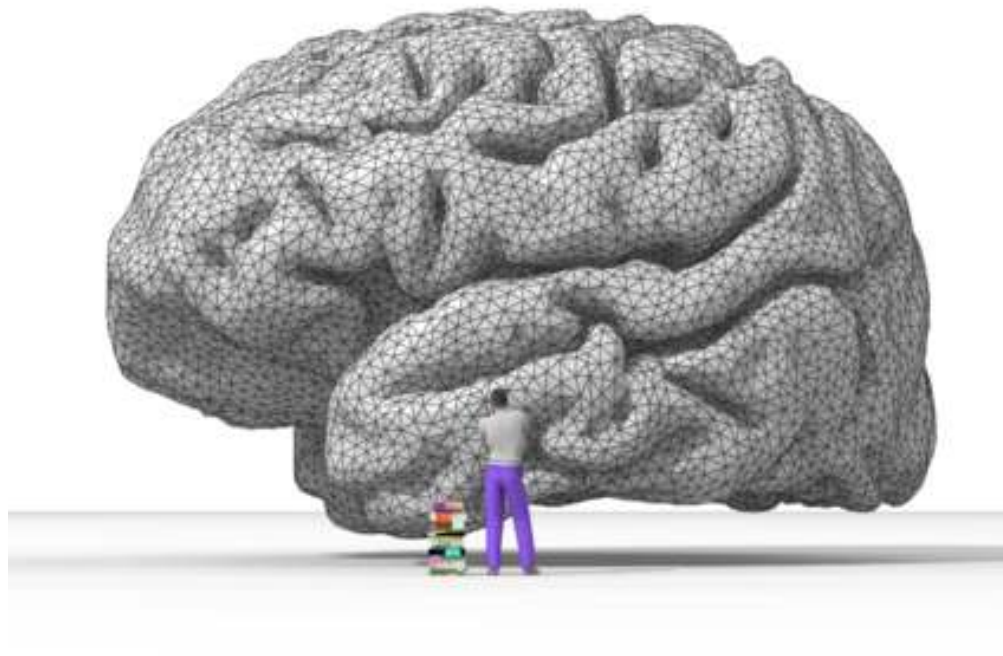




LUND
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**LUMES – Lund University International Master’s
Programme in Environmental Studies and
Sustainability Science**

Achieving sustainability via the market for green funds
-Perceived and underlying reasons influencing the green investors-



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Abstract

"A man receives only what he is ready to receive, whether physically or intellectually or morally... We hear and apprehend only what we already half know"

Henry David Thoreau

SRI makes the link between market and sustainability. By its purpose and design SRI is addressing some of the environmental problems. The SRI retail market is currently undersized. The existing studies about the individual green investors focus more on demographic variables. This paper had investigated the perceived reasons, cognitive biases and internal barriers affecting the green investor. The findings suggest that the rationality of the green investors goes beyond economic reasons. This study has found evidence of *selective perception* and *déformation professionnelle* as well as the *framing effect* as biases leading to the “green” investment choice. The study of *loss aversion* bias has lead to a discussion on what seems to be a *paradox* as the perception of losses affects green investors in a non-monetary way. Results of the interviews suggest the lack of *bandwagon effect* and *optimism bias* among green investors. The research on *halo effect* biases was inconclusive.

One of the outputs of this study is a causal loop diagram and a collection of factors that influence green investors. Based on the analysis of the findings several suggestions are made in order to support sustainability fund managers in developing their financial products.

Key words: cognitive biases, ethical investments, green investors, sustainability mutual funds, social responsible investing.

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Last but not least this thesis would have not been possible without the comprehensive and inclusive responses from so many people across the world, people that sacrificed their time to go through my numerous and repeated questions.

Abbreviations and Acronyms

a.n.	author note
CERES	Centre for Education and Research in Environmental Strategies
CO ₂ e	Carbon Dioxide emissions
CSR	Corporate Social Responsibility
EMS	Environmental Management Systems
EUROSIF	European Social Investment Forum
E.F.G.	Ethical Focus Group Interview
NEFG	Non Ethical Focus Group Interview
IPO	Initial Public Offering
ISO	International Organization of Standardization
LSE	London Stock Exchange
NGO	Non governmental organization
S&P 500	Standard and Poor's financial index of the top 500 companies on LSE
SRI	Socially Responsible Investing
UNEP	United Nations Environmental Program
VC4S	Venture Capital for Sustainability

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1. Introduction

If global warming is the biggest market failure we have ever seen so far as stated by the Stern Report, can the market by itself solve this problem? By aiming to link the market to sustainability issues social responsible investing (SRI) is a possible answer to the above question.

In 2005 in the United States there were \$2.29 trillion (USD) invested in assets classified as SRI, an increase from 2.16 trillion in 2003¹. In the US there were 201 socially screened mutual funds, a 200% increase from 1995. Shareholder advocacy² has also steadily increased. In 2005, 348 proposals were issued, as compared to 299 in 2003, and the assets managed by institutional investors in the SRI field were about \$703 billion in 2005.³

In Europe there are about 300 mutual funds that are managed according to sustainability and social responsibility principles⁴. The core SRI⁵ investments were at the end of 2005 €105 billion and broad SRI rose to €1.033 trillion⁶.

SRI essentially influences companies towards more sustainable outcomes in two fundamental ways: through direct *action* or “*inactions*.” The inactions basically mean the refusal of the refusal by fund managers to invest in “bad” companies. Current strategies employed by SRI involve ethical exclusions, positive screening, best in class, pioneer screening, norm based screening, simple screens, engagement and integration.

Those above-mentioned approaches elucidate a positive response by the corporate sector and green investors. The amounts involved in the sector are definitely an encouraging start towards addressing some of the major environmental and sustainability problems.

¹ Social Investment Forum *2005 Report on Socially Responsible Investing Trends in the United States* Social Investment Forum Foundation, 2005

² The term *shareholder advocacy* describes investor efforts to submit and vote corporate proxy resolutions as a means of influencing company behavior

³ Social Investment Forum, *supra* note 2

⁴ Koellner, Thomas; Weber, Olaf; Fenchel, Marcus; Scholz, Roland *Principles for Sustainability Rating of Investment Funds* Business Strategy and the Environment, 2005, p. 54-70

⁵ *Core SRI* include ethical exclusions, positive screens (including Best-in-class, Pioneer screening),

⁶ *Broad SRI* includes core SRI plus simple exclusions, including norms-based screening, plus Engagement and Integration.

However, they are not sufficient to address global environmental concerns. Only the annual costs associated with global warming (stabilizing CO2 emissions at 500-550ppm by 2050) are estimated at around 1%⁷ of the global GDP (*a.n. \$650 trillion USD*). So on the one hand there are around \$3.68 trillion (SRI in US and Europe) working for the cause of sustainability, while on the other hand the needed resources amount to \$650 trillion – and global warming is just one of the environmental problems. The gap between needed and available resources involved in SRI is obviously too wide. Of course it is not only SRI that has to solve global warming but it can definitely contribute. It is clear that the current amounts involved in green investing are not sufficient and the current growth rate (approx. 1%/year in Europe⁸) has to be accelerated in order to have a significant and timely impact. The question that now arises is how.

A study⁹ on SRI trends in Europe suggested that one answer lies in the retail market. This market currently represents only 6% of the total. The same study clearly stated that: “*one of the outstanding drivers for growth of SRI assets is the increasing understanding by investors of the impacts of social, environmental and ethical issues on the economy.*” So if the market for green investing is to be developed, further comprehension of this main driver - the *individual understanding of ethical issues* (including sustainability) can lead to increases in SRI.

1.1 Problem background and statement

The environmental discourse in politics, media and academia about green and sustainability issues has led to the emergence of the green investors, individuals that are both environmentally aware and willing to invest their money on sustainable financial products. The existing studies on the green investors usually portray them using demographic variable such as age, gender, religion and profession¹⁰. There are few studies that portray the green investors from other perspectives. Moreover research in the related field of green consumption acknowledges that “*the relationship between environmental concern and socio demographic variables is unclear, and they fail to work*

⁷ Stern Nicholas, *Stern Review executive summary*. New Economics Foundation 2006

⁸ *European SRI Study, 2006*, p. 11 - increase in core SRI

⁹ *Ibid, ,2006, supra note 9*, p 9

¹⁰ Describes how people are like in terms of sex, age, social class, ethnic origin

as predictors of environmentally related behavior”¹¹. **A more detailed account about green investor based on other variables and perspectives seems to be needed.**

Within the frame of global change problems, this thesis will specifically investigate the perceived and underlying reasons, as well as the internal barriers for green investing. Based on that understanding the thesis attempts to highlight predictors for green investors and recommendations for various policies and strategies that will increase the market of green funds.

1.2 Research questions

In order to investigate the central problem posed by this thesis, and to establish ways to increase SRI, the research will answer three main research questions:

- What are the perceived reasons leading to the decision to invest in green financial products?
- How do the underlying factors apply to the green investor?
- What are the individual’s internal barriers preventing the decision to invest in green products?

1.3 Objective and purpose

The **purpose** of this study is to identify predictors of the green decision in order to allow business development for fund managers.

The **objective** of the research is:

- To build a conceptual framework of how to evaluate the green investors.
- To develop a causal loop diagram of the perceived and underlying reasons influencing a *green investor*
- To describe the profile of the typical green investor

¹¹ Peattie, Ken; Environmental marketing management : meeting the green challenge / Ken Peattie : Pitman Publishing 1995 p 156

1.4 The research process

Understanding the relevant aspects of the green investor's profile called for **qualitative research**. Qualitative research usually offers a rich narrative construct of social phenomena and emphasizes words rather than numbers. It was seen as suitable for an investigation of lifestyle, choices, motives and reasons involved in the paper. The research draws forth knowledge using concepts of the grounded theory method. Often used in social science, this approach focuses on theory emerging from data. Its proponents define it as an approach to qualitative research that use a "*set of procedures to develop an inductively derived grounded theory about a phenomenon*"¹². The aim was the one suggested by Becker¹³ - to establish the major components or categories in the empirical data, their relationships, the context and the process, and thus providing a theory of the phenomenon that is not simply descriptive.

The research is divided into two parts – literature review and interviews. The **literature review** aims to acquire knowledge on the reasons for investing, on the underlying factors influencing decision as well as on reasons behind the green choice. **Interviews** with individual green investors were conducted to complete and reinterpret the literature findings.

In the first part, in the literature review data concerning the retail market for sustainability funds as well as consumer/investor profiles was collected. Empirical data from interviews are used to verify and complete the literature findings. The literature review was conducted as a theory review having focus on the link between *capital* and *sustainable development*. The method used for the review is saturation.¹⁴ In other words background information regarding green investing and ethical or environmental funds were reviewed in the existing literature. The goal of the literature review is to understand the link between sustainability issues and the decision to invest in green funds. Studies

¹² Strauss & Corbin, 1990 p. 24

¹³ Becker, P. H. (1993). Common pitfalls in published grounded theory research. *Qualitative Health Research*, 3, 254-260. 1993

¹⁴ *ibid*, p. 305

about global warming, sustainability indexes, fund ranking, SRI trends as well as marketing studies about consumer profile or investor's profile were reviewed. Behavioral finance research about biases or studies modeling investor behavior and environmental psychology studies about optimism bias and framing bias in relation to environment were also examined.

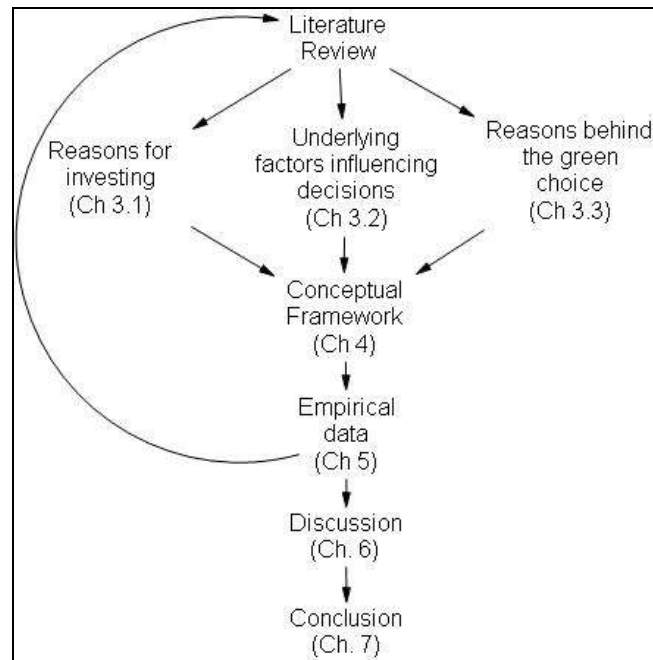


Figure 1 Research Design

The second part of the research has involved **interviews**. There are two types of interview subjects: individual green investors and green funds officials. In this way a dual view of the market for green capital is revealed, both from the inside – understanding the current offer – and from the outside – to understand the needs of the investors. This research has used several types of interviews: telephone, on-line asynchronous¹⁵ personal interviews, and personal / face-to-face interviews. Interviews were conducted with green funds employees as well as with individual green investors. The former were used in the beginning of the research to obtain the background information and pre-knowledge. The latter constitutes the most important source used in the findings section of the paper. On-

¹⁵ This method implies that the interviewer and the interviewee are not on-line on the same time

line semi-structured asynchronous interviews supplemented by telephone interviews were deployed. This type of interview allows the researcher to refer, if necessary, to the interviewee several times before completing the research.¹⁶ The approach used was one suggested by Bamton and Cowton,¹⁷ whereby the questions were sent beforehand to give time for the interviewee to reflect, and “greater opportunity to respond.” In this way the interviewees could think over the specific topic and give considered replies. Some authors¹⁸ even suggest that such interviews can lead to mutual trust in a number of cases, and are better used when aiming for long-term relationship. Afterwards new questions and any misunderstandings were discussed and clarified in a phone conversation.

Twenty-one persons working for sustainability funds were contacted out of which 4 responded. Fund officials usually have a good understanding of their investors. Some have direct contact with a large number of investors and can point out to prevalent needs and attitudes. Their information was used in order to acquire the pre-knowledge necessary to understand funds’ activities better as well as the main concerns of green investors.

The selection of a statistical random representative sample for all green investors was clearly impossible. It was not feasible to enumerate the European or the US self defined green investors. As an alternative to locate individual green investors, approximately 1,971 persons on different e-mail lists were contacted. The *Business & Finance-Investments* section on Yahoo was used. People were contacted and asked to participate in a phone interview if they had any form of green/ethical/environmental financial investments. Ten green investors were identified and interviewed in this way. Among them there was one face-to-face interview. On average, the phone interviews lasted for about 20-30 minutes and the all of the answers were recorded and transcribed for precision. The aim of the interview was to evaluate the main reasons and drivers they had for investing on this specific type of market. (see also **appendix 1**). The semi-structured interviews were chosen due to the fact that this method gives a certain freedom and

¹⁶ Bryman, Alan *Social research methods / Alan Bryman* 2. ed. Oxford University Press, cop., 2004 p.478

¹⁷ cited in Bryman p. 479

¹⁸ Mann and Stewart 2000, cited in Bryman p.138

leeway to the interviewee¹⁹ while still keeping to the theme. This approach engendered the interviewee's personal experience in investing (e.g. preferred funds, invested amounts, information sources etc.). Open questions were used to allow for interviewee's unforeseen opinions to emerge. For a consistency check, the same intended meaning was phrased differently in different questions.

The transcripts from 14 focus group interviews²⁰ with 36 "ordinary" investors and 42 "ethical/green" investors were also acquired from ESRC qualitative data archive²¹. The initial aim of the focus groups was to investigate the range of motivations for investing as well as any moral dilemmas facing an investor in the green investment process. For the purpose of this thesis these data were screened with regard to the research questions and used as second-hand data. The screen was based on the content analysis method developed by Hartman and Hag.²² The small sample size did not allow for consistency check within the data. This method suggests that interview transcripts can be scanned for indications of cognitive biases²³. Open-ended written responses to questions about the main reasons for green investing were scanned for indices of bias. It has to be noted that the focus group transcripts were not obtained directly by the author.

In total the **empirical material** consisted of 153 pages of transcripts from focus group interviews obtained from ESRC qualitative data base as well as of 33 pages and 215 minutes of recorded interviews obtained by the author.

¹⁹ Bryman Allan, supra note 10, p. 320

²⁰ Lewis Alan. *A focus group study of the motivation to invest: 'Ethical/green' and 'ordinary' investors compared*; Journal of Socio-Economics, 2001 p. 331-341

²¹ <http://www.data-archive.ac.uk/> accessed on 10th of May 2007

²² Hartman-Hall, Heather M.; Haaga, David A. F. Content Analysis of Cognitive Bias: Development of a Standardized Measure, Journal of Rational-Emotive and Cognitive-Behavior Therapy 1999 p. 105-114

²³ Hartman-Hall et al. p 105

1.5 Scope and limitations

This thesis will focus only on the individual investors acting on the retail market of SRI. In Europe²⁴, Canada and other countries the institutional SRI has a high market share, and was regarded as well developed.

The paper will analyze the SRI market represented by the mutual funds commonly coined as green/sustainability funds. The numbers shown in Chapter 2 as well as the market dynamic indicate that these funds are reasonably flexible and adaptable to investor needs. Therefore, being in the fore-front of green investing, the mutual funds can adapt more easily to meet the evolving need of investors as well to advances in understanding their behavior.

This paper will not focus on the issue of sustainability rating or market transparency²⁵. Rather it considers that one Euro attracted to green funds is a net gain to sustainability. The ranking of non-financial performance of green funds has already been researched and findings by Jeucken, 2001 and Kahlenborn, 2001 as well as reports from the green investor forums have provided good clarification to these issues²⁶. Eco-labeling, product tests, environmental standards, and corporate environmental reports are some of the suggested solutions that can improve accountability and transparency.

It is not in the scope of this paper to propose policies, rules or strategies to address the current situation. The focus was solely on the individual. Therefore there was no need to conduct a stakeholder analysis.

It is not within the scope of this paper to address complete marketing strategies for the green/sustainability funds. Rather, it will suggest various approaches. The focus is to understand the perceived reasons and underlying psychological factors for the green decision on which to ground such strategies.

²⁴ 94% market share in Europe

²⁵ Koellner et al, supra note 4

²⁶ *European SRI Study*, supra note 6

1.6 Definitions

For clarification and ease of understanding the important concepts of this paper are further defined.

Green investment is defined in this paper as *any form of financial investment whereby the investor pays attention to ecological goals as well as the traditional aims of an investment*²⁷

Sustainability funds²⁸ are defined in this paper in the broadest sense, ranging from ethical funds or eco-efficiency funds (which focus on cleaner technology) to sustainability funds (which take ecological, socio-cultural, ethical and economic aspects into account, all at the same time). Sustainability funds can be large cap stock funds (mixtures of multinational companies), pioneer stock funds (only small and medium sized companies in the technology development sector, such as solar energy companies) or bond funds. They are also referred to in the paper as green funds. (see also **Table 1**)

Socially responsible investing describes *an investment strategy which combines the intentions to maximize both financial return and social good*. In general, socially responsible investors favor corporate practices that are environmentally responsible, support workplace diversity, and increase product safety and quality.

A **cognitive bias** is defined²⁹ as *some form of difference from some “true” or objective value* but most of the times by a breach to the basic laws of probability³⁰ (also referred to in the text as **underlying reason**)

A **reason** is the cause of an event or situation or something which provides an excuse or explanation³¹.

²⁷ Kahlenborn W.. *Transparency and the green investment market*. In *Sustainable Banking. The Greening of Finance*, Bouma JJ, Jeucken M, Klinkers L (eds). Greenleaf: Sheffield; 2001; p. 123–186

²⁸ O'Rourke, A. *The message and methods of ethical investment*: Journal of Cleaner Production 2003 p. 683-693

²⁹ Gilovich T, DW Griffin, D Kahneman Heuristics and Biases: the Psychology of Intuitive Judgement 2002

³⁰ Not to be seen as a normative statement

³¹ Cambridge dictionary

2. Background of SRI

2.1 SRI phenomenon

The values embedded within SRI are historically rooted within the principles reflected in developments of religious institutions. For example, as early as 1703 the Quakers in Philadelphia and the Methodist church were imposing ethical standards on their communities. These values and standards remain an important reference point and are in use even today.



Figure 2 Vietnam War - My Lai Massacre

In the twentieth century, the Vietnam War served as a catalyst for the reemergence of SRI, and its transformation in meeting social values concerns.

The message of the above picture is believed to have initiated the modern SRI movement. It incited public outrage against Dow Chemical, the producer of the napalm used in bombs dropped on Vietnamese villages, and against other companies benefiting from the war. The linkage between industrial output and SRI was thus forged. Since then SRI activism was involved *inter alia* in controlling automobile emissions, in enhancing policies to regulate nuclear power and in pressuring against apartheid policies in South Africa.

In the recent decade the links between the financial markets and sustainability have become more evident. An overview of this relation between finance and sustainability is given in Schmidheiny and Zorraquin's 1996 book *Financing Change*³². The authors investigate the ability of the world's financial markets to sustain development and human

³² Schmidheiny, S., and F.J. Zorraquin, 1996: *Financing Change*. MIT Press, Cambridge, MA.

progress over the long-term. Chad Holiday³³ presents seven concepts whereby markets and to some extent companies can transform themselves to directly contribute to sustainability. However, the topic of the present study, the market for sustainable funds, called for a more narrow type of research. There are a fair number of papers covering some of the most recent developments in this area. For instance some of the latest studies evaluate the potential of venture capital and how it can contribute to sustainability.^{34 35}

2.2 Facts and figures about SRI

Trends in the world:

- The number of funds that are adopting SRI principles is increasing as are the number and types of screening strategies
- There are a growing number of cases of sustainability funds engaging in dialogue with the company they are investing in.
- Emerging market countries are increasingly becoming interested in SRI, especially community investing and microfinance.
- SRI awareness is rising as well as the need for information about how financial markets influence sustainability.
- Ten years ago, SRI outside the US was in its early stages; today the figures show a vigorous market with amounts matching those in the US.

Figures

- **In Europe** there were €336 billion³⁶ in assets that are involved in different areas of social investing.
- **In Europe** the real market growth of core SRI is only 1%
- The growth of **European** broad SRI is 36%.
- **In Canada** SRI growth³⁷ was - 27% for the two years before June 2004 amounting to CAN\$ 65.46 billion in assets. The retail market was CAN\$ 14.8 billion by mid-2004. Much of the increase is credited to the growth of alternative energy income trusts.

³³ Chad Holiday *et al.* paper *Sustainability through the market*

³⁴ *Venture Capital for Sustainability in 2007* accessed at www.eurosif.org accessed on 10th of May 2007

³⁵ Randjelovic, Jelena *et al.* *The Emergence of Green Venture Capital* 2003

³⁶ the European Sustainable and Responsible Investment Forum (EuroSIF)

³⁷ The Social Investment Organization (SIO)

- **In Australia**³⁸ SRI funds portfolios rose to 70% to AUD\$ 7.67 billion
- **Japan** is Asia's leading market for SRI. There are over 100 billion yen in a dozen SRI funds.
- **SRI practices have become common in Taiwan, Singapore, Hong Kong and South Korea** The International Finance Corporation (IFC) estimates that SRI assets in emerging markets total \$2.7 billion.

2.3 SRI strategies and their links to the pillars of sustainability

This section shows how the SRI industry contributes to sustainability. The concept of sustainable development is used as a basis for understanding SRI and its implications. The principles of sustainable development referred to in the literature³⁹ are divided into three 'pillars' - social, economic and environmental. The literature usually identifies a fourth pillar - institutional sustainability.

SRI scope is to address sustainability through financial markets. Each of the main SRI strategies⁴⁰ screening, preference, SRI index trackers and engagement has a specific impact on each of its four dimensions.

Screening is usually of two types and is mostly involved with the **social** dimension of sustainability. It refers to simple screens and is exemplified by investors in deliberately avoiding companies that are involved in tobacco, gambling, weapons manufacturers, pornography etc.

The second through positive screens influences the **technical** pillar of sustainability. It occurs when companies are rated for good performances, from a sustainable point of view, and are selected so then added to the portfolio. A more comprehensive overview of these types of screening is given in **Appendix 3** tables which show the preferred criteria of investing from green fund managers. Jayne's study has showed that still for fund managers "*financial aspects emerge as being the most important*" with social and ethical

³⁸ From June 2004 to June 2005

³⁹ Hawkes J, *The fourth pillar of sustainability: Culture's Essential Role in Public Planning* - 2003 p.3

⁴⁰ Ethical Investment research services, accessed at www.eiris.org on 12th May

considerations as last priorities⁴¹. However the same study shows that fund managers consider as *important* social, ethical and environmental aspects of the companies they invest in. Though often time fund's methodology is unclear SRI and green funds have a contribution on sustainability. As SRI is mostly based on volunteering initiatives the value and importance of this contribution depends however on diligence of each manager and team.

Preference, the second strategy, includes a best-in-class approach when investment is made in companies that have leading performances in their sector. Often this performance is evaluated with regards to EMS and ISO 14001 standards. Through screening and preference, strong signals are sent to the market. Companies that do well and comply with norms and standards are rewarded by capital inflows and investors' interest in them. However, the financial markets responded in a curious and ironic way in the form of the "*vice funds*" that deliberately invest in tobacco, gambling or weapon companies leading to a decrease in the social aspect of sustainability.

SRI index trackers are purpose-built indexes that monitor the performance of the companies that comply with sustainability criteria such as the Dow Jones Sustainability Index, CERES/GRI principles or the Domini Social Index. The Domini Social Index⁴² is an index similar to the S&P 500. This index examines 400 securities which are screened according to social and environmental criteria. *Since its inception in May 1990, the DSI has consistently outperformed the S&P 500*⁴³

Engagement is specifically a proactive strategy. Through their ownership rights, sustainability funds can directly influence the companies they invest in towards more sustainable outcomes. It mainly involves dialogue but also voting practices or shareholder advocacy.

With regards to the "pillars of sustainability" theory it can be deduced that on the SRI market the **economical** aspects are the driving force, with **social** and **environmental** aspects following. In fact adopting sustainability criteria is seen as adding to companies

⁴¹ Jayne Michael Ross, Skerratt Glynn *The requirements of ethical fund managers and property investment* Property Management 2003 p. 147

⁴² *Social Investment Forum* 2005, supra note 1

⁴³ *ibid*, supra note 1

by ensuring good business on the long run⁴⁴. Literature usually mentions a fourth pillar, the **institutional** one⁴⁵. On the SRI market the involvement of institutions is often double sided. One aspect involves direct capital inflows in green funds. Examples include public pension funds such as CalPERS⁴⁶ in the US or the Norwegian Pension Fund Global, Europe's largest SRI fund. NPMF owns assets of approximately €175 billion or through federal investments in green real estate. For individual investors this is relevant as they frequently follow the signals given by the institutions investments in SRI.

2.4 What are the drivers of SRI Growth?

The SRI market has grown rapidly over the past decade. The Social Investment Forum⁴⁷ points out the various drivers and reasons for the rapid growth. Some of them are quoted below. Taken together, all these factors make consumer SRI a flexible and expanding movement.

- **Changes in society's values**

Based on increased social and environmental awareness there was a shift in society's perception towards actions with more responsible outcome, including SRI⁴⁸. Driven by globalization as well as by high profile events such as the Vietnam War and apartheid policies in South Africa financial markets in UK and US began to focus on the potential of SRI to address sustainability problems. Other factors include⁴⁹ economic independence of women, a raise in social and environmental activism shifting policies of multinational companies.

- **Increased awareness of SRI and the success of ethical consumerism**

Most sectors of public life, including government, businesses, NGOs, the public and the press, manifested an increased awareness of SRI issues. Communication flows, media coverage and well-known campaigns – for instance Shell in Nigeria – have facilitated

⁴⁴ Jayne Michael Ross, supra note 31, p.147

⁴⁵ Hawkes J, 2003, supra note 38

⁴⁶ Barber, Brad M, Monitoring the Monitor: Evaluating CalPERS' Shareholder Activism, 2006

⁴⁷ Social Investment Forum - <http://www.uksif.org/consumers-advisers/consumer-sri/drivers-of-growth> accessed on 10th of May 2007

⁴⁸ Social Investment Forum supra note 44

⁴⁹ Ibid

this. This awareness is connected to green consumerism, fair trade, organic products and to flourishing ethical companies such as Co-operative Bank.

- **Increased disclosure and recognition of the business case for CSR**

A higher number of companies began to adopt CSR principles while disclosing information on relevant social, ethical and environmental risks associated with their activities⁵⁰. Lots of companies began to adopt internationally accepted social and environmental standards such as EMS or ISO 14001⁵¹. As a consequence SRI funds have a wider pool of companies to choose from and thus offered more choices to their clients.

- **Increased interest of fund managers in SRI**

Client demand directed fund officials to adopt sustainability principles and to develop green financial products⁵². The change in SRI approaches from negative screening to engagement and shareholder advocacy was another factor that involved investment funds in SRI. Green investors were a good business case for fund manager as they are usually higher income than average unit trust investors. They usually aim for longer-term placements⁵³.

- **Future of Consumer SRI**

Government expenditures within the sustainability field as well as changing policies from the pensions industry are expected to *fuel growth* in the SRI industry.

These drivers shows that there was an accumulation process in the market and that however powerful, reasons alone are not enough to generate demand for green products but have to evolve from an existing status quo. However increased understanding of a certain driver has no meaning if it has no finality. If we accept that maximizing capital availability for green companies is one of the desired outcomes, then we have to see how this understanding translates into a product. In other words we have to link the individual green investors to the market. For this the current green financial products have to be

⁵⁰ Social Investment Forum supra note 44

⁵¹ Ibid

⁵² Ibid

⁵³ ibid

evaluated and further discussed. The following section will further narrow the discussion to green mutual funds and to the individual.

2.5 What are the green financial products?

Mutual funds are an important player on financial markets. As previously shown, their interest in the SRI market is recent, and it has become prominent within the last decade. In Europe there are 375 green/ethical/social funds (see also Appendix 1). In June 2005, their assets amounted to €24.1 billion⁵⁴. The increase from the same period in 2004 was 27%⁵⁵. The United Kingdom is the largest market⁵⁶ for sustainability funds in Europe, with €8.0 billion in total assets, followed by France with €3.1 billion, Italy with €2.7 billion, and Sweden with €2.5 billion. In 2003 in the US there were 200 funds⁵⁷ involved in SRI, an increase from 139 in 1997. SRI Trends reports that in 2001 “*assets in socially screened mutual funds grew by 19 percent, to \$162 billion, up from \$136 billion.*” More than half of this increase is credited to newly created funds. This clearly shows that sustainability funds are highly flexible and adaptable. They can adapt their financial products and activities to meet the evolving needs of green investors as well as to advances in understanding green investors’ behaviors.

Thomas Koellner’s study⁵⁸ has presented a good classification of the sustainability funds existing on the market depicted in the table below.

⁵⁴ Social Investment Forum, *supra* note 1 p. 37

⁵⁵ *Ibid* p. 37

⁵⁶ *Ibid* p. 37

⁵⁷ *Ibid* p. 37

⁵⁸ Koellner, Thomas, *supra* note 4

Type	Description
Equity funds	Actively managed fund
<i>Ethical funds</i>	Characterized by principle driven and/or religiously motivated lists of criteria for excluding companies (e.g. no alcohol, no drugs, no military goods)
<i>Environmental technology funds</i>	Companies focused on environmental technologies used for cleaner production, recycling etc.
<i>Eco-efficiency funds</i>	Large companies demonstrating best environmental practice in class
<i>Sustainability leader funds</i>	Large companies with best sustainability practice in class (also focuses on best sectors possible: best of best-in-class)
<i>Eco-pioneer/venture funds</i>	Innovative small and mid cap companies focused on environmental technologies and services
<i>Environmental resource funds</i>	Topic of funds is linked to environmental resources e.g. water, energy, sustainable forestry
Sustainable bond funds	Country or company bonds selected on the basis of sustainable criteria
Sustainable index funds	Passively managed fund that is highly diversified; best-in-class approach
<i>Fund of funds</i>	Portfolio of funds described above

Table 1 Typology of the green funds⁵⁹

It is difficult to assess each fund's impact on sustainability due to the fact that each has its own criteria and rules for investing. As a solution Thomas Koellner suggests sustainability rating⁶⁰. To assist the investor's choice, methods such as benchmarking, increased transparency from the fund managers, or comparisons between funds, can be deployed (see also Appendix 3).

As the financial markets are increasingly complex (including bond market, foreign exchange market, stock market, derivatives market etc.) the mutual funds in general and sustainability funds in particular provide aggregate investment opportunities to their clients. Thus they make the connection between the individual with less time or financial culture and the markets. There is usually a promised/assured rate of return. The funds are split into several categories. Income, capital growth or intake funds are some of the most common. Their ability to drive change varies. One way is through the implementation of environmental standards other through direct investments. Environmental technology funds are usually seen by green investors as the main drivers for change as they are able to give a push to greener technology.

⁵⁹ Source: Koellner et al. 2005 p. 61

⁶⁰ Koellner et al. 2005 p. 61

3 Literature review

3.1 Studies on the individual green investors

Existing studies show that in terms of **national origin**, the leading countries for green investors are the UK, followed by France, the Netherlands and Germany⁶¹. This reflects somewhat the mainstream of venture capital in the European market. UK accounted for more than 60% of the funds raised in 2005, followed by France (16%) and Germany (4%). Some studies have presented the typology for the individuals that put their money in these funds. For instance, the Lewis study has showed that in the UK, for instance, green investors are usually individuals over 45 years of **age**, evenly distributed between males and females⁶². When it comes to **profession**, his study illustrates that the green/ethical investors usually work in education (31%), as nurses or health professionals (14%) or as social workers. As for **religion**, in his paper some volunteered information that they were Christians. The little research done in Australia about green investors has illustrated that when it comes to **gender**, 61% of the green investors are female, significantly higher than the 41% females in the general investing public⁶³. In terms of **age**, the largest cluster of green investors is between 35 and 44 years old, younger than other investors. As in the case of the UK, the Australian green investors also usually have **religious** affiliation, are supporters of their community or members of the "caring" **professions**. Often those who put their money in sustainability funds are first-time investors and blue-collar workers⁶⁴.

These studies portray the green investor mostly using demographic and some geographic variables. Other ways to look at the subject include psychographic and behaviorist variables. While acknowledging the presence of other variables, like "moral dilemmas" "inertia"⁶⁵ or "commitment"⁶⁶ the above mentioned studies do not aim for a holistic approach of the green investor. A model that will use the currently known variables,

⁶¹ Social Investment Forum, supra note 1

⁶² Lewis Alan et al., *A focus group study of the motivation to invest: 'Ethical/green' and 'ordinary' investors compared* ; Journal of Socio – Economics, 2001 p. 331-341

⁶³ Australian Shareholders Association , <http://www.asa.asn.au/> accessed on 10th of May 2007

⁶⁴ Ibid

⁶⁵ Lewis et al, p 331

⁶⁶ Webley Paul et al. *Commitment among ethical investors: An experimental approach*: Journal of Economic Psychology, 2001 p. 27-42

while incorporating others could offer such an approach. System Thinking offers holistic approaches on matters by building causal loop models⁶⁷.

In order to understand the building blocks for such a model the literature review is further divided in three parts: **reasons for investing** presented from various perspectives and schools of thought, **underlying reasons for investments** and their relevance to the green investors and the **reasons behind the green choice**.

3.1 Reasons for investment

Why do people invest? This question has always raised economists' interest. In his book *The Theory of Moral Sentiments* Adam Smith has pointed out the *behavior* of the individual as the main driver for all human activities, including investing. He categorized these drivers in two main categories: vices and passions (or virtues). He emphasizes the importance of morals and develops the "*rules of justice*", the "*rules of chastity*", and "*the rules of veracity*" that the capitalist man should comply with. A quantification of these drivers is given by Jeremy Bentham who outlined the concepts of *utility* to explain why individuals involve themselves on the market. The concept of *homo economicus* appeared to present the human being as an individual who seeks to increase his wealth and avoid unnecessary labor. Thus there was a distancing of economic thought from psychology, as the human was seen by economic thinkers as deeply rational. However, the work of neo-classical economists like Vilfredo Pareto, Irving Fisher or John Maynard Keynes had also incorporated psychological explanations in their work. Keynes (1936) has named eight reasons for investing: Precaution, Foresight, Calculation, Improvement, Independence, Enterprise, Pride and Avarice. Keynes also draws up a list of barriers for investment or *motives to consumption* as he has named them. These are Enjoyment, Shortsightedness, Generosity, Miscalculation, Ostentation and Extravagance.

Later, more complex models appeared, for instance *expected utility* and *discounted utility* models that explained individuals' decisions under risk and uncertainty. These approaches presented a profoundly rational individual in the face of investing decisions.

⁶⁷ Hörður V. Haraldsson, *Introduction to system thinking and causal loop diagrams / by Hörður V. Haraldsson* Lund : Department of Chemical Engineering, Lund University 2004 Reports in ecology and environmental engineering, 2004:1 p. 4

One more factor – morals. Some sociologists considered the moral dimension to be one of the most important factors for investors⁶⁸. In one of his papers sociologist Etzioni has persuasively shown that the markets should be conducted by social rules, fairness and trust. This factor seems to be of prime importance for the green investors, as they often discount profitability for gains in morality or ethics.

The late seventies saw a challenge to the standard approach as the work of noble-prize winner Daniel Kahneman⁶⁹ and Amos Tversky (1979) showed that there were many *anomalies* in the behavior of the individual that have made him behave seemingly economically *irrational*. New models appeared, for instance the *cognitive models of decision making under risk* that challenged and completed the old ones. These *anomalies*, also called cognitive biases, are today well documented and categorized. Defined as a distortion in the way humans perceive reality, the cognitive biases are mainly split into four categories: decision-making and behavioral biases (25 types), biases in probability and belief (23 types), social biases (18 types), and memory biases (33 types). They apply to each person and hence to individual investors and green investors alike.

3.2 Underlying reasons and their relevance for green investors

Understanding how these biases apply to green investors as opposed to non-ethical investors can help sustainability funds adapt their strategies accordingly. Based on a screening of all 99 cognitive biases available in the literature, this paper has chosen seven to investigate in relation to green investors: *loss aversion*, *framing effect*, *halo effect*, *selective perception*, *déformation professionnelle*, *bandwagon effect*, and *optimism bias*. There are mainly three reasons for which these biases in particular were chosen. One is the importance of the bias within the specialized literature, the second includes the bias relevance for marketing and the third past research of the bias with regards to environment. More details are presented further on.

⁶⁸ Etzioni 1988 cited in Lewis A.

⁶⁹ Kahneman, D. & Tversky, A. *Prospect Theory: An Analysis of Decision under Risk*, *Econometrica*, XLVII (1979), p. 263–291

Loss aversion is described⁷⁰ as the tendency of people to strongly prefer avoiding losses over acquiring gains. Some reports argue that from a psychological point of view losses are twice as powerful as gains. Loss aversion bias lies at the base of prospect theory⁷¹ that critiques the expected utility theory of the neo-classical school. In prospect theory, the literature shows that people assign value to the perceived probability of gains and losses rather than to final assets. The perceived probability is subject to many biases.

Loss aversion usually appears in the face of uncertain utility as well as uncertain risk. Loss aversion usually appears in the face of uncertain events or risk. This is one of the reasons that it is also sometimes referred to as risk aversion. Risk or loss aversion is often researched in relation to other biases such as the framing effect or the status quo bias. Studies⁷² have shown that loss aversion has to be regarded in relation to the reference point – in our case the investor's capital availability– upon which it is dependent⁷³. This bias was selected due to its appearance in a fair number of studies including the initial behavioral finance papers⁷⁴. As it lies at the base of prospect theory it is one of the important biases. However the author found little research of it in relation to the green investor. Moreover prospect theory regards loss aversion through monetary outcomes which is relevant for our case.

To better understand the links between this bias and the market, an example can be useful. The *loss aversion bias* is used by advertising companies when communicating that certain discount is available until a certain date. This creates a feeling of loss in the consumer and might lead to a purchase for fear of *losing* the discount. Interviewees were asked to state what they would do with their green portfolio if it underperformed. They were also asked to state what their risk profile is: *seeking* or *averse*. References for risk and losses were screened in the available material.

⁷⁰ Kelton Rhoads "Loss Aversion, Risk, & Framing: The Psychology of an Influence Strategy", 1997. <http://www.workingpsychology.com/lossaver.html> accessed on 12th of May

⁷¹ Kahneman, D. & Tversky, A. supra note 68

⁷² Tversky Amos; Kahneman Daniel *Loss Aversion in Riskless Choice: A Reference-Dependent Model*; The Quarterly Journal of Economics, 1991

⁷³ ibid

⁷⁴ Kahneman, D. & Tversky, A. supra note 68

The framing effect is often researched in relation to the loss aversion bias⁷⁵. There were studies that have present it with regards to environmental attitudes⁷⁶. There are two different definitions of this effect. One, based on the prospect theory,⁷⁷ defines this effect within the framework of choices framed as potential gains or potential losses. For instance, a potential loss of 600 people due to an epidemic was described to a group of subjects. When presented alternatives were framed as either saving 200 lives plus or losing 400, a stronger preference for saving was noted, although in numerical terms the alternatives are similar. An extension of this definition is given by Levin,⁷⁸ framed in the context of deterministic product attributes. Instead of alternatives framed as losses or gains he proposes either favorable or unfavorable, or positively or negatively phrased attributes. In his study, in an imaginary purchase of ground beef, subjects were presented with two alternatives portrayed as "75% lean" or "25% fat." Results showed that subjects made more favorable associations when the beef was framed as percent-lean as opposed to as percent-fat. This suggests that people are sensitive to the way a concept is phrased of framed. To identify this effect for the green investor references for *saving, do good, do well* were screened in the empirical material.

Halo effect implies that the first characteristics we perceive in someone later influence⁷⁹ the perception of other characteristics (due to our expectations). In other words the sequence of perceptions is important For example, attractive people are considered to have an attractive personality and better skills than someone regarded as having normal appearance. This is affirmed by marketers' practice of the halo effect, when celebrities are hired to promote and accelerate sales of new products, though usually they have no expertise in evaluating these products. If the first perceived characteristic is positive and likable it is probable that the rest of the attributes will also be likable. This is also used in brand making⁸⁰ when the positive perceived features of a new item expands to the whole brand. For instance the iPod has had a beneficial consequence for all of Apple's products.

⁷⁵ Ibid

⁷⁶ KUHN, K.M, *Message format and audience and values: Interactive effects of uncertainty information and environmental attitudes on perceived risk* Journal of Environmental Psychology 2000 p. 41-55

⁷⁷ Kahneman and Tversky 1979;see also Puto 1987;Thaler 1985;Tversky and Kahneman 1981 all cited in Irwin *et al.*

⁷⁸ Cited in Irwin *et al.*

⁷⁹ Kelly, G. A. (1955). *The psychology of personal constructs* (Vols. 1 and 2). New York: Norton.

⁸⁰ http://en.wikipedia.org/wiki/Halo_effect accessed on 12th of May

The car manufacturers use *halo vehicles* such as Ford GT, Acura NSX, or Dodge Viper to promote their sales for an entire series. A better example involves price formation. When prices are framed as 999 versus 1000 the first perceived characteristic is a positive one, a lower price. The halo effect usually triggers “*an internal network of correlations*” that people apply over their general impression which is either positive or negative⁸¹. Any indication of this bias will help the understanding on how to use it with regards to green investors. To identify this bias for the green investor names of personalities or celebrities as well as nominations of external events influencing the investments were looked for in the empirical material.

Selective perception a cognitive bias best described as people’s tendency to see only what they want to see. This is a consequence of the fact that the individual desires to maintain agreement within his thought and beliefs. Merrill and Lowenstein have showed that individual usually “*builds up complex safety mechanism for screening information ... that does not agree with his dominant dispositions (selective exposure)*.”⁸² However, they also show that this is a necessary step, because otherwise daily scattered information will affect the emotional internal cohesion of the person. This bias is usually affected by emotions. Investors are particularly affected by this. Overweighing the facts that agree with their perception can lead to poor investment decisions and losses. A strategy based on facts is usually more successful than a strategy based on emotions.

Déformation professionnelle is a similar bias wherein the information is selected based on one’s line of work or profession, often ignoring a broader perspective.

Selective perception and *déformation professionnelle* appeared from the empirical data based on the grounded theory principles. Many references to profession, careers and work leading to the green investments decisions were found in the empirical material.

Bandwagon effect, often referred to as collective or herd behavior, is described as the tendency of people to believe or do things that the majority of people do or believe. The bandwagon effect is used in a variety of fields: politics, microeconomics and fashion or

⁸¹ Babad, Elisha *The Psychological Price of Media Bias.*; Journal of experimental psychology. Applied 2005 p. 252

⁸² Merrill JC, Lowenstein RL. *Media, Messages, and Men.* New York: McKay, 1971 p.226-227

music industry. In microeconomics it usually refers to the fact that purchases of merchandise are increased by the fact that other people use or buy the same products⁸³. This is somehow contrary to the law of supply and demand which assumes that demand is only influenced by price and personal preference. This effect is particularly interesting to investors, as it is unwise, with few notable exceptions,⁸⁴ to bet against the crowd. Bandwagon effect was selected based on selective reading about their history, causes and consequences. They were seen as possible reasons for the developments on the SRI market. References to friends, acquaintances, as well as to perceived market trends were screened in the empirical material to identify this bias.

The **optimism bias** is defined as people's tendency to *expect a better future than one's peers*.⁸⁵ A number of studies⁸⁶ have shown that people believe they are less likely to experience negative events such as heart attack or car accident in comparison to their peers.⁸⁷ Hatfield shows that optimism bias is a certain case for the lack of pro-environmental behavior. In our case it was seen as a possible explanation of why people do not invest in green funds. for why people do not invest in sustainability funds. Green investors were asked about what were the perceived personal impacts to themselves of environmental problems.

By using content analysis indications of these biases were screened throughout the empirical material.

83 Leibenstein H. Bandwagon, Snob, and *Veblen Effects in the Theory of Consumers' Demand* ;The Quarterly Journal of Economics 1950

84 The Contrarian strategy used by investors such as Warren Buffet, Martin Zweig or Joe Kennedy

85 Hatfield Julie and Soames Job R.F” Optimism bias about environmental degradation: the role of the range of impact of precautions” Journal of environmental psychology 2001 p. 17

86 Kirscht *et al*, 1966;Weinstein 1980;Kulik and Mahler 1987;Lee & Job 1997 all cited in Hatfield

87 Kirscht *et al*, 1966;Weinstein 1980;Kulik and Mahler 1987;Lee & Job 1997 all cited in Hatfield

3.3 Reasons behind green choice

Green was a *buzz word* that was used by marketers in the 1980 as a consequence of the increased awareness of the sustainability issues in politics, mass-media and financial groups⁸⁸. More than often the resulting products or services had little to do with marketing and even less with the environment and were just an opportunistic way to respond to consumer needs⁸⁹. The meaning of green seems to be dependent on the level of consumer awareness on sustainability. The marketing discourse was extended to use words like: “*green markets*”, “*green products*“ and “*green consumers*”⁹⁰. A green consumer is defined as “*a person who, in his or her consumption behavior consciously attempts to have a neutral or positive effect on the earth, its environment and its inhabitants.*” Up to one point this definition may work for a green investor as well, as they also *seek out other goals for their investments, than just the financial ones*. However the difference lies in the utility. While both take their utility from doing good things towards the Earth green investors are also seeking utility through their capital gains.

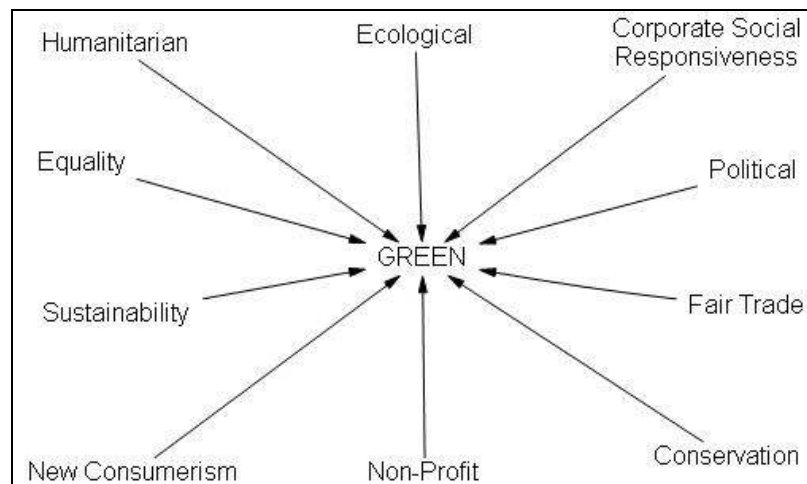


Figure 3 The meanings of green to consumers⁹¹

⁸⁸ Peattie, Ken; Environmental marketing management : meeting the green challenge / Ken Peattie :Pitman Publishing 1995 p. 24-40

⁸⁹ Ibid p.26

⁹⁰ Ibid p. 26-30

⁹¹ Source: Peattie, Ken; Environmental marketing management : meeting the green challenge / Ken Peattie :Pitman Publishing 1995 p. 26

As there are over 100 definitions of sustainability in academia there are as many or more meanings of *green* to consumers. They all seem to be related however with the desire to change the world for a better place. As presented by the environmental marketing discourse the green consumers are driven by a combination of needs and factors⁹². The needs are a reinterpretation of the Maslow's hierarchy, but from an environmentalist perspective. They are further presented:

- Physiological needs represent peoples need for life, drink, food, clothing, warm and shelter. Their fulfillment is directly linked to the health of the planet.
- Safety needs. Reports involving food poisoning, food additives, chemical residues, unsafe cars have made safety an important issue among consumers. This lead to an increase in consumption of products with specific advantages such as organic food or tamper-proof containers.
- Social needs link to the environment is represented by people's concern for potential effects on their loved ones.
- Esteem needs are particularly well expressed through green consumption as they stimulate peoples need for individuality and self respect.
- Self- actualization needs. Planet survival and security for the future generation is a *way for people to seek fulfillment*.

As for external factors influencing the purchase and the green consumption decision the same author offers an inclusive account⁹³:

- Cultural factors norms and values are usually related to consumption. Some people regard green consumption as a protest towards current customs and way of life. In Japan for instance there was a tradition of frugality, partly surprised by government's desire to stimulate consumption in the 80's only to reaper for environmental reasons in the 90's
- Social factors come from people's need for *social acceptance* and esteem. Peattie shows that the demand for fur coats might both increase and decrease due to the same need for approval from societal group. Cunningham characterized socially conscious consumers as "*a pre-middle age adult of relatively high occupational status...*

⁹² Ibid, supra note 80, p 86

⁹³ Ibid , supra note 80, p. 90

*typically more cosmopolitan, but less dogmatic, less conservative, less status conscious, less alienated”*⁹⁴

- Economic rationality. The green consumers do not conform to conventional economics models that portray consumers as acting in their best self interest. They might seek others best interest. Through their behavior to encourage improved environmental performance from companies by buying specific products.
- Life stage and lifestyle. Young mothers are usually more aware towards the environment threats for the sake of their children. Parents in general care more about the future of the planet and often that is reflected in their consumption behavior. There is also a feedback loop from children to parents as many of the young generations get more environmentally oriented education in school. As for the life style a study revealed that US consumers were “too busy” to care about the environment⁹⁵.
- Convenience is besides costs one of the main barriers towards the green consumption. Peattie suggests that it could actually be more important than price and argues that if consumers are presented with more convenient green alternatives than the existing ones this can increase the sector.
- Psychological factors. One of the most important psychological factors is individual’s desire for control. Peattie argues that this can work for the benefit as well as in the detriment of environment. Desire of control make people drive their own cars but also buy green products in order to *re-establish* control over the planet.

⁹⁴ Cunningham, 1972, cited in Peattie p. 92

⁹⁵ Seymour and Giradet 1987 cited in Peattie p.92

4. Conceptual framework

The conceptual framework is often used in research to outline a preferred course of action in a complex research project.⁹⁶ Conceptual framework usually links and describes the dynamics among different concepts in order to answer research questions. The framework serves as a guideline or as a *navigation tool*⁹⁷ that will link the various concepts that the study comes across. These concepts as well as the dynamic between them are presented in this chapter.

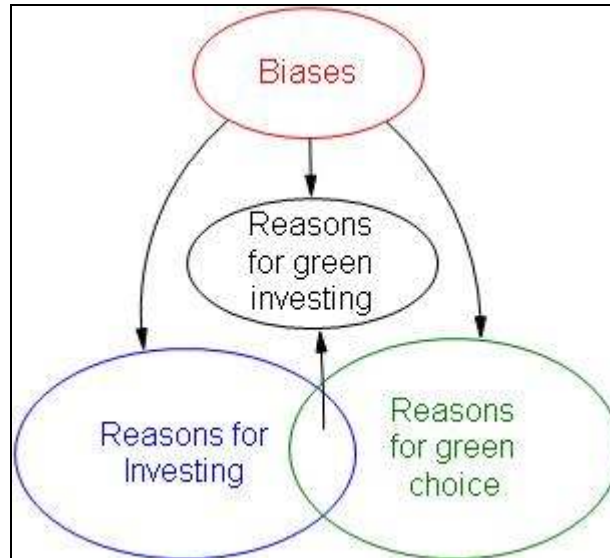


Figure 4 Conceptual framework

As shown in the literature chapter the green investors might be influenced by factors coming from three dynamics. The first and second are concerned with the rationale of the human beings. On the one hand investors seek to maximize their own good. They invest in order to increase their happiness or pleasure. On the other hand their motivation is coming from the green consumerism dynamic and is based on the reasons behind the green choice. The reasons are basically more altruistic. The third approach, while acknowledging the merits of the first suggest that in the face of uncertainty, the decisions of economic agents are only partially rational and are subject to some biases. Further the empirical material findings will be presented from this 3 perspectives: Green investor as

⁹⁶ Botha, M.E. , *Theory Development in Perspective: The Role of Conceptual Frameworks and Models in Theory Development*, Journal of Advanced Nursing 1989,14(1),p. 49–55.

⁹⁷ Westman Sarah, *Treasuring Every Drop: Water Privatization and the Urban Poor* http://www.lumes.lu.se/database/alumni/04.05/theses/sara_westman.pdf, 2005 accessed on 11th of May 2007

an environmental concerned being (Ch 5.1.1. and 5.1.2), green investor as a rational person (Ch 5.1.3 and 5.1.4) and the green investors subject to biases (Ch. 5.2) With regards to the research questions and objectives the focus will be on how the reasons for investing as well as the presented biases are applying to the green investor. Chapter 5.2 makes a comparison between how biases apply to green investors as opposed to the “ordinary” investor. Understanding these differences can lead to developments in SRI.

5. Findings

This section sums up the reasons and motives presented by the green investors in the interviews. The findings suggest that for green investors there are two levels of reasoning. The first - and the investors were presenting it themselves- is the **perceived** level. For this level there are mainly four subcategories of reasons (see also **table 3**): ethical/environmental/social, internal, economic and external. Regularly however in the green investor’s mind there is a particular and unique, DNA-like combination of the motives found in each subcategory. The quotations presented in the following two subchapters are examples of that. It has to be noted that for the ease of presenting the results this division was necessary. The distinction is however not so clear in all cases.

The second level is somehow opposed to the first in that it is underlying and latent. This level usually starts where the conscious perception ends. This paper has named it as the **underlying** level, a level that has more to do with internal conflicts, biases and limited or bounded rationality. As in the first case the green investor is influenced by a unique combination of these psychological reasons. For clarity the findings from the focus group interviews are presented distinctly from the on-line/phone interviews findings as they were not obtained directly by the author.

Subject	Work	Primary reason	Education	Risk profile	Place	Percent of G.I. in Total	Length of GI (years)	Age
1	English Teacher/ retired farmer	Life style choices	Ecological agriculture	Averse	South Chorea	37%	0.7	28
2	Environmental field	Believe in sustainability	Master's degree	Risk taker	New York	80%	2.5	41
3	Self employed	Keep the Earth alive	Architectural Technology	Risk taker	New York	10%	1.5	49
4	Senior lecturer	Invest with values	Business Degree	Risk taker	Wisconsin	100%	9	49
5	Research Student	Ethical and Educational	Sustainable Systems/Religion	Averse	Nihon, Japan	100%	2.5	30
6	Consultant Green real estate	Do good	No answer	No answer	New York	40%	5	No answer
7	Retired nurse	Activism	No answer	Balanced	Melbourne	100%	6	65
8	Engineer	Alternative energies	No answer	Risk taker	No answer	No answer	2	
9	Researcher - Env management	Awareness	Environmental engineering	No answer	Lund	50%	6	40
10	Research Biologist	Environmental	BS in Biology	Balanced	Wisconsin	100%	7	35

Table 2 Data on Interviewees

5.1 Perceived reasons for green investing

As expected desire to gain profit and the desire to change the world emerged as the main reasons for green investing. In fact these factors were seen as reinforcing one another and they were often mentioned together.

5.1.1 Ethical/environmental/social reasons

There is a fair split between ethical and environmental reasons leading to the green decision. Social reasons were mentioned a few times. Three of the interviewees mentioned *investing with their values* first, when asked about their reasons to invest. Two specifically (Subject 4 and Subject 1) and the third mentioned the agreement towards the fund policy (Subject 9)

I think it is very important that I and others invest with our values and not just buy into the system of capitalism that says that all you are interested in is making the most money in the shortest period of time. I don't believe that any longer even though I teach at a business school. I believe that business has a social responsibility and we as investors have a responsibility to support those companies that are doing good things... (Subject 4 min 5:19)

Work in the environmental field whether paid or voluntary seems to play a role in green investing:

I am very much into conservation and I also belong to Friends of the Earth anti-uranium collective, so I am an activist in that as well, so there are areas I am interested in and since I grew older and the boys left home I became much more active in them. I've only really had the ethical investment for the last 6 years which was when my mother died and we sold the family home so I had a little money to invest. (Subject 7-retired nurse)

In the **focus group transcripts** other reasons captured ethical/environmental motives. Among others morals, wanting to have a clear conscience, “spiritual growth” or “feel good” factor were mentioned. Some saw green investing as an alternative to charity or did it because they wanted to avoid arms and labor exploitation in the third world. A fair number (mostly women) mentioned the urge to avoid workers exploitation in developing countries as their main driver for ethical investments.

5.1.2 Internal reasons

There are two main subcategories in this section covering internal reasons. One includes education, work and interests. The second focuses on the perception of global environmental problems. In other words, it is a question of how personally people take global environmental issues. In the first subcategory work, studies or research within environmental or financial field were mentioned (Subject 9, Subject 4). Activism in NGO's such as Friends of the Earth is sometimes a driver for green investments. It can stand on its own or can be followed by profit seeking (Subject 2) or time availability (Subject 7)

I found out that I became aware of this area, and my studies have influenced me to invest, but I don't consider myself as an environmentalist to the extent that I would go and look for where environmental opportunities are and where..., I am still doubtful

about the potential of stock market to influence the behavior of companies, so within the range of the available options this was for me a reasonable one. (Subject 9-researcher)

When asked how they think about environmental problems affecting them personally some (Subject 1, Subject 10) mention air and others identify water, clean rivers and sustainable food resource as priorities. High-profile examples were also given – snow cover on Mt. Kilimanjaro, the Great Barrier reef, Hurricane Katrina (Subject 6, Subject 10). The fact that someone in US is taking personally problems in Tanzania and Australia and is willing to invest his money to alleviate them is revealing for the shift that took place in people's consciousness and responsibility.

I would like to have clean water to drink, and clean rivers to swim in. I would like to have a sustainable food source. I would like to see Kilimanjaro while there is still snow on it, and the Great Barrier Reef while the coral is alive. Etc., etc., etc. (Subject 10)

Subject 3 sincerely states that he wanted to put his money where his mouth is.

The **focus group interviews** also revealed that activism in organizations such as Friends of the Earth, Greenpeace, Peace Movement was sometimes a reason for investing. Many of the participants were working in social care or similar professions (Monica, Linda – FG 5) as well as in education. Political beliefs were also some of the factors mentioned as a driver for green investing Few (Jill, Recha FG2) mentioned that they wanted to make a statement by investing their money in a green way. Others (Bruce, FG2) declare that ethical investment is the best you can do for sustainability, given their life circumstances.

5.1.3 Economic reasons

For some of the investors profitability is an important factor, mentioned first, as the sustainability funds present a good opportunity to invest.

There are two reasons; one is what is the perspective return, and number two, when I invest my own money I would rather, at least with a portion of my own money, I would rather do something that does something good in the world ...I want something that aligns with my ethical beliefs... (Subject 6)

The views on profitability of the green funds are however split. Few (Subject 8) argue that ethical funds can not match the return of normal funds while others (Subject 4) say they are about average. Most tend to agree that the sustainability pays back, and that the ethical business will outperform their polluting competitors (Subject 2, Subject 9). Capital placements in green funds are usually regarded as a long-term investment. This finding seems to be consistent with the fact that the average length of their investment is 5 years. Interviewees have also mentioned portfolio diversification as one of the reasons they either have their money in ethical or in non-ethical funds as this decreases risk. Some are passionate and place 100% of their finances in green trusts (Subject 4, Subject 5, Subject 7, Subject 10). The average for this sample is approximately 67 %.

Interesting answers were given when investors where asked what would they do if their green investments underperforms or face losses. Some adopt a wait-and-see attitude (Subject 6, Subject 1) followed by the change of strategy, either maintain the commitment to green but putting money in other green options or dropping the green ethical investment all together and focusing on other opportunities (land, own business, job etc.). Subject 3 mentioned that though he had a 50% loss he would still only invest in other companies that do not *underestimate the environment*. It is important to note that although some of the investors (Subject 9, Subject 8) have money in green funds, they do not consider themselves as green investors. Subject 8 even denounced *eco-folk's* hysteria.

... but I don't consider myself as an environmentalist to the extent that I would go and look for where environmental opportunities are (Subject 9)

The **focus group interviews** revealed that the sudden availability of a sum of money that may come from unforeseen occurrences such as being laid off from work may enable them to invest in green funds. Some (Ray – FG4) revealed that they wanted to diversify their portfolio and that ethical trusts had better results than average funds. The same was true when compared to FTSE 100 index. Few gave less credit to ethics rather than profit when choosing between the two.

I'd be happier to receive lower dividends and not feel that I'm helping immoral practices in any country including our own. (Betty – FG5)

5.1.4 External reasons

This study found primarily three categories of external factors that influence the green decision: **financial/investment advisors, publications and internet resources**. Three of the respondents mentioned that their financial advisor or their brokers were influencing their decision to invest in green products. As for press and media, Money Magazine, CNN, trade publications and investment newsletters were quoted. Dedicated financial news services such as Reuters, Standard & Poor's as well as reports from NGOs were also mentioned. As for internet resources other than search engines like Yahoo or Google, web pages like *sustainablebusiness.com*, *zaadz.com*, *quantumonline* were used. Some (, Subject 1, Subject 3, Subject 5, Subject 8) look for forums, reviewed books on amazon.com or blogs of sustainability funds as sources of information.

I make separate analyses for the financial and ecological aspects of my investments, and an investment must pass both before I invest in it. I use the main-stream financial news services for financial assessment. This includes Reuters, Standard & Poors, and the companies' SEC filings. For environmental assessment, I tend to look both to what other green funds are doing (especially Portfolio 21), and then try to balance this with reports from NGOs. Banktrack, Friends of the Earth, Rainforest Alliance, and the ICCR are some of my favorites. (Subject 10- transcripts)

Other external reasons include influences from books and authors such as Paul Hawken, David Korten's book *The Great Turning: From Empire to Earth Community*, Bill McKibben's book *Deep Economy*, the Stern Report, etc. Other forms of media, such as Al Gore's documentary *An Inconvenient Truth*, were mentioned twice.

Inheritance or capital availability was also mentioned once as a facilitator for investments.

Some of the participants of the **focus groups** (Judy, Graham FG1) revealed financial advisors as a reason for their green choice. Furthermore, government action as well as green fund's policy, transparency and disclosure were mentioned. Finally, advertisements in magazines were noted as being persuasive forms of motivation by a few interviewees (Julia FG1)

5.2 Underlying reasons for green investing

Content analysis method was used to screen for biases in the empirical material. Content analysis was introduced as a method of research for cognitive biases by Harman-Hall et al⁹⁸. The authors show that the written responses to open-ended questions can be coded as indices for biases.

In order to meet the requirements of this method a coding schedule was produced⁹⁹. Specific words were traced in the empirical data. For instance words like words like “*save*”, “*help*”, “*change*”, and “*improve*” were screened in the focus group transcripts and evaluated if they represented an indication of the **framing effect bias**. An example is given below.

Group / Bias	Loss aversion	Nr of hints	Framing effect	Nr of hints
<i>Ethical FG</i>	Risk	1	Save	6
	Loss	3	Do good	1
	Underperformance	4	Change; Improve	8
Total		8		15
<i>Non-Ethical FG</i>	Risk	0	Save	1
	Loss	0	Do good	
	Underperformance	1	Change	-2
Total		1		- 1
Group / Bias	Deformation professionelle	Nr of hints	Bandwagon effect	Nr of hints
<i>Ethical FG</i>	Social/Environmental/Educational work	8	Friends ;Family	
	Other	4	Press	6
	Not known	5	Fin advisor	3
Total		17		9
<i>Non-Ethical FG</i>	Social/environmental/ Education work	4	Friends ;Family	4
	Other	11	Press	3
	Not known	2	Fin advisor	2
Total		17		9

Table 3 Content analysis on focus groups transcripts

“But yes ultimately I’d like to make sure that all my money that I’ve got would go into help rather than harm” (Annette FG1)

⁹⁸ Hartman-Hall et al. *Content Analysis of Cognitive bias: Development of a standardized Measure* 1999

⁹⁹ Bryman p.190

For the bandwagon effect references to recommendations from friends, press and media were looked for. The financial advisor was also introduced here as it represents an external influence towards the investor.

“I have seen an advert somewhere and it was the name Friends Provident that made me look again” (Julia FGI)

As the focus group transcripts were available from both group of investors “ordinary” and “ethical” a comparison could be constructed with regards to the cognitive biases. The material to be screened was selected so on each side there was an equal number of investors. Thus there were answers from 17 “green” investors and 17 “ordinary” investors.

It has to be mentioned that the research on the halo effect bias, selective perception and optimism bias was inconclusive. One reason is that indications of selective perception – such as beliefs, attitudes viewpoints – were difficult to categorize and sum up in the different research groups.

5.2.1 How are the frames different?

Content analysis revealed that there were more references in the green investors group to the desire to *change*, the need to *improve*, to *help* or to do *good*. There were 15 references to the researched words in the ethical group as compared to “– 2” in the non-ethical group (one investor mentioned he does not believe ethical investment will change the world so that was seen as having a negative effect). The *non ethical* investors referred more to financial reasons for their investing. The motives mentioned most were: capital increase, having a greater income when retired, fighting inflation or as a hobby. The non-financial matters revealed reasons like: *the sense of security* or *peace of mind*. The predominant frame for the green investors that appeared most often was: ***the earth needs to be saved and we as investors have to help it***. For the *non-ethical* investors the predominant frame was: ***we are getting older and we have to save money for our retirement***.

5.2.2 Déformation professionnelle

One issue that became evident when evaluating the empirical data was the fact that the respondents had some affiliation with environment or sustainability issues. Friends of the Earth activism, environmental research and ecological background were among some of the most common. Some of the interviewees reveal that there was something in themselves that made them put their money in green funds.

*I think probably just **doing research** for my classes to see what subjects I wanted to address and a number of years ago I discovered that gosh, there are funds out there that are different, that are trying to reward companies that are doing good things, that are screening companies that are not doing good things and over time decided that I should really be a part of that (Subject 4, min 13:12)*

The content analysis revealed that in the “green” focus group 47% of the investors had environmental, social or educational jobs with only 23% in the “ordinary” group. This suggests that jobs in the aforementioned areas are a predictor for green investing activity. This seems to be in concordance with the interview findings where 80% of the subjects had these types of job.

5.2.3 Bandwagon effect

References to friends, family, press were screened in the empirical material to identify this bias. Information about the financial advisor was also screened out as often investors mentioned they were influenced by them. Content analysis revealed that there were equal signs of bandwagon bias in both groups “9” suggesting that all investors are subject to some external influence. However, while green investors are more influenced by their financial advisor or by press, the “ordinary” investors are also influenced by their friends or family (4 references)

5.2.4 Loss aversion

Both investors groups were preoccupied with losses and risk inherent in their investments. Content analysis did not reveal any comparable results. However the perception of losses seemed to be less worrying in the ethical group. The green investors were receiving utility just by having their money in a green fund.

*“ I reckon I ought to achieve **average growth**, a **clean conscience** for myself, so helping me, and lastly **promoting ethical companies** by providing capital to them”* (Ray green investor – FG 4)

On the “ordinary” investors side the financial reasons were favored. Some (Bart, Freddy) mentioned that they invest to protect their capital from inflation while others consider themselves conscious investors (Tony). Most mentioned that they want security, a greater income, or available money for their retirement (Andrew, Anne, Nigel, Pat, and Freddy). It makes sense to state that while mainly financial reasons made them invest they are more sensitive to financial losses. The “green” investors, while still paying attention to financial matters, are more sensitive to losses in sustainability. An investor mentioned that she became angry, when her green fund (Friends Provident) announced to her that they have non-ethical investments as well.

5.3 Barriers for green investing

The answers to interviews revealed some of the factors having a negative impact on the green investing. The barriers appeared from the research either mentioned directly by the investors themselves or as opposing to the main driving factors.

Among these barriers expressed by investors the internal ones seem to prevail. Investors mention low returns (Subject 8, Subject 1), information haze (Subject 2, Subject 10), having to wait (Subject 3), lack of understanding, lack of education (Subject 7) or search costs (Subject 6)

...I think is a function of wanting to make a difference and not knowing what they can do...I think people generally are feeling is something that they need to care about, they

*need to do something about but most people **do not know** what they can do (Subject 4 min 11:51)*

One investor (Subject 2) mentions that green stocks as opposed to normal ones are more volatile and this can scare some of the investors off. This also signals that there are speculative capitals on the market of green funds.

The **focus groups** revealed convenience as a reason for not investing. The elderly investors prefer to invest their money through a bank that is closer to home even though it is not ethical.

5.4 Suggestions from investors

The investors were specifically asked what in their opinion can be improved in the current green funds. This is why this section is included in findings rather than in the final chapter. Except transparency and disclosure which appeared a few times (Subject 5, Subject 8, Subject 4) the other suggestions were very different. That is why they are presented as quotations further on.

Full disclosure, less hysterical statements by the eco-folks. (Subject 8)

Paul Hawken raised legitimate concerns in recent years about the very broad definitions of “green” being employed. I think the screens employed for choosing green stocks are far too lax, focusing more on the extent to which companies have avoided legal wrongdoing than on their track record of innovation in preventing pollution. (Subject 2)

I don't think much can be done. Rainfrog is great. More places and people need to create organizations like it. The other funds are run on conventional fund philosophy and will never get better because of that i think. It would be great to see leaders in organic, sustainable, etc. Businesses creating/promoting eco-investment opportunitites though- for their benefit and mine. (Subject 1)

RainFrog is really the only one I use. Most of the others simply don't maintain high enough SRI standards for my taste. One product I would very much like to see, however, would be a socially responsible developing market government bond fund. Such a fund

would invest in government-backed debt securities, but would carefully avoid treasury debt that could be used to fund military spending. Instead, it would invest in educational and domestic service programs. (Subject 10)

*Well, let's put this way, now it's either carbon emissions or nuclear technology? Improving actual products? It's either use them or not, nothing to improve, the are **natural** (Subject 3)*

T: I think I would like to see more options available and I understand that you know, every day there are more options that are becoming available, for instance Taylor mutual funds, I think there are two mutual funds out here that do the same thing, so I would be very interested in supporting companies that are working alternative energy technology it would be great to have a mutual fund that focus on that I would love to see these real estate investments funds or REIT, some of those have sustainability criteria parameter so I think they will evolve (Subject 4)

The following table presents a sum-up of the reasons already discussed.

<i>Perceived reasons</i>				<i>Underlying reasons/ biases</i>	<i>Effect on green investing</i>
<i>Ethical/ Environmental/ Social</i>	<i>Internal</i>	<i>Economic</i>	<i>External</i>	<i>Psychological</i>	
Morals	Desire to be “Rich and sophisticated”	Profitability above average	Government actions	Dominant frame: Earth needs to be saved and we as investors have to help it	+
Conscience	Consistency with other life style choices ¹⁰⁰	Desire to bequeath ¹⁰¹	Government inactions	Fear of losing the Earth	
“Feel good” factor “spiritual growth”	Time availability	Portfolio diversification	Ethical financial advisor; Aware brokers	Selective perception “green” background	
Investing criteria of the fund	Activism (e.g. Friends of the Earth)	Provide for future self	Facilitators (on line investing, bank links)	Déformation professionnelle “green” profession	
Guilt	“Caring”/ social professions	Sustainability pays back	Press		
	Lack of time	Portfolio diversification	Fund Managers inactions	Dominant frame We are getting old and we have to have some money	-
	Lack of education	Volatility	Unaware brokers	Fear of loosing money	
	Lack of understanding/ Feel is someone else	Profitability lower than average		Optimism bias	
	Information haze				

Table 4 Perceived and underlying factors determining green investing (speculative)

¹⁰⁰ Lewis Alan, 2001, p. 339

¹⁰¹ ibid

6. Discussion

6.1 Causal Loop Diagram

In contrast to previous studies that are based mostly on demographics, this part will present a rather more complex account of the reasons behind green investing. Aiming for a holistic approach on the matter a model of the reasons and biases affecting the individual green investor was developed and it is further presented. The model consists of a Causal Loop Diagram (CLD) and it is based on the literature and the empirical findings. It connects the perceived and the underlying reasons driving the activity of green investing. The elements in the model are connected through arrows. This means that they are a cause for one another. At the end of each arrow there is a + or – sign showing the direction of change between the connected elements. The R sign signifies a reinforcing loop; the B sign signifies a balancing loop.

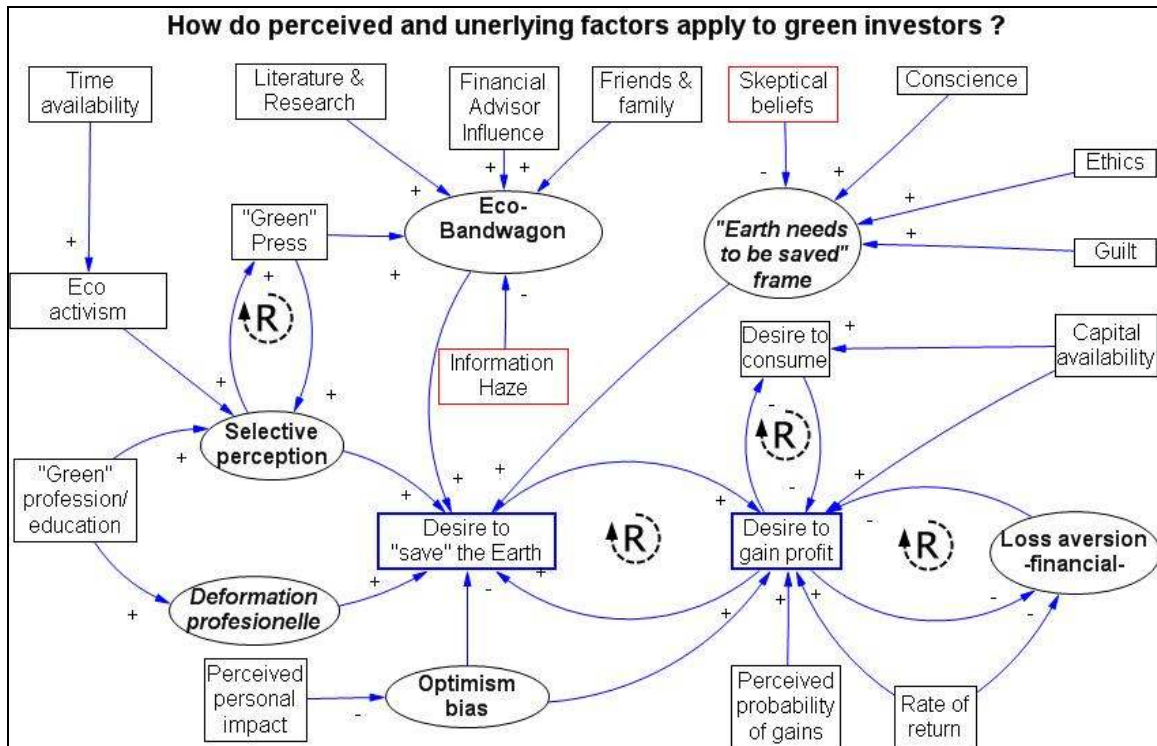


Figure 5 Causal Loop Diagram on perceived and underlying factors in green investing

At the base of the model lies a reinforcing loop consisting of two desires: the **desire to gain profit** and the **desire to “save” the world**. *Save* in this case is a summing-up word for all desires associated with positive beliefs towards sustainability issues. It includes the desire *to change, do good, do less harm etc.* These two desires reinforce one another and they are the basic driver towards the activity of green investing. Each of these two factors is part of a complex net of loops and factors as explained further.

The model is split in two types of factors: the perceived factors depicted in a square boxes and the underlying factors or the cognitive biases in ovals. *Desire to gain profit* is influenced by other factors, usually economic reasons (see also table 4) such as the *rate or return* or *capital availability*. *Capital availability* based on the two desires can determine how green or grey is an investor’s financial portfolio. There are also others that have not been depicted in the above scheme for lack of space. These include *desire to bequeath* or *portfolio diversification* as well as Keynes-typology reasons presented in chapter 3.2, e.g. *precaution, foresight, calculation, improvement, independence, enterprise, pride* and *avarice*. The *desire to gain profit* (could be seen as the desire to invest) is opposed by the *desire to consume* as it is competing for the same amounts of money. Increased *capital availability* can lead to an increase in any of them. The available literature presented *optimism bias* as an impediment towards “*pro environmental behavior*.”¹⁰² That is why in the CLD is having a negative effect on the *desire to “save” the Earth*. The effect observed on the green investor leads to the belief that the optimism bias applies in a diminished form to them as they are often aware of the environmental problems especially about air and water pollution.¹⁰³

Various biases link to one another. For instance the *selective perception* bias is linked with the *eco-bandwagon* effect through press and media. The findings with regards to the framing effect seem to confirm literature. The fact that content analysis revealed that there were 15 references to the “*save*”, “*change*”, “*do good*” signify that the frame of “*Earth needs to be saved*” has a influenced investors towards SRI. The influence from factors such as *ethics, morals, conscience* comes second in importance to how **loud** or

¹⁰² Hatfield J et al, 2001, p 17

¹⁰³ See also Subject 10 responses, pg 35

strong is the frame¹⁰⁴. This seems to be in accordance with Chong et al. findings which show that individuals *are assumed not to evaluate strength consciously but simply to embrace the frame they hear most often and that most easily comes to mind*¹⁰⁵. The *Earth needs to be saved* frame should be seen as a stock of earlier perceptions and has a plus sign effect on the *desire to “save” the Earth* factor.

Selective perception and *déformation professionnelle* depending on the nature of investor's profession or education can have a mixed impact on the *desire to save the Earth*. 47% of the interviewees in the focus groups and 80% in the on-line interviews had an affiliation with sustainability issues either through their work or their education. Thus it can be concluded that green investing is work biased. *Green* jobs or activities will increase the *desire to save the Earth*. Conversely it can be speculated that a non-green profession can have a negative effect on the same factor. *Time availability* is an important external factor that some of the investors mentioned. It behaves in the same way as *capital availability*. For the *Eco-bandwagon* effect the investors mentioned four sources of information: friends, financial advisor, press or media and research. They are depicted in the upper part of the CLD and have a + sign effect on the “*Eco-bandwagon*” bias.

Taking a general look at the model it may seem that everybody should be an investor

6.2 Loss aversion paradox

The loss aversion bias seems to apply to the green investors in a different way. On the one hand green investors do not want to lose their money but on the other hand they do not want to lose the “Earth”. The question is which one is stronger or how personal is the perception of the environmental problems. As a consequence the notion of loss should not be solely attributed to financial losses. *The fear of loosing is greater than the desired to win* can be re-written as *the fear of loosing the Earth is greater than all desires associated with monetary gains* for green investors. In other words, even though the green investor's decision can be highly rational from an environmental/ethical/social perspective, it can be unfavorable from an economical perspective.

¹⁰⁴ Druckman, James N. *On the Limits of Framing Effects: Who Can Frame?* Journal of Politics, 2001, p. 1041-1066

¹⁰⁵ Chong Dennis; Druckman James N. *A Theory of Framing and Opinion Formation in Competitive Elite Environments* Journal of Communication 2007 p. 99-118

6.3 So who is the green investor?

With the mention that this profile is not generable the following conclusions can be drawn about the green investor. The green investor is usually a European or an American. If s/he is from Europe there is a 60 % chance that he is from the UK. S/he usually has high-education and is working in social care, financial or environmental research or s/he is retired. There is a chance that he saw Al Gore's documentary *An Inconvenient truth* and that s/he has read a book about finance and sustainability. S/he has just either inherited or received a surplus of money. S/he is a risk taker although s/he does not really like it and makes investments on long term 5-years-plus time horizons. S/he is usually religious, such as Christian or Buddhist, though religion is secondary to his/her ethical beliefs. Thus spiritually deepens the notion of social responsibility for him. The green investor feels a responsibility towards the Earth even in pension age and wants to *save, change or improve* the Earth. Sometimes however s/he does not do everything for that as s/he has non-green investments as well. If s/he had 100 dollars it would put more than half in green funds.

6.4 How can the results be used?

- **A tree per thousand** Stimulating any of the desires at the heart of the presented model or both at the same time can led to increases in SRI. Investors want things to change. A suggestion from one of the investors is the development of a campaign that will directly link an investment of one thousand dollars or euros towards the planting of a tree.
- **Advertise through churches** – Conscience, morals and ethics is a driver for green investing as it is for religion. Approaching one to another can lead to gains for both.
- **Green investor guide.** Increased awareness is the key towards retail market growth. As search costs represent a barrier for green investors fund fairs, ethical/green investor guides, dedicated web sites can facilitate the flux of information.

- **Increased transparency and lower fees.** As green funds compete on the open market they are evaluated against normal funds conditions. Investor demanded lower fees and
- **Look for green consumers.** As green investors like to maintain cohesion with their life style choices and because some of the green investor's reasons are the same with green consumer's reasons it is likely that informational campaigns addressed to green consumers can transform them in green investors.
- **Authority of the green funds.** Investors raised legitimate concerns about the information haze and about the many definitions and approaches towards green and sustainability. An international authority regulating this will add legitimacy and diminish skepticism towards SRI.

7. Conclusions

SRI makes the link between market and sustainability. By its purpose and design SRI is addressing some of the environmental problems. The SRI retail market is currently undersized. The existing studies about the green investors focus more on demographic variables. This paper had investigated the perceived reasons, underlying factors and internal barriers affecting the green investor. The main findings of each of the three themes are presented further on.

Finding 1 – Perceived reasons. The reasons which appeared more often for people to invest in SRI are the desire to *save the Earth* and the *desire to gain profit*. They reinforce each other and are part of a net of other reasons and cognitive biases that influences them. The presence of the pieces of the model can act as predictors towards green investment. For that to happen things have to be put into context. The eight Keynesians reasons for investment apply to the green investors as well. However the rationality of the green investors goes beyond economic reasons. Green investing seems to be a function of education, awareness, capital and time availability, ethical and environmental beliefs, perceived personal impact, level of education as well as the nature of the work or education.

Finding 2 – Underlying reasons. The study of the underlying reasons reveals that there are cognitive biases that affect green investor's perception of both losses and environmental problems. The investigated biases apply differently to green investors as compared to the "ordinary" investors. The green investors while still paying attention to financial matters are more sensitive to losses in sustainability. Work or education within environmental areas is speculated to be a predictor for the green investing. This links to the difference in the frames applicable to green investors. The predominant frame for the green investors is that the "Earth needs to be saved" while the non green investors are usually more preoccupied with their financial future.

Finding 3 – Barriers for investing. The desire to invest in green financial products can be outweighed by the desire for convenience, lack of education, lack of awareness, lack of understanding of the business case for SRI or skepticism. Alleviating any of these can lead to develop the retail SRI market.

By enlarging the discussion on the reasons behind green investing this paper contributes to the enrichment of the notion of individual green investor. The study adds psychological and behaviorist reasons to previous debates, which were focused more on demographic reasons. This study has established a holistic approach on these reasons and suggested several ways in which they can be used to increase the retail market of SRI.

At the end of the day SRI holds the promise that one can still have the cake and eat it at the same time. However, making this promise self evident for all humanity may require the use of special tools. When considering perception, biases and psychology these tools may seem “manipulative”. It is ironic in a way, in the sense that we are using our imperfections to try to build a perfect world. Ultimately the question is how moral it is to use one’s conscience for profit? The very existence of green or ethical investing creates a normative statement, that those who do not invest in green financial products are un-ethical. To some, ethics is a desired trait and a driver for investment. That does not necessarily mean that the rest are un-ethical or have questionable morals. The choice should remain individual.

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Appendix 1 Interviews Questions

Interview questions – individual green investors:

1. Can you tell a few things about your background? (include age, work, beliefs, hobbies)
2. What are the reasons for you to invest?
3. What is the percentage of green investing in your total financial investments?
4. What would you do if your ethical portfolio underperforms? What if you have losses?
5. On which criteria do you choose a green fund?
6. What in your opinion can be improved to the current ethical/green financial products?
7. How and where did you first find out about the possibility to invest your money in a green way?
8. Do you consider that there is something about your personality that made you a green investor?
9. Why do you think people invest in green/ethical funds?
10. Are you happy with the rates of return from your green investments? Do you think other types will bring you more?
11. What are in your opinion the main barriers for an investor to become green?
12. How do environmental problems affect you personally?
13. What are your preferred information sources when you take the decision to invest?
14. Do you consider yourself risk adverse or risk taker?
15. What is the average length for your green investments?
16. Are you using any web pages or forums to get the information you need?

Appendix 2 Case of SAM Private Equity

Products strategy

Launched in 2000, SAM Private Equity today manages three funds as well as two mandates all focusing on venture capital in the Clean tech sectors, namely, energy, materials, water, and agricultural technologies.

SAM Private Equity is a pure VC4S player and has €248 million under management. €110 million have been invested in VC4S since 2000, with a total of 33 investments being made (average size of €3.4 million).

Mission

Sustainability-related trends are increasingly becoming the most important challenges of global industries. These fundamental and long-lasting challenges are shifting industry boundaries and will provide substantial growth opportunities to small, innovative companies that develop and deliver breakthrough technologies.

Outstanding investment opportunities currently exist for investors who have the resources and ability to assess next-generation technologies on a global basis, demonstrate exceptional transaction know-how, and deliver value-adding support to build portfolio companies.

Investors

SAM's Limited Partners include leading corporations, financial institutions (public pension funds, insurance), domestic and European public institutions and high net worth individuals. The investors are drawn from North America, Europe, and Asia.

The sustainability angle: investments focus on Clean technologies

SAM Private Equity has identified attractive industry sectors affected by global trends and regulations and are therefore facing the necessity to change and to seek innovative solutions and efficiency gains: energy, materials, water, and agricultural technologies.

The funds invest in early and expansion-stage businesses, primarily in North America and Europe.

Investment criteria:

- Management team with sufficient technical and executive capacity to execute its business plan;
- Projected market growth of at least 15-20% per annum;
- Demonstrated competitive advantage in technical solution on a global basis that are superior from an economic and sustainability point of view, and ideally have multiple potential applications;
- Offer a technology that has a clear path to commercialization and isn't dependent on other technologies which have yet to be developed;
- Robust intellectual property and IP protection;

Technology offers an opportunity to transform an industry, thus creating opportunities for strategic partnership with major industry partners;

Clear exit strategy to be implemented within 3-5 years and alignment of interests with other stakeholders.

Challenges

Fund raising for VC4S; not only for SAM fund but for the pure play co-investors upon whom SAM is dependent as well.

Example of an exit

Schmack Biogas AG is a leading German full-service provider of biogas plants. The company specializes in anaerobic digestion of biomass, a natural microbial process that converts organic material into a methane rich gas.

SAM participated in the last private equity financing round in May 2005 to provide growth capital and strategic advice to the company. As one of the largest shareholders, SAM is represented in the supervisory board.

In May 2006, SAM partially liquidated their investment in Schmack Biogas AG following the company's IPO at the Prime Standard in Frankfurt, Germany. The IPO was oversubscribed several times and the placement volume amounted to €71.3 million. The offer price was set at €31, representing a company value of €153 million. SAM realized a return beyond 10 times on the position it has exited¹⁰⁶.

Appendix 3 Ranking of social and environmental aspects by green managers

<i>Social aspects</i>	<i>Mean ranking</i>
<i>Equal opportunities monitoring data</i>	1
<i>Health and safety endorsements</i>	2
<i>Key ethical screens on company</i>	3
<i>Executive benefits</i>	4
<i>Number of industrial tribunals/grievances procedures</i>	5
<i>Financial donations by company</i>	6
<i>Accident rates</i>	7
<i>Number of company sponsored employee professional qualification</i>	8
<i>In house course training</i>	9
<i>Customers complaints</i>	10
<i>Financial support to any volunteer program</i>	11
<i>Sustainability training to supply chain</i>	12
<i>In company life style and health assessments</i>	13
<i>Level of employee community volunteering</i>	14
<i>Shareholder profile</i>	15
<i>Sickness absence rates</i>	16
<i>Customer inquiries</i>	17
<i>In kind donation by company</i>	18

¹⁰⁶ More information www.sam-group.com

<i>Employee turnover</i>	19
<i>Overall annual pay increase</i>	20
<i>Pay ratio to market</i>	21
<i>Key campaign achievements</i>	22
<i>Financial support for campaign activities within the supply chain</i>	23
<i>Key campaign support to supply chain</i>	24
<i>Pay ratio between the lowest and the highest 10%</i>	25
<i>Key campaigning partners</i>	26
<i>Give as you earn scheme for staff</i>	27
<i>Average payment time</i>	28
<i>Redundancies terminations</i>	29
<i>Internal promotions</i>	30
<i>Appraisal completion</i>	31
<i>Assistance with enquiries to franchisees and customers</i>	32
<i>Level of employment of local residents</i>	33
<i>Service level on orders</i>	34
<i>Number of campaigns organized</i>	35
Number of visitors- public tours	36

<i>Environmental aspects</i>	Mean ranking
<i>Environmental performance in other countries</i>	1
<i>Environmental prosecution record</i>	2
<i>CO2 emissions</i>	3
<i>Externally validated EMS</i>	4
<i>Waste management practices</i>	5
<i>Own environmental management system</i>	6
<i>Permitted pollutions to air</i>	7
<i>Permitted pollutions to water</i>	8
<i>Permitted pollutions to land</i>	9
<i>Efficient energy use</i>	10
<i>Corporate environmental statement</i>	11
<i>Non-environmental prosecution record</i>	12
<i>Relationship with indigenous work force</i>	13
<i>Sustainability resourced raw materials</i>	14
<i>Energy use</i>	15
<i>Recycling practices</i>	16
<i>Effects on local labor force</i>	17
<i>Re-use of brown fields</i>	18
<i>Relationship with neighbors</i>	19
<i>Transport policy</i>	20
<i>Use of landfill for waste</i>	21
<i>Sustainable building materials</i>	22