resources (Ferguson 2008). These wars were expensive and the funding of these states from taxes and rent was not enough. The heads of state, along with lending families, schemed up a public debt fund (Ferguson 2008). This public debt fund was presented as compulsory to citizens, the citizen did have a choice; however, it was either loan the money to the state or pay higher taxes. Citizens opted for the debt fund as it paid ‘*interesse*’ (Munro 2003).

In that time, many jurists wrote about this lack of choice and therefore deemed the opportunity cost in the form of '*interesse*' licit (Munro 2003). There was a camp, however, that still deemed it usurious; however, this changed. In time, these compulsory loans became tradable and a secondary market was created. Jurists then wrote that the second buyer, even though he was not compelled to buy the loan certificate, the purchases of these loan certificates was not usurious as it was not the original debt and had become a contract of purchase sale where the buyer is allowed to earn future income from the state (Munro 2003). By the turn of the 15th century, practically all municipalities in Italy practiced the public debt fund which now became a permanent feature of the state (Munro 2003).

While forced lending to the state suggests why usurious financing was used in Italy, Munro (2003) explains that in the rest of Europe, while the reasons for adoption was for public finance , the instrument used was called '*rente'*. Munro writes that the closest word in the English language is "annuity". '*Rente'* took the form of asset holder, in this case, municipalities selling the right to earn rent, to a buyer, while the seller (in this case the municipality) maintains ownership of the asset. The buyer therefore purchased future income of rent for a predetermined amount today and receives this rent usually until their death. Pope Innocent IV in 1251 declared this not usurious, as long as the payments were based on "real" assets (Munro 2003).

Over the next two hundred years theologians debated the nature of this '*rente'* contract and the question of redemption kept cropping up. They recorded that if the buyer can demand his predetermined amount back then '*rente'* became merely a sinful device to cloak a usurious loan (Munro 2003). However, the seller has the right to redeem the '*rente*', but he must return to the buyer the original predetermined amount. Munro (2003) writes that by 1451 three Papal bulls investigated the subject of '*rente'* again and concluded with Pope Innocent IV but added that, due to the speculation over how much '*rente'* could be charged, it was limited to not more than 10% (Munro 2003). While this helped defuse debates, the issue of the buyer redeeming his original predetermined amount was outstanding. To overcome this, a secondary market had appeared (Munro 2003). Buyers now had a way for them to redeem the original predetermined amount but it was discounted by the secondary market (Munro 2003). The argument in Italy were the secondary is buying a purchase sale agreement and therefore it cannot be considered as usurious was also used in the secondary markets in the rest of Europe justify the exchange as non-usurious.

Before the 16th century, religion was the yardstick of morality (Zaman 2008). However by the end of the commercial revolution, where individual competition swept forward by an immense expansion of commerce and finance (Tawney 1926), More and more people questioned adherence to the church, especially on the question of usury, as the results of economic progress could be seen. New intellectuals searched for alternatives to religion for the basis of man's progress. The sophistry of the church could no longer be borne and as Tawney states: "Usury, long a grievance with the craftsman and peasant, had now become a battle cry" (Tawney 1926, p.81). This battle cry, along with new intellectuals, saw the transition to an independent and scientific-based method of thinking as fuel to the answers of societal problems.

The following quote by Cassel sums up the period thinking on usury;

> *The secular power which at the beginning of Modern Times succeeded the ecclesiastical, soon found it necessary to replace the old prohibition by a regulation of the rate of interest. As the old distinctions between different kinds of interest could no longer be maintained, it became necessary to adopt another line of separation between what should be regarded as right and what was wrong in loan-contracts. And it was very natural to choose a certain fixed rate of interest as drawing this line.* (Cassel 1903, p.6).

This separation of between right and wrong as decided by Cassel was clearly illustrated by the interlude between Adam Smith and Jeremy Bentham. Smith, father of modern economics, spoke, in 1776, of ”gross usury” in his *An Inquiry into the Nature and Causes of the Wealth of Nations* (ch. 4); he used the phrase in connection with loans for consumption. It suggests that he considered loans used for ”capital or productive stock” as ”moral” usury, as it was productive and increases the wealth of a nation. However, he was fearful partly because lenders for consumption might abuse their position and therefore suggested a usury ceiling of 6% (Smith 1776), clearly indicating that it was the role of government to seek the greater good.

In response to Smith, Bentham wrote a series of letters called: *In Defence of Usury* suggesting *inter alia* that the ceiling which Smith requested would actually harm the consumers Smith was trying to protect, as no lender would make loans based on the legal rates and thus force the consumer to go outside the law where there is no protection for him, if he, the consumer, was acting within the law (Bentham 1787). By 1854, usury ceiling laws controlling the rate of interest was abolished in England (Persky 2007).

As time went by, and at the turn of the 20th century, ”interest” had come to mean the price given for the use of capital (Cassel 1903) which, as the researcher understands it, is still sanctioned as non-usurious by the church if the ”capital” meant ”real” property (and by virtue of Smith’s comment on gross usury). However, the concept of ”capital” was of much debated as reviewed in Fisher (1896), where he provides a list of definitions or nature of capital as given by leading economic scholars. (See appendix 1.) To the researcher, it seems the point of debate with regard to usury had shifted to the question of whether money can been seen as capital. The example used in Fisher concerned a merchant boat and a private yacht. Initially, he pointed out that the merchant boat represents capital, as it engages in production, and the yacht does not represent capital, but then he went on to question that, if the yacht is used to ferry people to and fro from work, can it then be considered as “capital”.

John Maynard Keynes undoubtedly the most influential economist of the 20th century (Mohr 2008), offers in 1936, his General theory of employment, interest and money as the first systematic macroeconomic text (Pressman 2006). While his work is most remembered for showing how government can be used to regulate markets via demonstrating economic activity through aggregate demand, the researcher intention is to highlight Keynes position with regard to usury. Keynes considered usury as necessary, the rate of interest helps control inflation through money supply, by manipulating the amount of savings and investments that occurs, which in turn would regulate the economy (Keynes 1936).

Notwithstanding all that has been reported, the researcher submits that two areas of the historical debate have been greatly used to the advantage of protagonists of usury namely:

- *'Interesse'* being condoned, in spite of the lack of volition at that forced lending era.
- *'Rente'* being used on non-real property.
- The blurring of the concepts '*interesse*' and '*rente*' under one banner, namely usury.
- The blurring of type Loans for production or consumption
- The confusion over what capital is.

As a summary for clarity to the reader, the researcher offers the following reasons why usury was used:

- To fund public debt (Munro2003).
- To increase trade (Cassel 1903).
- Competitiveness of a nation (Kish-Goodling 1998; Smith 1776).
- Elimination of seed funding from non-Christian faiths (Kish-Goodling 1998; Sen 1993).
- Help regulate the economy(Keynes 1936)

2.4.2.4. How has usurious financing been used?

While historical accounts are fruitful for understanding the questions, what, why and when, the research on the questions how, where and who will focus more on the contemporary setting.

The debate at the beginning of the 20th century surrounding capital has subsided, because, in practice, money is seen to be part of capital, while economists may argue that it is a special kind of capital, financial capital, as it is not a factor of production in the classical sense.
It is common knowledge that the majority of banks in existence offer usurious financing. However, given what the research has revealed about the historical details around usury, it seems clear that the products which are clearly usurious are products that do concern themselves with what the borrower is going to purchase. That is to say, the lending is not linked to real asset or a not used in production or is for consumption. Some examples are:

- credit cards;
- personal loans(e.g. pay day loans and payslip loans);
- overdrafts;
- micro finance;
- lending products that include interest on arrears(defaulted repayments);
- access bonds(home loans where repayments can be accessed) and second bonds;
- Government and corporate bonds; and
- Government deficit funding.

Despite the taint that all contemporary finances may have with regard to the canon law interpretation of usury, the above listed product can be categorised as usurious.

Contemporary secular usury laws, generally are concern with rate ceiling, which are enforceable in most countries and serve as reported by Blitz and Long:

- protecting a small borrower;
- curtailing unfair practices amongst financial institutions; and
- regulating the allocation of resources (Blitz & Long 1965).

Conventional financial institutions engage in marketing these products to consumers and business alike under campaigns of building business or life style attainment.

2.4.2.5. Where has usurious financing been used?

Today, usurious financing is pervasive and research has revealed that only two countries of the world have not based their economic systems on usury namely:

- Iran; and
- Sudan (Qorchi 2005).

Since financing is a choice, some individuals and businesses alike have chosen not to engage in usurious financing and this trend is on the increase, as alternatives have appeared.

2.4.2.6. Who has usurious financing been used by?

Lewison (1999) writes that modern usurious financing products is used by the financially disenfranchised. He argues that it is these financially disenfranchised who have to resort to illegal means to acquire credit. However, his view is that usury merely means excessive rates but the researcher argues, based on this research, that people in their masses engage in usurious financing and it is only the financially disenfranchised who do not have access to credit are the groups not using usurious products in their numbers.

2.4.3. Islamic financing interrogatory responses

2.4.3.1. What is Islamic financing?

Gait and Worthington (2007) describe Islamic finance as, “a financial service principally implemented to comply with the main tenets of Shari’ah (or Islamic law).” The financial service of particular concern to this paper is a loan product. Therefore, Islamic financing means loan products that comply with the tenets of Shari’ah.

The most important tenet regarding financing is the prohibition of *riba*. *Riba* translates directly to the English word “increase”, or “growth” (Siddiqi 2004); however most *ulama* (scholars of Islam) including arguably the most prominent living Islamic financial scholar, Muhammad Taqi Usmani, uses the English word “usury” to describe *riba (Usmani 2005).*

2.4.3.2. When has Islamic financing been used?

The origins of Islamic financing stem from the injunctions found in the Shari'ah and Sunnah (Vogel & Hayes 2006); this dates back roughly to 580 CE. Throughout the ages, Islamic financing has been used in informal or non-institutionalised settings; however, European colonisation of practically the entire Islamic world brought about a system which eclipsed the age-old traditions of Islamic financing (Vogel & Hayes 2006).

The birth of contemporary Islamic economics and finances was put forward in the early twentieth century by Islamic liberation movements. They sought liberation from colonial powers and as a method of delineation, revived Islamic finance and the system in which it operates in (Zaman 2008). The first contemporary Islamic financing institution, as reported by Vogel and Hayes, opened its doors for business in 1963 (Vogel & Hayes 2006). Since this rekindling of determination and independence from colonial powers, the use of Islamic financing has risen.

2.4.3.3. How has Islamic financing been used?

Islamic financing is based on the tenets of the Shari'ah. One permanent feature of Shariah is that no injunction contradicts another. The most basic of tenets is belief in the oneness of God. The Sunnah has taught Muslims that there are 99 names of God that one may use to describe God, and these descriptions contribute to understanding God better. This research wishes to expound upon the names of God, as it has relevance to Islamic financing. They are:

- *Al-Hakeem* - The All-Wise;
- *Ar-Razzaq* – The Provider;
- *Al-Hakam* – The Judge; and
- *Al-Adl* – The Just.

For the time being, the research will delay the explanation for, and sharing these names with, the reader; suffice to know that it is a basic tenet.

Along with the basic tenet of the oneness of God, the research has already made mention that prohibition of *riba* is one of these tenets, five other important tenets that rules over exchange and wealth are;

- Prohibition of gambling. *Maysir* is an Arabic word which means gambling. The *ulama* describes *maysir* in general as games of chance but with regards to exchange as a transaction where one party's gain is another's loss. The Sunnah also introduces the concept of *gharar*, which directly translated means “hazard” or “excessive risk”. The *ulama* describes this as an exchange when one or both parties do not know exactly what the item is either in form or value that is being traded. The concept of *maysir* and *gharar,* as the *ulama* explain, are closely related and both are forbidden. Iqbal (1997) best describes this tenet as the prohibition of speculative behaviour.

- Permission to trade: Pickthall (1996) translates verse 275 of chapter 2 of the Quran as: “God permitteth trading and forbiddeth usury”. The *ulama* write that this excerpt informs us that trade, and therefore profit is permissible, and secondly, it teaches the correct approach to finance.

- Prohibition of using or dealing in forbidden commodities: according to Shari’ah, commodities such as alcohol, intoxicating drugs and pork are forbidden. The Quran further qualifies that dealing with foreign commodities is also forbidden.

- Sanctity of Contracts – In verse 282 of chapter 2 of the Quran, Pickthall (1996) translates, “O ye who believe! When ye contract a debt for a fixed term, record it in writing. Let a scribe record it in writing between you in terms of equity*”* Pickthall (1996) goes on to translate in the same verse “...that is more equitable in the sight of God and more sure for testimony, and the best way of avoiding doubt between you.*”* While the purpose of this verse is to show you how God instructs us in matters of contract and how God sees contracting as good for believers, there is an underlying message of commutative justice which must be sought in contracts.

- Alms giving – Z*akat* is an Arabic word that means alms giving or charity In verse 276 of chapter 2 of the Quran, Pickthall (1996) translates “God hath blighted usury and made alms giving fruitful. God loveth not the impious and guilty”. The ulama write that God in his infinite wisdom placed usury in context of charity for following reasons;

- To show humanity that if charity is to give without receiving anything return; usurious conduct is receiving without giving anything in return.
- To reduce hoarding by redistribution of wealth
- Usury destroy value while alms giving increase value
- *Zakat* is penance or reparation while usury is the opposite

Based on these over arching tenet for exchange and wealth are namely;

- belief in the Oneness of God and all of God names;
- prohibition of usury;
- prohibition of speculative behaviour;
- permissibility of trade;
- prohibition of using or dealing in forbidden commodities;
- sanctity of contracts; and
- alms giving

Islamic financing products have the following features as mentioned by Chapra (2008) and Usmani (2005):

- Asset backed.
- The asset which is for sale or leased must be real, and not imaginary or notional.
- The seller must own and possess the goods being sold or leased.
- The intention of the transaction must be genuine, i.e. giving and taking delivery.

- The debt cannot be sold or factored, thus the risk associated with the debt cannot be transferred; the risk of debt is upon the original creditor only.

The two direct implications of these features or characteristics of the Islamic financing products are:

- Risk is shared. Suppliers of funds become investors instead of creditors.
    - The etymology of risk comes from the Arabic *rizq* (Mews and Abraham 2007), meaning sustenance or provision from God. Muslims believe that all provisions or lack of provisions is because God is *Al- Razzaq* (The Provider) and *Al Hakeem* (The Wise) and makes provision as God is best positioned as *Al-Hakam* (The Judge) and *Al-Adl* (The Just). It is for this reason in part for the allowance of interest based on "just compensation" to be rejected in Islam, as who can really justify their reward for loss and be fair, but God.
- Since profiting from loans can only take place from sharing risk, Islam rules out loans for profit on consumption.
    - The tenet of permissibility of trade sanctifies profit, however, since loans for consumption is not asset-based and risk cannot be shared on a non-asset or something that has been consumed, Islam rejects loans for profit on consumption. *Ulama* recognise that there might be a need for somebody to acquire a loan but the granter of credit is to adhere to the principles of Islam and must offer that loan either with no interest, or grant the loan as a gift.

These characteristics of Islamic financing are packaged into financial products which are marketed by strictly Islamic financial institutions or by mainstream banks that have set up Islamic windows that comply with AAOFI (Accounting and Auditing Organisation for Islamic Financial Institutions). The trend, as reported by Qorchi (2005), is to opt for clear distinction between Islamic banks and conventional banks.

The financing products are packaged into the following categories (Usmani 1999). Brief descriptions only are given, as this research does not focus on this.

- *Murabahah*—trade with mark-up or cost-plus sale.
- *Musharakah*— equity participation.
- *Mudrabahah*— profit-sharing agreement.
- *Ijarah*—leasing.
- *Salam;* and *Istisna* —Forward Sale contract.
- *Sakuk*—bond-equivalent.

2.4.3.4. Where has Islamic financing been used?

Traditionally, Islamic financing has been limited to populous Islamic countries. However, with globalisation, Qorchi (2005) reports that the number of Islamic financial institutions worldwide has risen from one in 1963 to over 300 today in more than 75 countries. He goes on to say that concentration of markets and intuitions are still in the Islamic populous regions, but research indicates Islamic financing is also appearing in Europe, the United States, Africa and Australia.

2.4.3.5. Who has Islamic financing been used by?

Contemporary individuals, businesses and governments alike use Islamic financing. However, as reported, the market is small in comparison to the world financial market of over 600 trillion US dollars (Saville 2009). Traditionally, this market serves observers of the Islamic faith; however, institutional fund managers who have sought diversification also partake in Islamic financing products.

2.4.3.6. Why has Islamic financing been used?

Muslims from around the world must live by the laws set out in the Holy Quran, the *Shariah* and the teaching of their prophet Muhammad (PBUH) and the *Sunnah*. The Quran has over 6000 verses that deal with all facets of life and 12 of those verses deals with *riba* and the actual word *riba* has been used eight times within those verses (Siddiqi 2004). The sum meaning of these 12 verses unequivocally instruct Muslims that *riba* is forbidden, and partaking in riba will bring the wrath of God upon them. The wisdom of the ruling is written in the Quran within the context of *zulm* (Usmani 2005). Translated, *zulm* means "injustice".

With this background, the question "Why" can be answered. Muslims believe in the life hereafter. The purpose of life on this earth is served as a test to show worthiness to their creator that they should be allowed into the eternal paradise. In fact, it is common knowledge amongst Muslims that one of the five Questions Muslims will face the Day of Reckoning will be: "How did you earn your wealth and how did you spend it?" (Zaman 2008).

From the preceding text, it is clear the instructions and rulings of the Quran and Sunnah demonstrates worthiness. Therefore structures and products have been fashioned to exclude *riba.*

2.5. Building towards the research questions

Thus far, the review has tried to lay the foundation for this research while attempting to show the gaps in the body of knowledge from the literature reviewed. The research notes two specific authors that indicate this gap. The two are:

Rogers (2000) with an interesting position; he posits that usury and sustainability are both concerned with the relationship between economics and society. At the time of the usury debates, economics split from society, now the sustainability debate is about the lack of societal input regarding economics. However, he does intimate that usury in its own right might have something to do with sustainability.

Cohen (2005) proposes that more research is needed in the area of consumer debt and sustainable consumption. His research makes the link between the two concepts. He does this by citing debt levels in most advanced nations and how this debt drives consumption.
Apart from the two above most direct acknowledgements of gaps in knowledge, the review undertaken makes an indirect proposal for further study by intimating sustainable consumption in the demand side management of a problem (Connolly & Prothero 2003). Recycling, efficient usage, eco-friendly products, shared services and conservation measures all help to achieve ecological sustainability but, as Heiskanen and Pantzar (1997, p. 410) put it, “as insufficient ...does not provide much basis for drastically reducing the resource intensity of western lifestyles”. Given that it does not reduce intensity, inter-governmental organisations have tasked business to aim for sustainable

development, a supply side problem and also to aid in reaching sustainable consumption. These organisations suggest business must influence choice by removing unsustainable products and to communicate the impact of sustainable development by their products and services.

In order for business, and in particular those in the financial services to influence choice, their products must be well-known, especially in relation to the goal of sustainable consumption. While the review conducted reveals that there has been voluminous work done in the area in its own right, very little research has been done in juxtaposing the two concepts to illustrate that there is a link between financing model characteristics and its effects and the goals of sustainable consumption. It is this gap in the body knowledge that the research has exploited.

2.6. Summary of literature review

One of the aims of the literature review was to immerse the reader in the concepts presented. The format chosen was to provide the widest coverage with adequate depth and this was in the form of responding to the basic interrogative question posed.

Another aim of the literature review has been to demonstrate the gap in body of knowledge regarding the topic. The review has shown that conversation on sustainable consumption is vast, in depth and breadth, and very little attention has been given to the underlying reasons for the call. The concepts of financing models are slightly more robust than sustainable consumption but this research calls us to recheck this robustness.

The review has found that in order to pose research questions, a model for assessing the linkages between the financing models and sustainable consumption goals must first be created. This will serve as a bridge between the current body of knowledge and the research questions posed.

3. A model of assessment

3.1. Introduction

In chapter one, one of the stated objectives was to build a model of evaluating whether financing products are aligned to the goals of sustainable consumption. Chapter two highlighted the need for such a model, for there was a gap in the body of knowledge. However, before the research can address that gap, a model of assessing linkages between the two concepts of sustainable consumption and financing models must be made.

For consideration in building a model, the research looked at LCA tool recommended by the WSSD. The research found that, while the definition of the tool includes measuring environmental, economic and social impacts, many approaches exist such as the economic input-output method. Many writers conclude that the service industry has been neglected (Hendrickson, Lave & Matthews 2006)) and LCA tools have tended only include impact assessments on the environment. Ayres (1995) critiques the quantitative nature of the LCA and it seems it is not suited to a commentary of social impact.
Therefore the research rejected the LCA model and built a model for assessment by taking into the account the merits of the LCA model, along with the recommendations of the WBCSD and OECD for business in supporting sustainable consumption as reported in chapter two.

The approach taken to build this model was based on the systems thinking definition of sustainable consumption offered in the literature review and the basis of the model is around the categorisation of evidence found in literature in a manner that allows interpretation for discussion.

As a point of departure for the building of the model, the research offers justification to show that there is indeed a relationship between financing and sustainable consumption and an elaboration of the goals of sustainable consumption as these forms the categories of the model. With an understanding of the categories, measures were introduced, thereby affording the opportunity of assessing financing models to these measures.

3.2. Is there a relationship between financing and sustainable consumption?

Money is a convenient way for the exchange of goods and services. If we did not have money, man would have to barter for all his needs, and specialisation probably would not have occurred (Mohr & Fourie 2008). Traditionally, man provides labour and in exchange he receives money. This money can then be used to purchase goods and services for consumption. When man does not have money, he cannot exchange goods and services. He can either provide labour, and in time be compensated with money, or he can obtain a loan which is granted in the form of money. Man then can purchase goods or services for consumption.

The above paragraph shows the obvious relationship between money and consumption. The next step is to show if debt financing has an effect on the levels of consumption.

The Central Intelligence Agency (CIA) in their annual fact book (CIA 2008) estimate that GDP per capita is US$10,400. This represents consumption. The

CIA went further and calculated the average debt financed per capita which has been estimated at US$8,044 per person, or per capita. This means that on average, approximately 77% of all consumption by one person is debt-financed.

Given that the WWF in The Living Planet Report (2008) reports that consumption rates are exceeding the earth's capacity or ecological system to replenish or self-regulate by 30%, and 77% of all consumption is debt, it clearly shows that debt finance is allowing the world on average to over-consume. Therefore debt financing is related to sustainable consumption.

3.3. The goals of sustainable consumption – categories of the model

Earlier, the research offered a deliberate systems thinking definition of sustainable consumption which is the equilibrium between human consumption, the ecological system and the social system. The research further broadened the definition; as human consumption is facilitated within the economic system so the equilibrium is facilitated between the economic, social and the ecological systems. Recalling what equilibrium means (the state that has attained internal stability and functioning), this means that the economic system must function with stability, the social system must function with stability and the ecological system must function with stability. The systems described above form the basis of the categories within the model.

In order to gain an appreciation of the linkages with financing models, the goals of the individual systems are presented below. As these goals indicate proper functioning and proper functioning indicates equilibrium and recalling the systems thinking definition of sustainable consumption, understanding the equilibrium is instrumental in seeing the connection between financing models and sustainable consumption.

The proper functioning of the systems;

The Economic System

For the economic system, there are many sub-goals like growth, full employment, economic freedom and price stability (Mohr & Fourie 2008) under the current paradigm and these are an attempt to measure the real purpose of maintaining or improving the quality of life (QOL). This QOL concept has, on its own, has been discussed by countless writers ranging from Aristotle to Sen at length but a defining QOL and measuring progress towards improving it have been elusive (Costanza *et al.* 2008).

The key measure under the current paradigm of thinking for the healthy state of the economy to indicate its performing correctly is GDP or, rather, the growth in GDP. However, many authors, such being Nussbaum and Sen (1993) see this proxy as a crudely effective measure of quality of life. Costanza (2009) writes that, once upon a time, it made sense to use GDP as a proxy for quality of life because in that time infrastructure and capital were not in abundance but social capital and natural capital were. Worrying about the social and natural externalities risks at that time seemed unnecessary. GDP at that time subsumed the size of market and drawing in society into the market and expanding the market meant improving the quality of life for those new entrants. Costanza (2009) also comments that those times have changed and the social and natural externalities risk are now close and large and therefore agrees with Nussbaum and Sen (1993) that GDP is a crude measure and has perhaps outlived its usefulness as a measure or proxy. Yones (2006) echoes the sentiment by writing: “There is a need for a new integrated qualitative and quantitative approach, as opposed to current subjective measures, to assist in the creation of a new socioeconomic development metric to measure and monitor the development of the nation's most important asset—its people.”

Costanza *et al.* (2008) offers a definition for QOL “Quality of Life (QOL) is the extent to which objective human needs are fulfilled in relation to personal or group perceptions of subjective well-being.” He adds to this by defining

- human needs*:* “Human needs are basic needs for subsistence, reproduction, security, affection, etc”. and comments on how subject well-being can be assessed; and
- subjective well-being: “assessed by individuals or group responses to questions about happiness, life satisfaction, utility, or welfare”.

While Costanza *et al.* (2008) brings clarity to the definition, Yones's (2006) work brings clarity to measures which could be used instead of GDP. Yones (2006) calls it Gross National Wellness (GNW). The metric measures socioeconomic development by tracking seven development areas which have been directly quoted of their website. “

1. **Economic Wellness**: indicated via direct survey and statistical measurement of economic metrics such as consumer debt, average income to consumer price index ratio and income distribution.

2. **Environmental Wellness**: indicated via direct survey and statistical measurement of environmental metrics such as pollution, noise and traffic.

3. **Physical Wellness**: indicated via statistical measurement of physical health metrics such as severe illnesses, overweight, etc.

4. **Mental Wellness**: indicated via direct survey and statistical measurement of mental health metrics such as usage of antidepressants and rise or decline in number of psychotherapy patients.

5. **Workplace Wellness**: indicated via direct survey and statistical measurement of labour metrics such as jobless claims, job change, workplace complaints and lawsuits.

6. **Social Wellness**: indicated via direct survey and statistical measurement of social metrics such as discrimination, safety, divorce rates, complaints of domestic conflicts and family lawsuits, public lawsuits and crime rates.

7. **Political Wellness**: indicated via direct survey and statistical measurement of political metrics such as the quality of local democracy, individual freedom, and foreign conflicts. "

These development area metrics quoted above are offered as part of the research, not only because they are in some form implemented already in Bhutan, but also serve to show that there is movement in thought and policy towards better alignment with social and ecological systems, and in understanding what these metrics measures are give a better understanding of the purpose or goal of the economic system.

The Ecological system

The purpose of the ecological system as described by OECD online glossary is to maintain symbiotic relationships between all living organisms in a harmonious way that fosters survival of those organisms. Humanity is one such organism as described in the purpose. Humanity is entirely dependent on naturally-produced physical surroundings and optimal use that ensures regeneration of the natural surroundings is paramount to the symbiotic relationship. However, the principal consideration offered by most is that human lives and humanity survival is first and foremost (Sen 2009b). Some of the main environmental issues at present are climate change, the depletion of the ozone layer, air quality, waste, deforestation and soil quality. The current most popular issue from the perspective of the researcher is climate change, and the metrics takes form in carbon dioxide emissions.

The Social system

The social system, or society at large, concerns itself with humanity and how humanity organises itself, to ensure that humanity relationship foster the survival of humanity.

One measure of healthy relationships is that justice is shared among groupings of society, be it regions, religions, cultures or race. John Rawls provides enlightenment on the subject in his *Theory of Justice*. Sen (2009) agrees and praises John Rawls for his contribution to the understanding of justice as fairness. However, where Rawls is mean-oriented, that is to say, what primary goods at the person's disposal, Sen argues that that reduces everything to income. He suggests that judgement of fairness must be made on capabilities of man, that is, the intrinsic ability to pursue opportunities. He goes on to say that man is more at home with commensurability, that is to say, something that can be measured in the same units and compared. It does not make sense to reduce social justice to a simple measure of income equality. Judgement on fairness must be made on capabilities and the freedom afforded to pursue opportunities of their choice. He, however, believes that that this cannot be easily measured and compared, but qualitative inferences can easily be made.

Another measure of healthy relationships is commutative justice. It has been succinctly defined by Webster's Dictionary as the virtue which governs contracts, which calls for fundamental fairness in all agreements and exchanges between individuals or private social groups. Smith (1776) describes human nature as having a "...propensity to truck, barter, and exchange one thing for another", He goes on to say that he does not know where this propensity came from, whether it is an original principle in human nature or if it is a consequence of reason, but the propensity has allowed specialisation and division of labour. Without a doubt commutative justice has allows the propensity to be maintained.

3.4. Measurements for the model

When measuring goals, management gurus such as, Peter Drucker, explains that efficiency and effectiveness must be measured. Efficiency is working productively with minimum wasted effort or expense and effectiveness is producing a desired or intended result (Drucker 2007). He goes on to say that, "Effectiveness is the foundation of success— efficiency is a minimum condition for survival after the success has been achieved. Efficiency is concerned with doing things right. Effectiveness is doing the right things" (Drucker 2007, p.35). With this in mind, as we have seen, the goals are improving the quality of life, fostering human relations and maintaining a symbiotic relationship with the environment, and for each of these we must measure if the intended goal is being met with the minimum wasted effort or expense.

However, collectively, these three systems are also part of a greater system which must function, therefore functioning or equilibrium is not absolute to the individual systems but relative to each other.

Given the relative equilibrium and system interrelationships between the systems, any model that is built must acknowledge and allow that certain aspects of effects of financing models can be recorded in more than one category, For example, even if a particular aspect of usury is favourable to the effectiveness of the economic system, it may be detrimental to the efficiency of the social system.

3.5. Units of measures

The interpretive nature of the research indicates that the scaling technique has to be non-comparative; as a property is rated in isolation, there is no benchmark to rate it (Zikmund 2003). The rating of the outcome of the particular assessment is open to interpretation and there the researcher believes that broad encompassing units should be used. Therefore the units for this research are +1 for positive alignment and -1 for negative alignment. However, consideration has been given to the emphasis shown by Peter Drucker, where he suggests that effectiveness is more important than efficiency (Drucker 2007, p.35). Therefore the rating, if deemed to be categorised as effective, will be doubled (2x) and tendered to category.

3.6. Using the model

Completion of the model will repeat itself for usurious-based products and then Islamic financing products. Levy and Ellis (2006) write that once the researcher believes that the themes of the data are familiar, the review of data must stop. At that point the units will be tallied. A higher score can be assessed as one financing model being more aligned with the goals of sustainable consumption.

3.7. Summary

3.7.1. Goals

The discussion on goals was to provide a sense of how the assessment of financial models will be judged. The research has tried to give the reader a sense of the deep connotations associated with each system, and however the presentation of these deep meanings has been restricted due to the focus of the research. Provided below are the minimum take-a-ways for the reader;

- Economic system— improving the quality of life (human).
- Social system— fostering human relations.
- Ecological system—maintaining a symbiotic relationship with the environment.

3.7.2. Measurements

The measures serve as the criteria to which the financing models will be assessed as to how to align themselves with the goals of sustainable consumption.

Without wanting to repeating what has been said previously, the research does, however, want to stress the definitions for effectiveness; which is producing a desired or intended result, and efficiency; which is working productively with minimum wasted effort or expense. Listed below are the measurement criteria for the assessment model:

- ecological efficiency;
- ecological effectiveness;
- social efficiency;

- social effectiveness;
- economic efficiency; and
- economic effectiveness.

At this point, the researcher would also like to note that Dyllik and Hockerts's (2002) contribution to the ongoing conceptual development of sustainability resulted in very similar criteria for assessing corporate sustainability; however, while the conclusions on criteria are similar, their focus has been for the corporate, and the process and rationality is different. However ,the researcher does acknowledge that backward referencing on Dyllik and Hockerts (2002) may have influenced the researcher's conclusions.

3.8. Tabular depiction of the model

Figure 3 - Tabular depiction of the alignment assessment model

		Evidence of effects			
		Usurious financing		Islamic financing	
System	Mesures	Positive	Negative	Positive	Negative
Economic	Effectiveness	2			-2
	Efficiency				
Social	Effectiveness		-1		
	Efficiency				
Ecological	Effectiveness				
	Efficiency	1			
	Total	**3**	**-1**	**0**	**-2**
	Grand Total	**2**		**-2**	

This exemplary tabular depiction is will offered as a summary of the themes induced ,The research has place the tabular shell here as it might serve to clarify of their understand of the model offered previously in text. If one had to read this depiction, it would read as that theme usurious financing has positive Economic Effectiveness relationship on the goal of sustainable consumption and scores 2 but at the same time it has a counter negative relationship on the social efficiency which scores 1. Usurious financing has a positive Ecological efficiency and therefore scores 1 and Islamic financing has a negative Economic Effectiveness's and scores -2. If the scores are tallied the grand total is + 2 for usurious financing and -2 for Islamic financing. Therefore for usurious financing is more aligned to the goals of sustainable consumption.

4. Research questions

4.1. Introduction

This chapter presents the purpose of this research study following on from the objectives presented in chapter one. It is with sincerity and hope that the researcher poses these questions that add to the body of knowledge as reviewed. In addition to the review the model of assessment created has exposed, there are two questions that need to answered, and with those two questions are six sub questions.

4.2. Research question 1

How does the usurious financing model align itself with the goals of sustainable consumption?

To answer this question we ask the following questions:

a) Is usurious financing economic-effective?

b) Is usurious financing economic-efficient?

c) Is usurious financing social-effective?

d) Is usurious financing social-efficient?

e) Is usurious financing ecological-effective?

f) Is usurious financing ecological-efficient?

4.3. Research question 2

How does Islamic finance model align itself with the goals of sustainable consumption?

To answer this question we ask the following questions:

a) Is Islamic financing economic-effective?

b) Is Islamic financing economic-efficient?

c) Is Islamic financing social-effective?

d) Is Islamic financing social-efficient?

e) Is Islamic financing ecological-effective?

f) Is Islamic financing ecological-efficient?

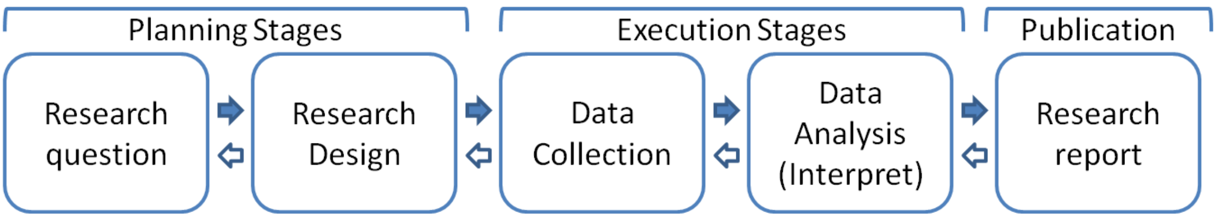
5. Research design

5.1. Introduction

Chapter 5 highlights the research design used to investigate and tackle the research problem presented in chapter one. Terre Blanche (2008, p. 6) describes a research design as a strategic framework for action that serves as a bridge between research questions and execution or implementation of the research.

Terre Blanche (2008) likens a plan to a blueprint or plans for a house. Without a plan, the house might not have a specific room or a builder might decide to use certain fabrics not to specifications. Likewise, research design ensures that the research fulfils a particular purpose and can be completed with available resources. However, they stress that research design is unlike house designs in formality; the process and standards of the blueprints are more flexible. They do offer a stepwise process to the research (Figure 4) and suggest that the process be iterative and suit the research.

Figure 4 - Stepwise approach to research



With regard to the ”blueprint” as a way of thinking about the actual design, they suggest and recommend that research design must include decisions about four dimensions or principles, which are:

- purpose of the research;
- the theoretical paradigm informing the research;

- context within the research is carried out; and
- research techniques to collect and analyse data.

This research design is based on these above mentioned principles.

5.2. Purpose of research

In order put forward a purpose of research Terre Blanche (2008, p. 6) suggests that the researcher asks three questions of the research. They are:

- On what object do you wish to draw conclusions on?
- What features of the object are to be observed?
- What type of conclusions does the researcher hope to draw about the object of analysis?

On closer analysis these questions are more generally known as:

- the unit of analysis;
- the variables studied; and
- the type of study.

5.2.1. Unit of analysis

Terre Blanche (2008, p.6) distinguishes between four different general purpose units of analysis: individuals, groups of individuals, organisations and social artefacts or man-made products. The unit of analysis for this research product are social artefacts of financing models, namely usury-based financing and Islamic-based financing.

5.2.2. The variable studied

The literature review has revealed that the features/properties of the set of independent variables (IV) financing models, i.e. usurious products and Islamic finance products that show alignment to the goals of sustainable consumption are:

- ecological-efficiency;
- ecological- effectiveness;
- social-efficiency;
- social-effectiveness;
- economic-efficiency; and
- economic-effectiveness.

Terre Blanche (2008, p. 6) states that properties can be further classified into three categories:

- conditions—objective descriptions of the social artefact;
- orientations — perspectives or attitudes on the object; and
- actions — behaviour of the variable.

These six properties can be classified as conditions as objective descriptions will be collected and related about the variable.

5.2.3. The type of study

Terre Blanche (2008) writes that there are three ways or adjectives that express what type of study is being conducted.

- The goal of the research

  The terminology or adjective commonly used are exploratory, descriptive and explanatory/casual. Exploratory research makes preliminary investigations into relatively unknown areas of research. Description aims to describe phenomena and explanatory/casual aims to provide casual explanations of phenomena.

- The use of the research

  The terminologies commonly used are basic research or applied research. Basic research is used to advance the fundamental knowledge of the world while applied research is used for practical and immediate application. More recently, a new category has emerged, namely strategic research. This research generates knowledge about specific problems related to social conditions and systems with a view to eventually solve or contribute to the solution through further development and research.

- The approach to the research

  The terminology commonly used are Quantitative and Qualitative, The approaches base the conclusion on different kinds of information and different techniques of analysis. Qualitative research uses collected data in the form of written or spoken language and analyse the data by identifying themes, while quantitative research uses data in the form of numbers and use statistical techniques to analyse the data.

Given the three ways of classifying the type of study, this research can be classified as exploratory, strategic and qualitative.

Specifically, as reported, Patton (2002, p.29) qualitative research can have strategic themes. "A strategic theme is a framework for decision-making and action; it permits seemingly isolated tasks and activities to fit together, integrated separated efforts towards a common purpose."

The strategic theme used for this qualitative study is holistic and inductive. Terre Blanche states that holistic is: "The whole phenomena under study are understood as a complex system that is more than the sum of parts, but focus is given to more complex interdependencies," while the inductive theme is cited as "the immersion in the details and specifics of the data to discover important categories, dimension and interrelationships" (Terre Blanche 2008, p. 48).

5.3. The paradigm informing the research

Terre Blanche (2008) records that researchers gravitate toward a specific paradigm because it fits in with what the researcher identifies, paradigms can exist simultaneously but the researcher should, and usually, stick to one. Paradigms for research are a set of assumptions that related to the ontological, epistemological and methodological nature of the research. Ontology refers to nature of reality to be studied; epistemology specifies the nature of relationship between the researcher and what can be known, and methodology specifies how the researcher may go about practically studying whatever they believe can be known.

The three paradigms are:

- Positivism

  The assumptions are: a stable reality like laws of nature, an objective researcher using quantitative methodologies and techniques. This paradigm generally appeals to people who like numbers.

- Constructionist

  The assumptions are: socially constructed reality, a suspicious researcher using deconstruction as a technique. This paradigm generally appeals to a researcher who wonders how the social world which contains numbers and text gets constructed.

- Interpretive (assigns significances or coherent meaning)

  The assumptions are: subjective reality and an observer who uses interpretation in a qualitative approach. This paradigm generally appeals to a researcher who cares about the meaning people attach to facts.

The default paradigm for this research is interpretive.

5.4. Research context

All research takes place within a particular context, given the scope of the research, limits itself to documentary source, and being interpretive in nature curtailed effort (in light of focus) is given to sensitise the context of the document. However, it is the position of the researcher that the provision of context is of less value, as a complete context is difficult to obtain; given it is historical secondary data.

5.5. Research techniques

The techniques used in this research are divided into three categories which corresponds to Terre Blanche's (2008) executions stages, mentioned previously in figure 4.

5.5.1. Sampling

The population for the sample is all historical documents pertaining to the topic at hand. Some categories of data storage are found in online scholarly journals, books written in English and some translated into English, online portable documents written in academic style but not peer-reviewed, encyclopaedias and dictionaries. Many of the documents/journals are categorised in disciplines of ethics and philosophy, economics and marketing.

The technique used in sampling is called purposive sampling. Patton (2002) describes this type of sampling as the selection based on the richness of information that illuminates the phenomena of interest, therefore sampling is aimed at insight of the phenomena, not empirical generalization of the sample to population.

Representation is important in sampling; the sample must be representative of the population (Terre Blanche 2008). While important, one is never quite sure of this characteristic, however, attempts were made to ensure searching in the time period the phenomena is said to have come of age, as well as interrogated sample units that originate from different disciplines.

5.5.2. Data collection

All data is secondary historical data; therefore a very similar approach will be taken with the literature review. In data collection, ”searching” begins with querying scholarly literature databases such as, *inter alia* Jstor, ABI/INFORM, ScienceDirect and Ebscohost. Keyword searches along with extensive use of meaningful keyword searching, forward and backward author/references searches will be conducted. Keyword searches are when appropriate terminologies pertaining to the subject at hand are used in online search engines. Forward searches are done by reviewing articles that have cited the particular article at hand are or by reviewing the author’s published work that follows the article at hand, while backward searches review the references listed in the articles found or reviewing the author’s previous work. In attempt to capture the broadest search, the researcher opts to use the metaphorical ”funnel approach” and the metaphorical ”concertina approach” (narrowing and enlarging the search) (Levy & Ellis 2006). For all other type of documents used, the starting point was searching by using an online search engine.

The tool used for management of for the entire document is a software package called Endnotes. Endnotes is well known for referencing and certain group capabilities and attachment-linking features enables collection in an orderly fashion.

5.5.3. Data Analysis

While the process depicted earlier in this chapter clearly demarcates the collection from the analysis phase, in reality, these steps take place simultaneously. Terre Blanche (2008) acknowledges that this used to take place with qualitative research when using the inductive theme. The analysis again takes form as it did in the literature review, after searching and familiarisation begins.

- Classifying(listing by concepts/theme), then
- analysis (prioritising concepts), then
- synthesis (generalising the concepts).

  One particular tool which is useful for electronic documents is a search platform on documents stored on a local machine called Google desktop. This software allowed the researcher to look for coded words in the sample data. The researcher acknowledges that there is quantitative analysis software on the market or even for free online; however; the researcher did not opt to use this software because of the following reasons.

  - A number of documents used in the analysis were not suitable for software search. This included paper-based books and electronic articles which were mere images, and not suitable for searching by software.
  - The topic of sustainable consumption with its varied pseudonyms and categorisations would make the computer-based analysis more cumbersome.
  - The time taken to become proficient in the software program was considered onerous.
  - With the researcher having a background in software development, the knowledge that bugs in software exist in spite of the best efforts by the proprietor made the researcher wary and

reliance on software in such an important matter made it too difficult to bear.

The researcher also submits that the model built in chapter four takes into consideration the best practices for data analysis and lends itself to interpretation, especially interpretation of the part and how it fits into the context or the meaning of the whole. The assessment model proposed in chapter four in itself captures the output of the synthesis process.

5.6. Limitations

The interpretive nature of the research, which for many grounded in empiricism and logical positivism, may not bode well. Everyone may not appreciate the systems mindset and how relationships can and may have effects on other systems. The quality of this research is totally dependent on the skills of the researcher and objectivity is more difficult to assess and demonstrate and even unconscious bias may have a role in the subjectivity of the outcome. It will be extremely difficult to convince others of its importance. The unit of measurement in the model of assessment may also pose as a limitation. The subjective nature along with the broad units can affect accuracy.

5.7. Summary

The design is qualitative in nature. Only secondary historical data formed the sample. The paradigm under which the research will be taken is interpretive. Data was collected, *inter alia* from journals and books. The model of the assessment is well suited to data analysis by virtue of its categorisations.

6. Results

6.1. Introduction

As a way of presenting the results, the research first offered themes interpreted from the financing models set literature about their properties the research questions are posing. Following the themes, the responses to the research questions are given; the responses include reference to themes in this chapter or other themes within the research or provide new supporting evidence. The responses provided justification as to why the theme or evidence which appeared is suited or not suited to the category, along with the explanation of how by implication it affected/aligned the goals of sustainable consumption. In conclusion, the results are tabulated and displayed.

6.2. Underlying themes within the financing models

6.2.1. Money and its nature

Many preeminent scholars over the past 2,500 years have written commentaries on this subject, It would be a great injustice to these scholars to think that this research's few lines on the subject will serve well, The only consolation one has is that it is acknowledges this fact and the research only offers a brief glimpse into the matter. The researcher submitted that so much has been recorded on this subject because it is filled with conjecture.
The obvious starting point in understanding the theme was to describe money; then arguments are offered in favour of why money cannot earn interest.

Money originated to facilitate exchange of goods where direct exchange of goods seemed out of the question (Von Mises 1953). Money represents a scale of measurement that mediates price between different types and quantities of exchangeable goods (Usmani 2005). Money is exchanged between two parties in payment for goods and services.

Before proceeding, the research proposed a definition of interest, given the delicacy of the word as revealed. The position of this research was to offer a definition of interest before the general acceptance of interest being earned on money became a dominant social paradigm. Cassel (1903) describes interest as the price given for the use of capital.

6.2.1.1. The function of money

While money is universally accepted in the economics fraternity as being to serve as a medium of exchange (Usmani 2005), other functions of money have always been disputed, Fundamentally, the schools of thought are twofold: those who believe that money has other functions and those that say that the medium of exchange is the only function money serves.

Naturally, one might be inclined to think that, over and above the original function of money to act as a medium of exchange, money possesses the quality or function of being able to store wealth.

While this sounds plausible, the school of thought that thinks that money has only one function disagrees with the store of wealth function as it morphs money into an ”end”, meaning that people pursue money as a goal. Hoarding will occur, and lead to unfair practices that borders on animal behaviour patterns that will be used for profit at the expense of those that do not have money.

Most arguments against money earning interest take shape around these other ”functions”. The next section describes this argument in greater detail.

6.2.1.2. Arguments against money earning interest

Perhaps the oldest of arguments is regarding money as being barren or sterile. Aristotle declared that earning interest was unnatural. He based his point on the fact that nature makes things with a purpose and the purpose of money is to act as a medium of exchange; to use it for any other purpose he considered unnatural. So he considered earning interest on money unnatural.

In one form or another, this debate has surfaced in different forms over the years, *inter alia* they are: dead stock and productive stock, fungible or non-fungible, capital or non-capital, durable or non-durable goods, consumption good or production goods and commodities or non-commodities. The researcher’s intention was to share with the reader that this argument has plagued mankind since the dawn of money and will continue to do so. It is not the intention to recollect each period or form of argument; suffice it to say that the argument has been ongoing. One of the most ardent contemporary supporters of money as only a medium of exchange was the economist Silvio Gesell (see appendix 2 for more information on Gesell). He ascribes practically all social ills such as economic cycles, wars, exploitation, genocide, and slavery to the misapprehension of the true function of money (Preparata & Elliot 2004).

The point of the argument is that if money is lent at interest, then the lender is without expense and labour, but still earns an income, and if this situation is ethically correct. Dante, as cited in Visser and McIntosh (1998), reinforces this by denouncing living without labour as unnatural.

Considering ethics, this may be the appropriate time to introduce the two broad schools of thought regarding ethical behaviour. Firstly, ethics is the field of study of morality — distinguishing right from wrong. The two schools of thought are deontologism and consequentialism or, to put it more simply, valuing a journey more than a destination, as opposed to the school of thought that regards reaching a destination is important enough.

So coming back to our point; if the goal is to make money and no concern is given to how money is made, you will fall into the school of consequentialism. However, if you are concerned about how the money is made, then deontologism is the school most suited to your way of thinking.

The researcher raised this point here at this juncture because the research from this point on (if it has not done so already) contained a degree of subjectivity based on the researcher's ethical disposition, which is deontologism.

In summary, this theme was about the functions of money and interest being seen as unearned income. For purposes of assessing this, the researcher concluded that interest is unearned income.

6.2.2. Risk assessment

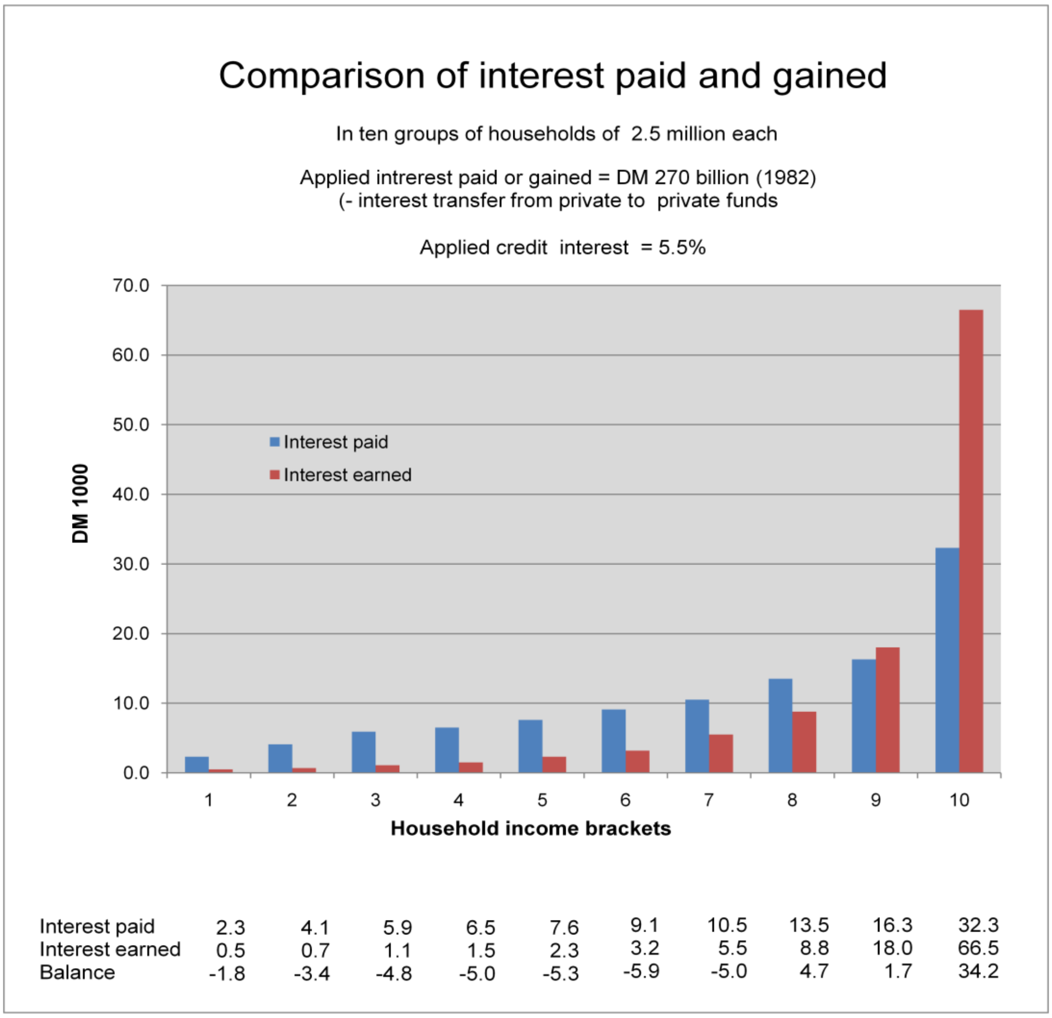
With usurious financing, assessment of credit risk is on the basis on the borrower's wealth, ability to repay or collateral offered. This, in effect, means that only if you have money already will you be able to apply for usurious financing; or the alternative is to pay punitive interest rates, as the borrower is considered high risk. The effect of this is that interest acts as a mediator on the distribution of wealth or rather the lender's control where wealth is distributed. Only the more fortunate members of the community will prosper, while the less fortunate either put up with paying punitive interest rates or do without.

Two effects of risk assessment were taken from the above paragraph:

- distributive injustices (Usmani 2005); (Visser & McIntosh 1998) & (Kennedy 1995); and
- commutative injustices (Visser & McIntosh 1998);(Usmani 2005) & (Persky 2007).

Kennedy (1995) offers some empirical findings as represented in figure 5. For the effects of distribution, the study split household by income. Ten income categories labelled one to ten were formed; one being the lowest category by income and ten being the highest. The study then counted interest payments and interest received for those categories. The results show that the higher income groups of eight and nine earn more than they pay and the lower income categories are paying more than they earn. This suggests that the old adage of ”the rich get richer and the poor get poorer” might have some truth after all.

Figure 5 - Comparison on interest paid and gained; source: (Kennedy 1995)



	1	2	3	4	5	6	7	8	9	10
Interest paid	2.3	4.1	5.9	6.5	7.6	9.1	10.5	13.5	16.3	32.3
Interest earned	0.5	0.7	1.1	1.5	2.3	3.2	5.5	8.8	18.0	66.5
Balance	-1.8	-3.4	-4.8	-5.0	-5.3	-5.9	-5.0	4.7	1.7	34.2

Another subtlety of collateral usurious-based lending is that the lender does not care where the proceeds of the loan are going. After consideration, this has an impact on product life cycle assessment (LCA) that, if you recall, is a tool to assess the environmental, economic and social impacts of product systems and services, accounting for the emissions and resource uses during the production, distribution, use, and disposal. Clearly, financial institutions cannot perform this assessment if their assessment of credit is purely based on ability to repay.

Yet another subtlety arising from collateral usurious-based lending is offered by Scott (2007). He offers Thorstein Veblen's thoughts that, when consumers are offered credit, some will accept it out of necessity and some will accept it just because they would like it. He fortifies this position by offering statistical evidence that 1.5 billion credit cards were in circulation within the United States in 2006. Scott (2007) goes on further to say that Veblen said that it is not standard expenditure that guides consumption efforts, but rather those items just beyond reach. Scott (2007) writes that Veblen, once again, said that if there is any retrogression from standard of living, it is felt as a grievous violation of human dignity and consumers will opt to go into debt rather than lower their standard of living. The researcher adds that this debt is usurious debt. Similarly Usmani (2005) writes that governments borrow usurious money, not only for genuine development programs, but also to support lavish life styles and political ambitions, which are made all the more easy under usurious debt, which does not assess where the monies are being used.

Now, in contrast to the above, in Islamic financing, under Islamic law all loans (if granted) for consumption are granted on humanitarian grounds and expect no return in excess of the principal. Loans for production, on the other hand, are based, as mentioned previously, on asset-backed and yield from the loan is based on participatory risk-sharing. What this translates into is that loans are based on meritocracy and not on ability to repay, that the parties negotiate their position to reach a deal which ensures commutative justice and, since an object or asset being purchased is identifiable by the lender, the lender can perform LCA on the product.

6.2.3. Instability

In chapter two, the researcher introduced artificial systems that have no self-regulating mechanism unless explicitly programmed. In the human-made economic system, one of the mechanisms needed for the control of money supply is the attempt to regulate the money supply through the rate of interest. One of the side effects of using usury or interest as a regulating mechanism is, as Gesell (1958) argues, the mechanism which causes the booms and recessions. Keynes (1936) reports that alternating encouragement or discouraging of borrowing is not best suited for ”social advantage”.

Another side effect of usury as reported by Usmani (2005) and Kennedy (1995) is that of inflation. Mohr (2008) defines inflation as the continuous and considerable rise in prices in general; he also writes in jest that inflation is when you can buy less money, implying the value of the money is diminished (Mohr (2008, p. 474). Monetarists attribute the cause of inflation to the rate of growth in the quantity of money in supply. Usmani argues this very point that usury creates a mismatch between supply of money and real output, as usurious contracts are not necessarily linked to production and interest, as money is created out of nothing. The ”earnings” from usurious products are not measured accurately in the system and combined with times of boom or recession; money supply in the system does not reflect money demand and, in general, money supply exceeds money demand and therefore the increase in prices as there is more money chasing the same number of goods. Usmani (2005) goes on to say how this is compounded because of the practice of fractional banking.

“Inflation begets inflation”, Mohr (2008) suggests, higher prices demand higher wages. Irving fisher is reported to have said (in Mohr 2008) “If all prices and income rose equally, no harm would be done. But the rise is not equal. Many lose, some gain”.

The institutions created to control the money supply cannot scientifically control the money supply. Rowbotham; an avert write on the economy (in Usmani 2005) has alleged to have said that the methods used to control the money supply is like the way a sledge hammer carves up a roast chicken.

In contrast, since there is no usury or interest rates in Islamic finance, the control of money does not occur this way. While the scope of this paper is financing, the researcher only offered a limited view of money supply in Islamic economies, now recalling that Islamic finance prohibits speculative behaviour and enforces *zakat* as erosive to wealth (this is a similar concept to Gesell’s rusting – see appendix 2 for more information). Hoarding does not take place and stored wealth is either consumed or preferable put into profit-earning assets or partnerships. Thus the quantity of money is automatically maintained. However, sometimes monetary expansion is needed. Chapra (1983) suggests that demand should be calculated at full employment.

6.3. Reponses to research questions

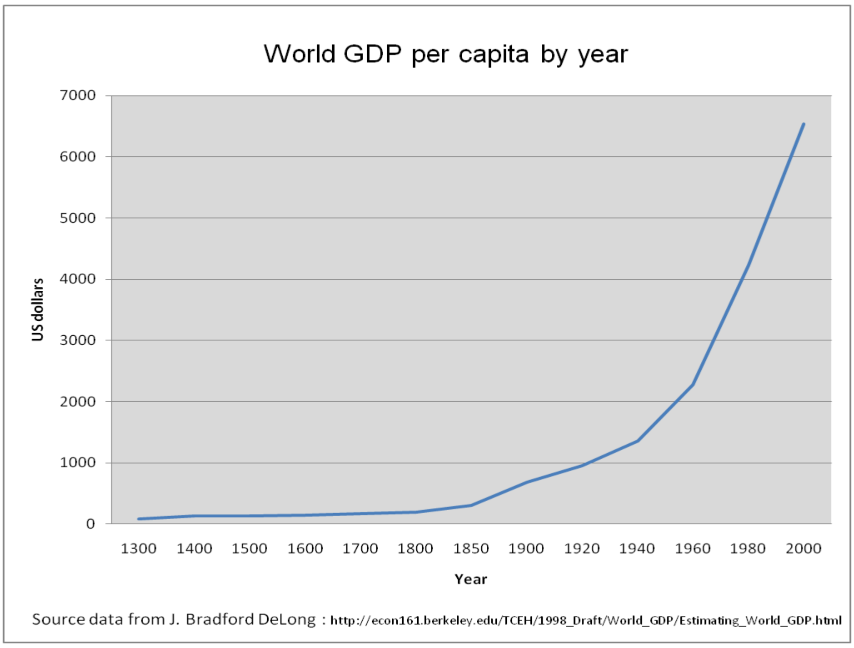
6.3.1. Usurious financing

6.3.1.1. Is usurious financing economic-effective?

The short answer is yes. On this, all the great European enlightened economists agree, although some might have objected to the use of it because of the detrimental side effects. Marx and Gesell were the most vocal about the side effects.

DeLong (1998), an economist teaching at the University of California at Berkeley, provides some evidence by estimates of world GDP he calculated in 1998. He used estimates of world population with estimate models of Real GDP. Below is the graphical output of his work. The research took the liberty of excluding all the years he calculated and only kept in the years which is most relevant to this research.

Figure 6- World GDP by year; source: (DeLong 1998)

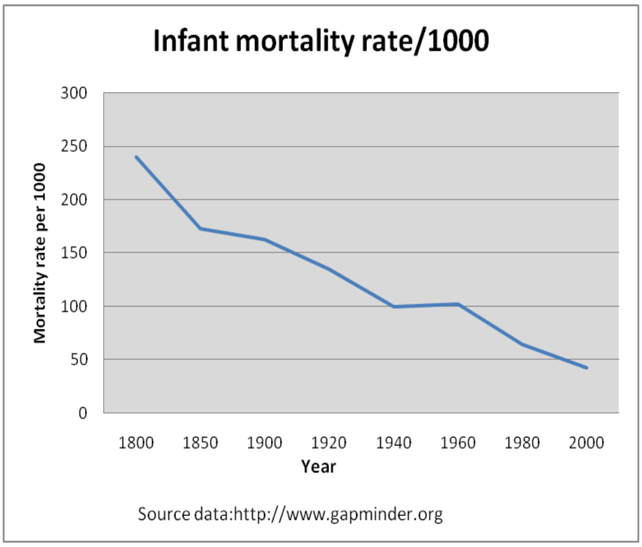


Year (C.E)	GDP per capita
1300	89
1400	128
1500	138
1600	141
1700	164
1800	195
1850	300
1900	679
1920	956
1940	1356
1960	2270
1980	4231
2000	6539

DeLong (1998) results show that, since 1850, world GDP per capita has increases 22 times whereas the past 550 year prior to 1850 has only grown 3.3 times. What is even more astonishing about this data is that over the last 200 years there has also been a population explosion and this diagram shows per capita. The researcher at this point would like to reiterate that Usury in England was abolished in 1854. This is an important fact as the British empire was at its height during the 19th century and British law in all areas were established throughout the empire or with friendly trade partners.

Another indicator of well-being as suggested by the UN, which forms part of Human development report (UN, 2009),is the infant mortality rate. Figure 7 below illustrates how mortality rates have been dropping during the past 150 years. .The data was sourced from Gapminder, which is a non-profit venture promoting sustainable global development and achievement of the United Nations Millennium Development Goals. The table of data shows us the actual numbers and, in addition, shows how many countries' sets of data made up the average. The UN also tells us that there is correlation between increased income and lowered mortality rates(UN, 2009).

Figure 7 - Infant mortality rate; source: www.gapminder.org



Year	Countries	Infant mortality rate/1000
1800	1	240
1850	8	172
1900	24	163
1920	32	135
1940	42	99
1960	198	102
1980	199	64
2000	195	42

The results of the finding are that Usurious financing positively aligns itself with economic-effectiveness.

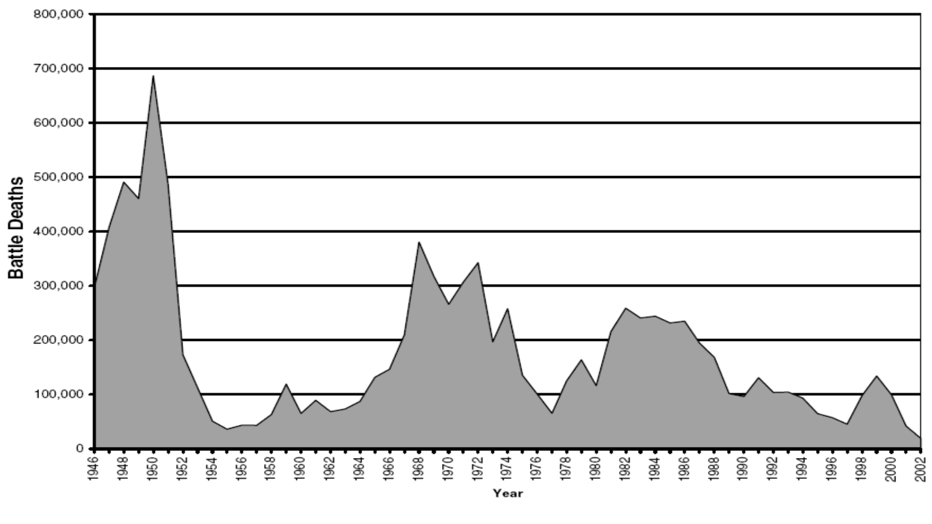
6.3.1.2. Is usurious financing economic-efficient?

The side effects of usurious financing, as mentioned previously under the instability theme, are cyclical instability and inflation. While institutions try their best to dampen these side effects, it is apparent that nobody can predict booms or recessions and inflation cannot be controlled, no matter how much targeting takes place. Inflation, as reported by Mohr (2008), is public enemy number one. Despite the fact that usurious financing is so effective leaves the researcher to conclude that usurious financing is negatively aligned to economic efficiency.

6.3.1.3. Is usurious financing social-effective?

If Silvio Gesell is to be believed when he says that usury is the root of all social ill, including wars, then the number of wars and deaths from wars since usury became main-stream should also be on the increase. The numbers of wars and battles recorded since 1850 is in excess of 352 wars (Sarkees *et al.* 2003). Within those 350-odd wars are two world wars. Lacina and Gleditsch (2005), offer some data on battle deaths. They define battle deaths as deaths resulting directly from violence inflicted through the use of armed force by a party to an armed conflict during contested combat. They go to say that determining numbers of battle deaths is very difficult as they go further back in time because, not only are battle death numbers shrouded in secrecy, but census-taking in battle zones was not common place. They also acknowledge that battle deaths do not tell the full story of the human cost of war; protracted conflicts in poor countries claimed the vast majority of their victims off the battlefield. However, they do offer a percentage of 6%, which suggests that, while not accurate, this gives an indication of what battle deaths comprise in relation to the total loss of life because of war .Their data is set from 1945 because of the statistical confidence levels. Lacina (2005) reports that, for the period 1945 - 2002, approximately 10 million souls have been lost. If you use the 6% figure to calculate the total loss of lives related to wars, then the figure is 167 million lives. Figure 8 shows the breakdown by years.

Figure 8 – Battle deaths 1956 – 2002; source: (Lacina 2005)



If you add in the estimates of loss of lives from just the two world wars, your total loss of life is at least 200 million.

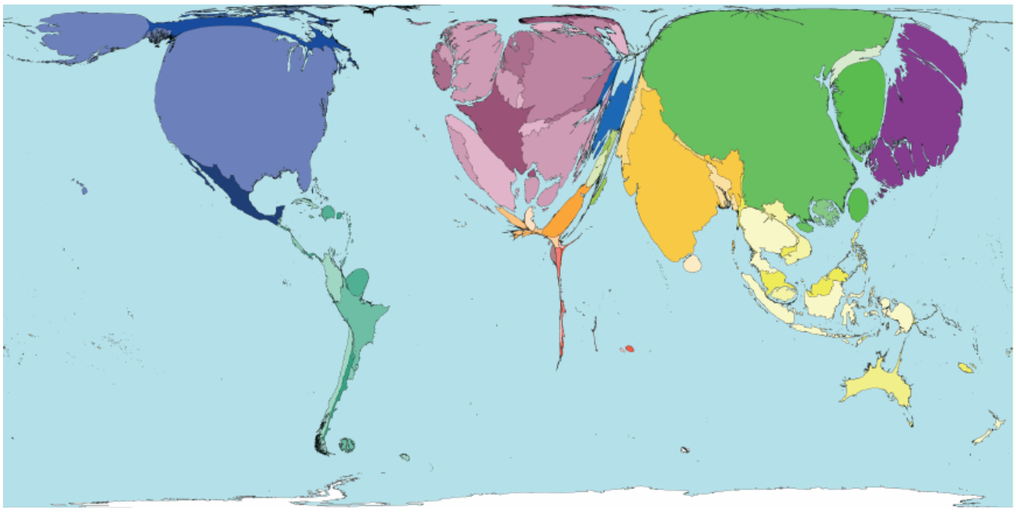
Forging a link between usurious finance and the loss of lives may sound quite difficult at first, but if one has to consider Hitler's anti-Semitic stance, a stance based on Jews perceived as unscrupulous money lenders (Tonge 2008), then perhaps it is not so difficult. Joseph (2007) in Zeitgeist asks us to consider in World War 1 that the reason for US involvement was from the persuasion from international bankers who controlled the Federal Reserve, and not the sinking of the Lusitania; the Lusitania was set up to make an excuse and to rally public support. The international bankers wanted the United States of America to become involved in the war because it meant that the government would have to borrow more money from the Federal Reserve (which the bankers owned) to wage war. This loan was usurious and interest and control was yielded from the participation of the US in World War 1. While Joseph (2007) has an extreme view, it does make a person reconsider the facts.

The goal of the social systems is to foster human relations. The above section tried to demonstrate that usurious financing does not foster human relations. The power of usury encourages greed; the greed for money and men to position themselves to abuse power. Therefore the researcher concluded that usurious financing is negatively aligned to social effectiveness.

6.3.1.4. Is usurious financing social-efficient?

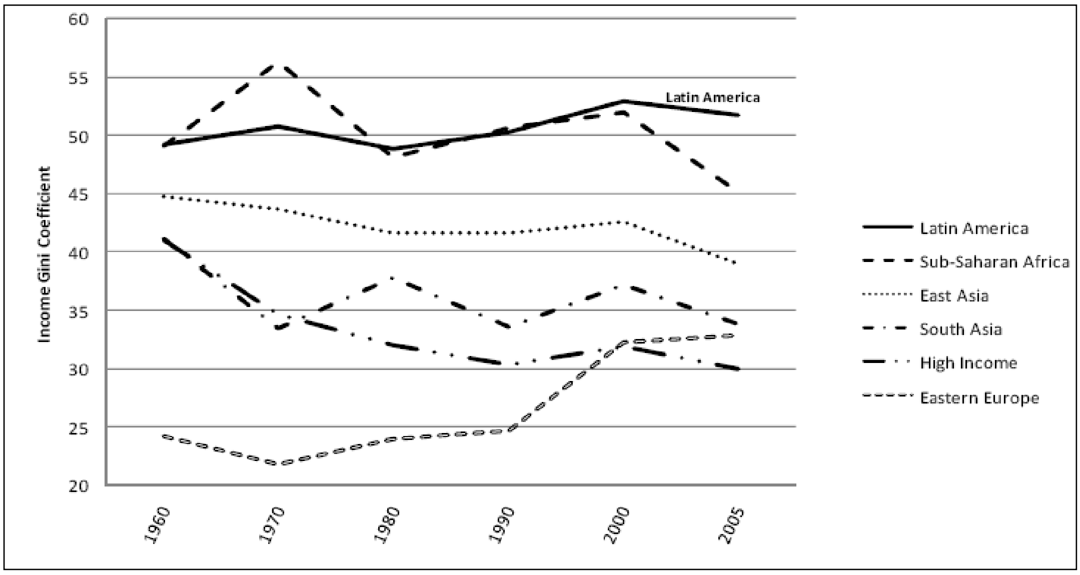
As reported earlier, one of the basic ways of reporting on social system is to report on distribution of resources. Figure 5, under theme risk assessment, demonstrated that interest earned gravitates towards the already-wealthy. Figure 9 showed which territories and countries have increased their wealth between 1975 and 2002. The distortion in the world map represented the areas to where the wealth has travelled. The figure indicated that wealth has grown primarily in the northern hemisphere.

Figure 9 - Wealth growth 1975 – 2002; source: www.worldmapper.org



While figure 9 showed north/south discrepancies, Figure 10 showed discrepancies within the categorised territories. The nations in the south generally have high Gini coefficients (greater than .40 is considered high), meaning that within those territories fewer people, as opposed to the masses, own most wealth.

Figure 10 - Categorised Gini coefficients; source: (Rojas-Suarez 2009)



Based on these representations and the theme of instability with respect to inflation, the research concluded that usurious financing is negatively aligned to social-efficiency.

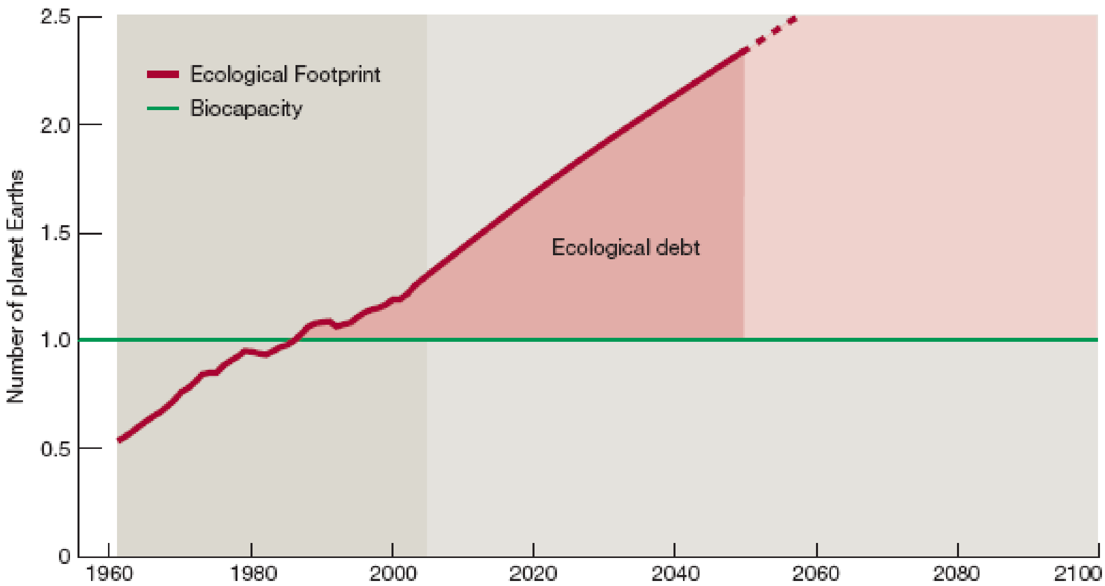
6.3.1.5. Is usurious financing ecological-effective?

Much has been said already in this research, therefore the research here merely offers a quote from James Robertson, a leading "green" economist in Usmani (2005, p. 96):

"Today, the money and finance system is unfair, ecologically destructive and economical inefficient. The money must grow imperative derives production (and thus consumption) to higher than necessary levels. It skews economic effort towards money out of money, and against providing real services and goods".

Figure 11 below, represented the "business as usual" scenario and tells us that humanity is currently in ecological debt. If we are set to continue with our current ways, humanity will fall further into ecological debt.

Figure 11 - Business as usual scenario and Ecological debt; source: (WWF 2008)



The dominant social paradigms that includes usury and all that it is brings, is leading us to possible destruction. The suggestions of the writer of the above quotation and this research definitely compels the researcher to believe that consumption levels are aided by usurious financing. Therefore the research concluded that usurious financing is negatively aligned to ecological efficiency.

6.3.1.6. Is usurious financing ecological-efficient?

Hopefully, by now, the research has demonstrated that usurious finance is not ecologically effective but given that it is not effective, efficient or how well usurious financing achieves effectiveness is a moot point. While this is debatable, the researcher offered Figure 12 below which highlights the ecological footprint of the world. The ecological footprint, as reported by worldmapper.org, measures the area needed to support a population's lifestyle. This includes the consumption of food, fuel, wood, and fibres and the pollution it emits such as carbon dioxide emissions. Figure 12 is viewed in combination with Figure 13, which represents GDP (level of spending), using currency exchange rates. We have seen how usurious financing is linked to higher GDP numbers; the research can easily conclude that usurious financing is negatively aligned to ecological efficiency.

Figure 12 - Ecological footprint 2002; source: www.worldmapper.org

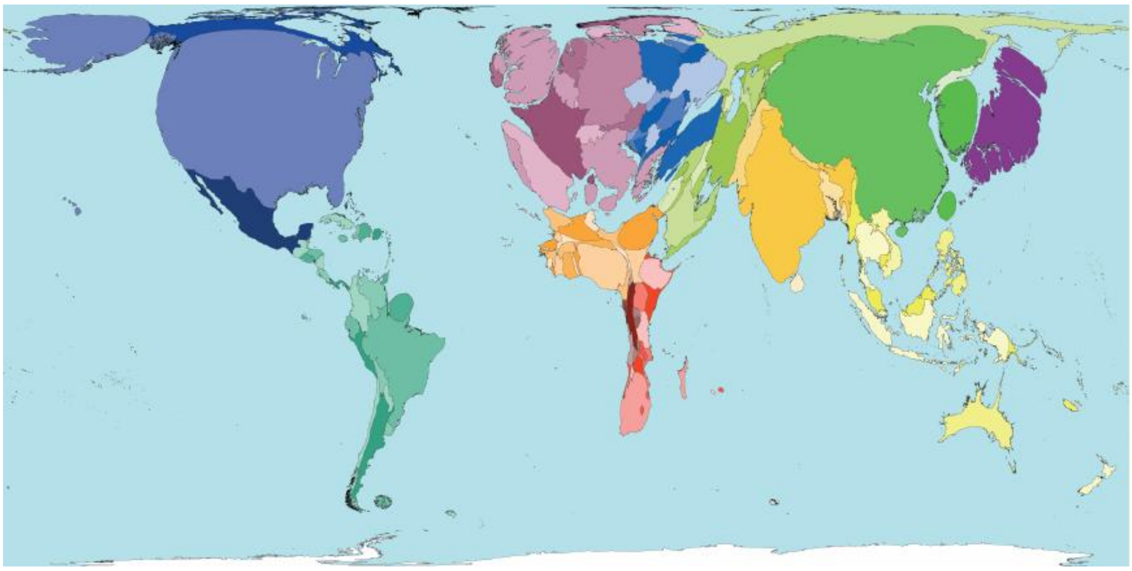
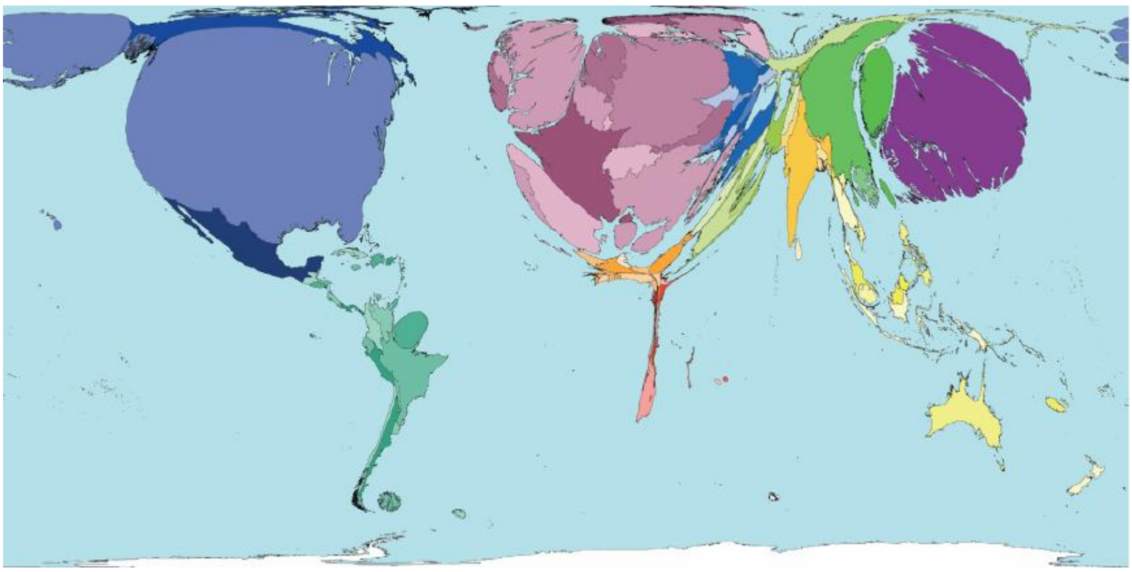


Figure 13 – GDP 2004; source: www.worldmapper.com



6.3.2. Islamic financing

In chapter 2, the research made mention of a set of guiding principles that dictate how exchange and wealth should be managed within an Islamic framework. The research also noted that these principles sit inside a larger corpus of law or Shariah. Haq (2001) writes that it would be fair to say that that this corpus of law is a comprehensive blueprint for a believer's whole life, which covers the smallest detail of external human conduct, both private and public. Haq (2001) calls it the Quranic system. Haq (2001) writes that the Quranic system operates on metaphysical, natural and human levels. These levels are related in a complex matter and cannot be understood in isolation of each other. With this in mind, far- reaching conclusions for the following questions have been very difficult to find, a fact made all the more difficult due to the limited empirical data emanating from contemporary practiced Islamic financing.

Alternatives for finding empirical secondary data have been to look at Iranian or Sudanese data. However, this approach was rejected due to systems approach of this research. As another alternative, the research considered the early Islamic empire or the later Ottoman Empire, as they were based on the ”Quranic system”; however, this alternative was also rejected due to the recent phenomena of sustainable consumption. In the end, the researcher has decided to reach conclusions based on the framing of this research and Islamic finance being non-usurious and extracted quotes from relevant literature.

6.3.2.1. Is Islamic financing economic-effective?

While quality of life is important under the Quranic systems, the connotations are different. The purpose of life is not to accumulate wealth, but to act in servitude to God to demonstrate worthiness for the life hereafter. Given this, the Quranic system is set up not to exceed economics boundaries beyond where there is no value adding to the real purpose of one's life. The economic way of life in Islam is frugality and thriftiness (Usmani 2001).

It is for this reason that the research concluded that Islamic financing is neither negative nor positively aligned to economic effectiveness.

6.3.2.2. Is Islamic financing economic-efficient?

Based on the Islamic goal for its economic system, the usurious way of controlling money supply in the current dominant social paradigm with all its side-effects is in stark contrast to the simplicity of *zakat* that introduces liquidity in to the money supply without having detrimental side-effects.

While the research has purely focussed on Islamic financing not *zakat*, *zakat* is one of the guiding principles of exchange and wealth management.

It is for this reason that the research concluded that Islamic financing is economic efficient.

6.3.2.3. Is Islamic financing social-effective?

Principles outside of Islamic financing but within the Quranic system dictate how fostering of human relationship should take place, one such principle is communal prayers; prostrating side by side with disregard to class or lineage fosters human relations. While there are many more examples, for purposes of this research concludes that Islamic financing is neither or negatively aligned to social-effectiveness.

6.3.2.4. Is Islamic financing social-efficient?

In chapter 2, the research recorded the wisdom for the Quranic system not adopting usurious financing was *zulm*, or injustice. Islamic financing, through its free market principles and risk sharing feature, enables all contracts for goods and services are negotiated, which ensures commutative justice. Distributive justice is gained through *zakat*. While *zakat* is a topic on its own, just for the reader's appreciation, *zakat* is calculated by 2.5% of stored wealth for those who qualify to pay.

Based on these findings, the research therefore concluded that Islamic financing is positively aligned to social efficiency.

6.3.2.5. Is Islamic financing ecological-effective?

Bennett (2008) compared the environmental ethics in Abrahamic faiths to the concept of "green" chemistry— a normative approach to green policy formulation and implementation. He recorded that, within the Islamic faith, environmental matters are viewed from a vicegerent's perspective. Believers are custodians of the natural world, a natural world in which God places signs for those for wish to know God. Haq (2001) writes that humans are subservient to the natural world within the Quranic system.

The research has found that laws pertaining to environmental issues are not within the domain of Islamic financing; thus the research concluded that Islamic finance is neither positively nor negatively aligned to ecological effectiveness.

6.3.2.6. *Is Islamic financing ecological-efficient?*

Dutton (in Bennett 2008, p.21) says "usury creates an incentive to use resources exhaustively". Does this mean that Islamic financing does not create incentives? Again, the features of Islamic financing lead the researcher to answer this question. Given that Islamic financing is asset-backed and that risk has to be shared, no investors will arbitrarily enter into agreement knowing full well the consequence of failure; that being a shared failure. The shared risk principle acts as an inhibitor to one over-extending oneself. Therefore the reasons for engagement are out of necessity or within constraints, not superfluous wealth.

Asset -backed finance allows the asset to be identifiable which enables life cycle assessments.

Based on these reasons, the researcher concluded that Islamic financing is ecologically efficient.

6.4. Summary

The research has concluded on its results and on display below in table 2.

Table 2- Summary of results

		Evidence of effects			
		Usurious financing		Islamic financing	
System	Mesures	Positive	Negative	Positive	Negative
Economic	Effectiveness	2			
	Efficiency		-1	1	
Social	Effectiveness		-2		
	Efficiency		-1	1	
Ecological	Effectiveness		-2		
	Efficiency		-1	1	
	Total	**2**	**-7**	**3**	**0**
	Grand Total	**-5**		**3**	

7. Discussion of results

7.1. Introduction

This chapter consists of seven sections; it contains discussions and interpretations of the results contained in chapter six in lieu of the literature review. The introduction is followed by discussions of sustainable consumption then two sections which discuss the research questions, then more general observations based on the results followed by discussion and conclusion on the research problem as set out in the introduction of this research and finally the chapter concludes by indicating whether the research objectives were met. The research notes at this point, that due to the paradigm under which this research was taken, interpretation has occurred throughout the research and suggested at appropriate times. This chapter serves as a capping to the already given interpretations.

7.2. The goals of sustainable consumption

Technically in terms of this research paper the goals of sustainable consumption cannot be classified as results, however due to the fluidity of the concept, the research wishes to discuss the concept. At essence, sustainable consumption seems to speak to all that is wrong within humanity. Consumption is the most basic activity humans need to do in order to survive, as humanity in the big scheme of things we are only starting to acknowledge that we are not consuming optimally and it threatens our survival, however for whatever reason, society at large are not grasping fast enough the simple fact that if we do not change our consumption patterns our lives and our progeny will no longer be able to survive in a world which does not support humanities basic needs. If we are to survive on using fewer resources, more sharing is going to have to take place; the paradigm of growth to quality of life can no longer persist as there is no more room to use more resources. If profit is the goal as it spurs progress humanity must find alternatives to the religion of profit. If progress brings humanity to the precipice of disaster how can it be called progress?

If we are to share resource, spatial areas of over consumption must level out to the spatial areas of under consumption. After this levelling off, if humanity is still in ecological debt we must remove any superfluous consumption. If we do not share, the population that under consume are doomed if they remain; or they will move to where consumption levels are optimal or where over consumption takes place; or they will fight for their survival. Again their three options are fight, flee or flow.

The research has tried to separate the goals into three categories namely economic, social and ecological. The only purpose for this was an analytical attempt to describe the goals and potentially a path to construct solutions, however it must be stressed in practicality from a sustainable consumption perspective these categories are indivisible. The research has revealed the analytical units of the social and economic systems boundaries lines were blurred, whether that is an advantage or not is another question. The fact that the ecological system was easy to demarcate from the other systems marks in the mind the other systems are subservient to the ecological system.

In conclusion of this section the research revealed sustainable consumption not only describes all that's wrong, it also describes the solution. The problem with that is that some may have to give up material possessions and comforts. That's the problem, knowing what's right is easy, doing what's right is where the difficulty lies.

7.3. Research question 1

The first research question posed in chapter 4 was '*How does the usurious financing model align itself with the goals of sustainable consumption?'* The result obtained from the research model is that usurious financing negatively aligns itself with the goals of sustainable consumption. This was determined by firstly identifying the goals of sustainable consumption; this occurred in chapter 2 and 3, secondly the research sought the effects of usurious financing; this occurred in chapter 6 and lastly the alignment of the effects to the goals also took place in chapter 6.

The insights and observations drawn from the results are:

- Usury is a powerful tool that cannot be controlled properly, Inflation is classified as the public enemy number one as it erodes value. In part, usurious financing is responsible for inflation. The contraction and expansion of the money supply that relies on rates of interest and usurious financing cause cyclical movements, the cyclic movements generally do more harm than good. While the current paradigm contests that usurious financing is perhaps good in certain countries or territories, as a system the world system, the results point in the direction that says it is not optimal.

- The results show that each category is affected by usurious financing. Within the current dominant social paradigm usurious financing is seen as a necessity for economic development, however in the words of Hans Rosling a professor of international health, 'the dataset does not match the mindset'. The damage caused or contributed by usurious finances far outweighs the good. People's mindsets have to change about usurious financing, previously usurious financings' good outweighed the damages, but the results show that this time is no more.

- The more sinister and outlandish implications of the results show that there is a possible link between usurious financing and war. The literature suggests that if money loses it objectivity as a mediator, it will become the object. Currently, it is a practical foregone conclusion that the major wars prevalent are resource wars, wars for natural resources and money. However on closer scrutiny it seem these wars are fought on the ideological level, one side that tries to maintain the status quo of supremacy and the other side fighting for the right to practice their freedom of choice.

- No matter what belief system is held, there are immutable laws that should not be broken. Usurious financing, as the results show, has aided the devastation of the natural system or the natural environment. However, it seems that the natural system is fighting back. The research offers a thought that it is not so much as fighting back, but it is just doing what it's been programmed to do. We must remember that all the carbon in existence was always in existence on Earth, Earth will survive regardless weather the carbon in 100s kilometres below the earth's crust or in the atmosphere. The biological life forms that depend on a very narrow set conditions will seize to exist, and not the earth. In short, the human system is subservient to the natural system, usurious financing relationship with the natural system is detrimental to the human system.

7.4. Research question 2

The second research question posed in chapter 4 was '*How does the Islamic financing model align itself with the goals of sustainable consumption?'* The results obtained from the research model are, that Islamic financing positively aligns itself with the goals of sustainable consumption. This was determined by firstly identifying the goals of sustainable consumption; this occurred in chapter 2 and 3, secondly the research sought the effects of Islamic financing; this occurred in chapter 6 and lastly the alignment of the effects to the goals also took place in chapter 6.

The insights and observations drawn from the results are:

- Islamic financings works within a body of rules that if adopted, ensures that servitude to God is the purpose of one's life. By isolating Islamic financing, the research was not permitted foraying into areas of Islam which could have been perceived as loss of focus within the research context. However the Quranic system in its totality on paper suggests that human consumption will be sustainable if the laws are followed. That leads to another observation, much of the secondary data pertaining to Islamic financing is theoretical, and the research has been unable to find effects based on observations that can contribute to the systems approach. Despite this, it has been sufficient to make conclusions.

- The idea or intention behind Islamic financing is no different to the idea of non usurious financing which Christian theologians of medieval Europe sought to enforce. However the wisdom behind the biblical ruling was unbeknown or not in physical manifestation at that time. European enlightenment saw the deification of science and usurious financing was adopted .Islamic financing is currently in vogue because the wisdom behind its economic conservative approach, now can be seen as it is contrasted with the usurious financing physical manifestations.

- The beauty of Islamic finance is in its simplicity. The adherence to non usurious conduct has efficiency gains in all categories of the model, as opposed to usurious finance where effective and efficiency losses are registered. As the saying goes simplicity is the mark of a genius, and for all those monotheists who read this, will find comfort in it.

7.5. General observations

The research is not some much about Islam versus usury, rather it is about a natural economic order versus an unnatural economic order. The researcher prior to this research has always known that all the major religions forbade usury in the Vedas, Manama Dharma Shasta chapter 11 verse 62, in The Old Testament (Torah) in Deuteronomy 23:19, 20 in The New Testament (Bible) Psalms 15:5 and In The Quran chapter 2 verse 276, the research just used Islamic finance as an instrument to highlight that they are alternatives to usurious financing which seems to be in compliance with the natural order.

The results of usurious financing compared to Islamic financing concludes emphatically that Islamic finance is more aligned to the goals of sustainable consumption. The range difference from neutrality (a score of zero) also offers food for thought. Why if the effects between the two financing models are so polarized, then do the current economic policies perpetuate only favour the financing industry and not society at large? It reminds the researcher of the story of the frog and the water, where as it goes; a frog if he gets into a pot of water which is boiling hot, it will immediately jump out, but if the frog jumps into cool water and then heat is applied the frog will not jump out and boil to death.

The ethical framework of Utilitarianism expounded by Bentham and later Mills has not gone unnoticed in the role it has played in the economic system. The general principle of do what gives you the most pleasure after the likely consequences have been evaluated, has morphed to be, do what gives you the most pleasure. And what's good for the individual is good for society. From a business perspective this philosophy has allowed in part business to abdicate there social responsibility and their duty to act in the best interest of society. Businesses now hide behind concepts like consumer sovereignty, the customer is King, maximizing customer satisfaction or 'we have corporate social initiative'. All these are examples of businesses abdication of social responsibility and how business has shifted it social responsibility to the consumer.

Another observation is summed up by using Clayton Christensen observations of disruptive innovation. Is Islamic financing a disruptive technology? According to Christensen the context in which these types of innovation happens is that the established firms do not see the disrupter as a competitor. There are two ways technologies can take root, by targeting non customers or competing in the low end of the market. While technology has not changed, our understanding of the world and what technology can do has, and the customer base with a social and environment conscience is growing. Can business use this model to capture market share through Islamic financing and at the same time do something inherently just. Time will tell.

The last observation shared can be categorised as Islamophobia. Since 9/11 in many quarters view Islam as a violent political ideology that has no values common with other cultures or religion. This perspective can stunt the growth of Islamic financing as products that adhere to Shari'ah are branded as Islamic. This of course has an effect on sustainable consumption. Since there will be fewer customers for these products.

7.6. The research problem

In the introduction the research posed the research problem *'Can the way we finance impact sustainable consumption? '* The response to the question posed is yes, we can impact sustainable consumption by the way we finance. However to make serious inroads in the attainment of sustainable consumption the dominant social paradigms of growth, profit maximization and material hegemony must change.

7.7. Has the research objectives been met?

In the introductory chapter, the research set out to complete certain objectives, we have revisited them to ensure that what has been set out to be done is in fact done.

The responses follow the extracted objectives from chapter 1.

7.7.1. Objective 1

- '*To contribute to the body of academic literature which deals with sustainable consumption'*
    - *'Describe the impact of financing models on sustainable consumption and its goals.'*
    - *'Show that the choice of financing models selected can affect sustainable consumption.'*
    - *'The creation of a model of evaluating whether financing products are aligned to the goals of sustainable consumption and thus in itself acts as a contributor to sustainable consumption.'*

- The research provides a fresh take within sustainable consumption, while the concept of usury is old, next to sustainable consumption is it not.
    - The research has described the goals of sustainable consumption in chapter 3 and the impact of the financing models can be found in chapter 6.
    - Chapter 6 shows that choice of models can affect sustainable consumption
    - Chapter 3 shows how a model was built and in itself contributes to sustainable consumption

7.7.2. Objective 2

- *'to provide food for thought to the reader by describing the meaning of why things are the way they are by using paradigms in the hope that new perspectives on sustainable consumption and sustainability in general will be forged'*

- Chapter 2 introduces systems and paradigms and how arguments and models are built using these arguments.

8. Conclusion

'But beware! The time for all this is not yet. For at least another hundred years we must pretend to ourselves and to everyone that fair is foul and fouls is fair; for foul is useful and fair is not. Avarice and usury and precaution must be our gods for a little longer still. For only they can lead us out of the tunnel of economic necessity into daylight' (Keynes 1930)

8.1. Introduction

In the conclusion to the research, the research offers, the gist of the research findings, then the limitations of the research follow, with an aim to allow the reader to assess validity, next with humility the research offers recommendations to the main actors upon the research is aimed at with special mention of what can be done in future by other researchers. Finally the research offers some concluding remarks.

8.2. The essence of the research findings

The research set out to find whether the way we finance has an influence on sustainable consumption. The result of the endeavour was that the way we finance does influence sustainable consumption. This was achieved by contrasting two financing models against the backdrop of the goals of sustainable consumption. This demonstrated Islamic financing is positively aligned to the goals of sustainable consumption while usurious financing is negatively aligned to the goals of sustainable consumption.

In the course of determination the researcher additionally has taken away that the three most influential economists of our time were Karl Marx the pessimist, Adam Smith the optimist and John Maynard Keynes the pragmatist (Pressman 2006). All of them knew the power of usury in creating money wealth but at the same time knew it brought on instability. Marx likened usury to a parasite, Smith was worried about prodigals and projectors and Keynes hoped that his grandchildren would find usury as foul. However, they realised that it served a time and place and reluctantly accepted its state. While this paper might give the impression that our founding father of economics were short-sighted Sen (2009a) reminds us that all of these great economists also shared philosophical works in aid that we understand their ethical frameworks for decision making. After all has been said and done, all of these great men were mere mortal, who set out to improve lives.

8.3. Research limitations

The research acknowledges the process of learning for the award of a Master of Business Administration degree and with that, the pressurised environment for delivery. A delivery potentially thwarted with omissions and errors as only time constraints can bring.

Secondly the researcher observes the Islamic faith, and with that comes years of faithful belief to the value system, this fact probably has impacted the research on two levels:

- Objectivity
    - The researcher must and is acknowledging a level of at least unconscious bias, when dealing with the religious aspects of this research; however the research has tried to be clear, that while there may be religious connotations, this paper is in fact about survival, the survival of humanity.
- Tacit knowledge
    - While every endeavour was tried to ensure linkages of concepts and positions, undoubtedly, there has been omissions based on deeply embedded knowledge that has been unable to come to the fore.

Thirdly, the researcher's skill and limitations thereof; It is without a doubt that the qualitative nature of this research has relied heavily on the researcher skills to provide thematic evidence and a systematic approach to the responses, it is therefore only natural that the skill set of the researcher must be a limitation. By how much has this reduced the quality of this research, only the reader can determine.

Lastly, the paradigm of the research of which the study has undertaken; by default the interpretive paradigm is subjective and it rightly has its place in the world of research, however the fact that the research is undertaken with a level of subjectivity might allow the researcher to stretch the limits of this subjectivity unconsciously.

8.4. Recommendations

The finding of this research has led to the opportunity of offering some recommendations. The research offers these with humility and with an understanding of the research limitations. The recommendations take form by directing the recommendations to potential category of readers.

8.4.1. Government

Al Gore at a presentation in 2008 (TED, 2008) suggested the climate crisis is a global crisis and as such deserves worldwide response but in order to mobilise a worldwide response the political will first has to be mobilised in order to respond with the necessary resources. Governments are beginning to recognise that sustainable consumption is paramount in alleviating the climate crisis; however the nature of politics sees this ‘political will’ that Al Gore describes as lacking. This research recommends that in order to tackle the climate crisis we use every measure possible. The Government has at its disposal the ability to make and pass laws, this research is clear, usurious financing is jeopardizing our survival. Usury must be outlawed. If that is too extreme at least begin in revisiting policy alternatives, the policy of GDP as a primary measure to economic well being or Gesell’s natural economic order, or better still create incentives or subsidies that allow people to use non usurious products.

Government must also look carefully into the implication of government bonds for public financing. While this research cannot recommend any direct solution for public financing, but perhaps the answer is with those that have not adopted usurious financing as a means for public financing.

Governments must play a role in communicating the aims of sustainable consumption to its constituent's. Social marketing as described by Andreasen, (2002) is "a process for developing social change programs that is modelled on processes used in private sector marketing" (Andreasen 2002, p. 7) is one such tool in communicating these aims. Andreasen (2002) research proves that social marketing works by heightening awareness around the content it is marketing. In this context marketers could come with far more imaginative ideas how usurious financing affects sustainable consumption.

Many of the educational institutions of a land are funded with government budget allocations. Given this, the Governments are in a position to put pressure on educators to include topics of sustainable consumption or related into the curriculum. Not only does this, sensitize impressionable minds but allows these minds to focus on potential plans to achieve sustainable consumption.

8.4.2. Business

The recommendation for business in general is to ask their leaders to reconnect the business purpose in the context of society and to reflect that purpose in their products and services with embodies the societal values. The business purpose at its foundation is to serve society at large as it is society that gives them their station, and attaining sustainable consumption is in the best interest of society.

At an implementation level businesses at large must take heed of the call of the WSSD. Business must ensure all products and services must undergo the lifecycle assessment. If Business can do the LCA, the adoption of the WBCSD approach to making sustainable consumption mainstream can occur by;

- creating innovative products that have at the lowest possible ecological footprints;
- by communicating the effects of their products or service with regard to sustainable consumption to influence the consumer; and
- to remove unsustainable products and services from markets.

From an industry perspective, this research specifically impacts the financial industry. Financial institutions through this research can heed the call of WBCSD by giving their customers all the relevant information for the customer to determine whether a usurious financing product is sustainable. They can also edit their product ranges to remove any unsustainable products from their offerings. The research also recommends that financial institutions see this as an opportunity for innovation, innovation that benefits society and shareholders. The Financial industry can look at non usurious offerings of Islamic finance institutions and others notables such the Swedish Jak Bank on how best to incorporate the lessons learnt. The research recommends that mainstream financial institutions must be watchful as Islamic financing could be considered a disruptive innovation.

8.4.3. Individual

The research recommends that Individuals must become activist, activists at two levels, as consumers and as citizens.

- Consumer activist as they must demand from business, product or service information pertaining to the sustainability. Consumer activists must also educate themselves on the business itself, in respect to social initiatives, green initiatives and capital structure especially pertaining to how the business is financing. Based on these activities consumers can decide for themselves.
- Civic activist as they must engage with Government to create political will to mobilise resources and to changes policies that are conducive for effecting sustainable consumption more so around usury laws.

Individuals must understand that the paradigm of growth must end, the earth can no longer support growth. Individuals must live a more minimalistic lifestyles and share resources as opposed to hoarding or extravagant consumption of resources.

8.4.4. Researchers

The research recommends further research in the following areas;

- Research that quantifies the effects of usurious financing on the goals of sustainable consumption.

- Research that can illustrate through observation how Islamic financing or non usurious financing effects the world system.
- Research that can solidify the concept of sustainable consumption
- Research that can pick up from and build Silvio Gesell's natural economic order.

8.5. Concluding remarks

We are the only species on earth that can consciously choose to go against reason, reasons that may be premised on force or logic. At a time when there was wide spread adoption of usurious financing, the reason for not adopting seemed illogical, abundance of natural wealth was all around to be seen and the social fabric was considered tightly woven. However time, as always has shown us the consequences for our decisions and shown us that the persistence of our ideologies has been illogical. Within systems thinking, perhaps we are witnessing evolution and my only hope is that it is not an evolution that sees the end of man.

I would like to conclude by quoting an old African proverb. In a simple way it speaks to our economic heritage and potentially our economic future;

"If you want to get there fast, go alone, if you want to go far, go together".

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Appendices

Appendix 1 - List of definitions of capital; source: (Fisher 1896, p.511)

TURGOT :—' Whoever . . . receives each year more value than he has need of spending, can put in reserve this surplus and accumulate it. These accumulated values (*valeurs accumulées*) are what is called Capital . . . It is of absolutely no consequence whether this sum of values or this capital consists of a mass of metal or of anything else, since money represents every kind of value just as every kind of value represents money.' *Réflexions sur la formation et la distribution des richesses*, § LIX.

ADAM SMITH :—' [A man's] whole stock, therefore, is distinguished into two parts. That part which he expects is to afford him this revenue is called his capital.' *Wealth of Nations*, Book II., Chapter i.

RICARDO :—' Capital is that part of the wealth of a country which is employed in production and consists of food, clothing, tools, raw materials, machinery, etc., necessary to give effect to labour.' *Principles of Political Economy*, § 37.

SENIOR :—' [Capital is] an article of wealth, the result of human exertion, employed in the production or distribution of wealth.' *Political Economy, Encyclopædia Metropolitana*, vol. vi., p. 153.

JOHN STUART MILL :—' . . . besides the primary and universal requisites of production . . . there is another . . . namely, a stock, previously accumulated, of the products of former labour. This accumulated stock is termed Capital . . . The distinction, then, between Capital and Not-capital, does not lie in the kind of commodities, but in the mind of the capitalist—in his will to employ them for one purpose rather than another; and all property, however ill adapted in itself for the use of labourers, is a part of capital, so soon as it, or the value to be received from it, is set apart for productive reinvestment.' *Principles of Political Economy*, Book I., Chapter iv., § 1.

KLEINWÄCHTER :—' The conception of capital should be limited to tools of production.' *Grundlagen des Socialismus*, 1885, p. 184. He excludes raw materials as passive. They are worked up by means of tools but are not themselves tools.

BÖHM-BAWERK :—' Capital in general we shall call a group of Products which serve as means to the Acquisition of Goods. Under this general conception we shall put that of Social Capital as narrower conception. Social Capital we shall call . . . a group of Intermediate Products.' *Positive Theory of Capital*, English translation, London and New York, 1891, p. 38.

MARX:—' We know that the means of production and subsistence, while they remain the property of the immediate producer, are not capital. They become capital only under circumstances in which they serve at the same time as means of exploitation and subjection of the labourer.' *Capital*, English translation, London, 1887, vol. ii., p. 792.

McCULLOCH:—' The capital of a country consists of those portions of the produce of industry existing in it, which may be *directly* employed either to support human beings, or to facilitate production.' *Principles of Political Economy*, 4th edition, p. 100.

KNIES:—' " Capital " is to be regarded as a stock of goods which are left over from or cannot be employed for the satisfaction of current present wants and therefore are free to be applied to economic employment at another time.' *Das Geld*, 2nd edition, 1885, pp. 69–70.

HERMANN:—' [Capital is] every durable source of utility which has exchange value.' *Staatswirthschaftliche Untersuchungen*, Munich, 1832, p. 59.

WALRAS:—' I call, as did my father in his *Théorie de la richesse sociale* (1849), *capital* in general every kind of social wealth which is not consumed at all or which is consumed only after a long time, every commodity limited in quantity which survives the first use to which it is put, in a word, which serves more than one use.' *Éléments d' économie politique pure*, Lausanne, 2nd and 3rd editions, p. 197.

JEVONS:—' Capital, as I regard it, consists merely in the *aggregate of those commodities which are required for sustaining labourers of any kind or class engaged in work.*' ' I would not say that a railway *is fixed capital*, but that *capital is fixed in the railway.*' *Theory of Political Economy*, 3rd edition 1888, chapter vii., pp. 222 and 242.

MACLEOD:—' Capital is any Economical Element [including land, workman's labour, credit, incorporeal estates such as " the Law," " the Church," " Literature," " Art," an author's " mind," " Education," etc.] appropriated to the purpose of profit, or increase.' *Dictionary of Political Economy*, Article ' Capital,' p. 331.

J. B. CLARK:—' The fund, Capital, resides in many unlike things, but consists of a single entity that is common to them all. That entity is " effective social utility." So much of this as a business man retains embodied in instruments of production constitutes his permanent capital, however the instruments may come or go in exchange, and however they may perish or be restored through use.' *Capital and its Earnings*, Publications of the American Economic Association, 1888, p. 11.

Appendix 2 - Overview of Silvio Gesell and his natural economy order by (Kennedy 1995)

“Towards the end of the 19th century Silvio Gesell, a successful merchant in Germany and Argentina, observed that sometimes his goods would sell quickly and yield a high price, and at other times slowly and attracted lower payments. He began to wonder why this was so. Soon he understood that these ups and downs had little to do with the needs of people for his goods, nor their quality, but almost exclusively with the "price" of money on the money market. So he began to observe these movements and discovered that when interest rates were low, people would buy, but if they were high, they would not. The reason why there was sometimes more, sometimes less money, had to do with the willingness of the money owners to lend their money to others. If the return on their money was under 2.5%, they tended to hold on to their money - thus causing a halt in investment, with subsequent bankruptcies and decreasing numbers of jobs. Then after a while, when people were ready to pay more interest for their money, it would be available again - thus creating a new economic cycle. There would be high interest rates and high prices for goods at first, then gradually a larger supply of money would create lower interest rates, and finally there would be a "strike" of capital again. Silvio Gesell's explanation for this phenomenon was that money, unlike all other goods and services, can be kept without costs. If one person has a bag of apples and another person has the money to buy those apples, the person with the apples is obliged to sell them within a relatively short time period to avoid the loss of his assets. Money owners, however, can wait until the price is right for them; their money does not necessarily create "holding costs. "

Gesell concluded that if we could create a monetary system which put money on equal footing with all other goods and services, (charging, on the average, a 5% annual maintenance cost, which is exactly what has been paid in the form of interest for money throughout history) then we could have an economy free of the ups and downs of monetary speculation. He suggested that money should be made to "rust," that is, to be subject to a "use fee."

In 1890, Silvio Gesell formulated a theory of money and a "natural economic order" (6) which relates to capitalism or communism as the world of Copernicus does to the world of Ptolemy. The sun indeed does not turn around the earth; the earth turns around the sun - although our senses still defy this scientific truth. Gesell suggested securing the money flow by making money a government service subject to a use fee. And this is the central message of this book. Instead of paying interest to those who have more money than they need and in order to keep money in circulation, people should pay a small fee if they keep the money out of circulation.

In order to understand this idea better, it is helpful to compare money to a railroad freight car which also helps to facilitate the exchange of goods and services. In contrast to governments which issue money, however, the railroad company does not pay the user a premium to unload the freight car and thereby bring it back into "circulation" - instead the user pays a small per diem fee if he or she does not unload it. This is all we would have to do with money. The community or nation which issues "new" money in order to help the exchange of goods and services charges a small "parking" fee to the user who holds on to new money longer than he or she needs for exchange purposes. This change, simple as it may seem, resolves the many societal problems caused by interest and compound interest throughout history. While interest nowadays is a private gain, the fee on the use of money would be a public gain. This fee would have to return into circulation in order to maintain the balance between the volume of money and the volume of economic activities. The fee would serve as an income to the government, and thereby reduce the amount of taxes needed to carry out public tasks. The technical side of this monetary reform will be explained in the next two sections.

THE FIRST MODEL EXPERIMENTS

During the 1930s, the Freiwirtschaft (free economy) followers of Gesell's theory found opportunities to initiate interest-free money projects, in order to overcome unemployment and to demonstrate the validity of their ideas. There were endeavours to introduce free-money in Austria, France, Germany, Spain, Switzerland, and the United States. One of the most successful was in the town of Wörgl in Austria. (7) Between 1932 and 1933, the small Austrian town of Wörgl started an experiment which has been an inspiration to all who have been concerned with the issue of monetary reform up to this day. The town's mayor convinced the business people and administrators that they had a lot to gain and nothing to lose if they conducted a monetary experiment in the way suggested in Silvio Gesell's book The Natural Economic Order. People agreed and so the town council issued 32,000 "Work Certificates" or "Free Schillings" (i.e., interest-free Schillings), covered by the same amount of ordinary Austrian Schillings in the bank. They built bridges, improved roads and public services, and paid salaries and materials with this money, which was accepted by the butcher, the shoemaker, the baker. The fee on the use of the money was 1% per month or 12% per year. This fee had to be paid by the person who had the banknote at the end of the month, in the form of a stamp worth 1 % of the note and glued to its back. Otherwise, the note was invalid. This small fee caused everyone who got paid in Free Schillings to spend them before they used their ordinary money. People even paid their taxes in advance in order to avoid paying the small fee. Within one year, the 32,000 Free Schillings circulated 463 times, thus creating goods and services worth over 14,816,000 Schillings. The ordinary Schilling by contrast circulated only 21 times. At a time when most countries in Europe had severe problems with decreasing numbers of jobs, Wörgl reduced its unemployment rate by 25 % within this one year. The fees collected by the town government which caused the money to change hands so quickly amounted to a total of 12% of 32,000 Free Schillings = 3,840 Schillings. This was used for public purposes. When over 300 communities in Austria began to be 23 interested in adopting this model, the Austrian National Bank saw its own monopoly endangered. It intervened against the town council and prohibited the printing of its local money. In spite of a long-lasting battle which went right up to the Austrian Supreme Court, neither Wörgl nor any other community in Europe has been able to repeat the experiment up to the present day." (Kennedy 1995, p.19)