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Going green with behavioural economics

How to combine business and ethics

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JEL-Klassifikation:

F64 Environment

Q56 Sustainability

Q58 Government Policy

Abstract

This paper calls for an increased discourse between Fridays for Future and representatives of business. Fridays for Future play a key role in educating the public and raising awareness of scientific reports, such as the Intergovernmental Panel on Climate Change (IPCC) assessment, which demonstrate the urgency with which we must tackle climate change. This is important to gain world attention on pressing questions of our time. At the same time, it is crucial to examine the main drivers in our socio-economic system to understand that the spread of information alone is insufficient to bring fundamental change. Human behaviour remains propelled by both the quest for prosperity and the call for a fair and sustainable economic system. We need to understand how to expand our economy in a sustainable way, how business can foster sustainable innovations and how to motivate consumers to support companies by buying green products. Companies are the necessary key for green innovations. These innovations are only as strong as their demand. Concern about the environment has widely spread in our society. At the same time this concern is not always translated into our actions. Behavioural Economics integrates psychological insights of human behaviour into economic theory and shows us solutions how to overcome the attitude-behavior-gap. Our aim is to work out how behavioural economics can be used to support environmentally friendly practices with incentives. All of our purchase decisions are influenced by cognitive biases. It is estimated that 40 percent of our day-to-day decisions are based on habits. The status quo bias or the discounting of future value often hinder pro-environmental behaviour. Therefore, purely apportioning blame will not result in changes. Instead, an adjustment of the framework through restructuring incentives to overcome biases can as a piece of the puzzle help to achieve the change required. Through the recognition of human “defaults” these can then be harnessed to nudge green actions. Similarly, the individual structural pursuit of profit can be channelled towards green growth. Through the spread of information and effective incentives, we can spark innovations which defuse tensions between economic growth and environmental protection, facilitating sustainable development.

1 Introduction

There is an established perception of an inherent trade-off between the environment and the economy. Therefore, when addressing environmental concerns, climate activists, including supporters of Fridays for Future, often blame the focus on profit-making and increasing economic growth of our capitalist socio-economic system. This has been expressed by protests organized by branches of Fridays for Future and by radical actions organized by environmental activists belonging to the group Extinction Rebellion. German industry thinktanks and associations were specifically targeted, these including the German Economic Institute in June 2019 and the Haus der Deutschen Wirtschaft in Berlin in July 2020 (Welt, 2020).

In view of these tensions, this paper calls for an increased dialogue between environmental activists and actors in the free economy. This paper emphasizes that it is too simplistic to see the well-being of the economy versus the environment as a zero-sum game. Instead, different scholars have identified “a multi-dimensional relationship between economy and environment, calling for a holistic perspective on climate change, which recognizes the interdependence of environmental, political, social and economic issues in order to achieve global sustainability” (Carter, 2018, 26). As outlined by the World Commission on Environment and Development (WCED), sustainable development is “development that meets the needs of the present without undermining the ability of future generations to meet their needs” (1987, 16).

Environmental activists like Fridays for Future play a crucial role in raising awareness for climate change, informing the public and calling attention to the information provided by scientists. At the same time companies play a major role in putting into practice the innovations necessary for environmental protection (Hüther/Mack, 2019). For such innovations, the right economic incentives and nudges are helpful or guidance on societal, company and consumer level. The triad of information, innovation and incentives can then serve as an effective mechanism to pave the road towards greater sustainability.

The multifaceted relationship of economic and environmental issues must be considered by managers. The direct consequences of climate change we have experienced during the past decades, such as global warming and a significant increase in natural disasters, have been accompanied by the rise of climate activism around the world. They have resulted in an increased consciousness surrounding the importance of environmental measures in our society. On the micro level this can be observed through the increasing demand for green goods. On the macro level, it is seen in the increasing success of green parties in national elections and the green orientation of other parties, resulting in a significant increase of national and international climate policies. On the political and societal level, green politics and economics have become one of the defining paradigms of our time. Consequently, on a meso level, companies are advised to acknowledge this trend and the voice of climate activists. Recent studies demonstrate that green practices can improve the financial performance of companies, improve their reputation, and give them a competitive edge, if the ecological efforts are communicated effectively (Keidel, 2019). Suggestions of corporate ecological practices incorporating behavioural insights are provided.

2 Sustainable and inclusive growth

Economic growth led to a substantial increase in average living standards worldwide and a reduction in poverty in the developing world. At the same time global inequality increased and the modern way of life causes ecological crises (UNDP 2017; OECD, 2020). The Organization for Economic Co-operation and Development (OECD) follows the concept of inclusive growth as economic growth that is distributed fairly across society and creates opportunities for all (2020). This concept focuses on questions of a fair share in a globalized economy. Complementary there are ecological challenges standing in interaction with social issues. Within the United Nations (UN) 2030 Agenda for Sustainable Development, business leaders worldwide committed itself to achieve "sustainable development in its three dimensions – economic, social, and environmental – in a balanced and integrated manner" (UNDP, 2017).

2.1 Our warming planet

Currently, the world is heading for temperatures in excess of 2.0°C above pre-industrial levels regarded by scientists as the maximum threshold to prevent dangerous consequences that will deeply affect life on our planet (Carter, 2018; UN, 2019; IPCC, 2018).

The last year, 2019, has been recorded as the second hottest year on record, just after 2016 and with that wrapping up the hottest decade in history every recorded (UBA, 2020; NOAA, 2020). The global temperature rise of 1°C relative to 1951-1980 average temperatures is already having devastating effects. Only recently, bushfires in Australia burned more than 48 million acres of land (CDP, 2020). While bushfires are regular occurrences in Australia, reports have estimated an increase of 40 percent between 2011 to 2016 (Dutta et al., 2016). Further examples of the serious climate shift are the Monsoon rains in Southeast Asia, that have been arriving earlier in recent years accompanied by increasingly heavier rainfall (CDP, 2020). Human health is being significantly affected, with air pollution alone calculated to be causing 6 to 7 million premature deaths per year. In Europe, over 400.000 people are estimated to die prematurely due to air pollution (EEA,2019). The UN emissions gap report states that carbon emissions must be reduced by 7.6 percent every year between 2020 and 2030 to get on track towards the 1.5°C temperature goal of the Paris Climate Agreement (UNEP, 2019). The Intergovernmental Panel on Climate Change warned that going beyond 1.5°C would cause wide-ranging, destructive climate-change impacts, with significant increases in the frequency of natural disasters, such as the heat-waves and storms witnessed across the globe during the last few years (IPCC, 2018).

Businesses have already understood their unique responsibility in achieving global sustainability. This has been called for by Kofi Annan 20 years ago, at the 7th Secretary-General of the United Nations stating in a speech at the American Chamber of Commerce, "Business is used to acting decisively and quickly. The same cannot always be said about the community of sovereign States. We need your help – right now". This is in particular the case in our era of globalization, where through the possibility of global sourcing, companies are no longer subject to just one national regulation. Companies of all sizes should be aware of this responsibility, as in aggregate Small and Medium Sized businesses (SMEs) account for 60-70 percent of industrial pollution in Europe (Koirala, 2019).

2.2 The evolution of environmental activism

The idea of sustainability has come a long way. Originally, the term “Nachhaltigkeit” (sustainability) dates back to the 18th century. In relation to forest management Carl von Carlowitz laid the basis of ecological sustainability by emphasizing that while here is economic need to use the forest, one needs to bear in mind the necessity of the regeneration process, and thus must be careful to ration it to avoid future hardship (Carlowitz, 2013, 216).

While the concept of sustainability was set aside for two more centuries, conservationism took shape, describing an approach to land management that emphasises the efficient conservation of natural resources so that they can later be developed for the benefit of society. During the late 19th, early 20th century conservation and nature protection groups, mainly middle-class people, started to take interest in the protection of wildlife and natural resources (Carter, 2018).

In the early 60s-70s a new wave of environmental activism took off. Only then, in the late 60s, a green ideology and an environmental movement developed (Carter, 2018). These groups raised similar concerns to those we hear today warning about the loss of biodiversity, ozone depletion, acid rain and climate change. The movement was driven by the idea of a “global ecological crisis that threatened the very existence of humanity” (Carter 2018, 29). This idea was initiated by the publication of “The limits to growth”, a global empirical study commissioned by the Club of Rome and financed by Volkswagen foundation. Released in 1972 the simulations warned that if business and population growth were to continue as it did at the time, the depletion of resources would generate the beginning of the collapse of industrial and agricultural growth sometime during the second decade of the twenty-first century. The reduced availability of food and services would then force the decline of population (Meadows et al., 1972). While the study played an important role in raising concern about environmental degradation, it soon faced severe criticism as Meadow et al. missed scenarios of economic growth enabling innovations that would in turn contribute to reduce emissions. Stimulated by these developments, the World Commission on Environment and Development laid out an agenda for sustainable development in 1987. Through these steps, the concept of sustainability as an ecological term got increasingly expanded with economic aspects.

In 2015 the 17 goals for sustainable development (SDGs) put forward by the UN for their 2030 agenda, emphasise the holistic approach needed to achieve global sustainable development. Build on the principle “leaving no one behind”, the goals address global challenges related to poverty, inequality, climate change, environmental degradation, peace, and justice (Figure 2-1).

Figure 2-1: The 17 Sustainable Development Goals

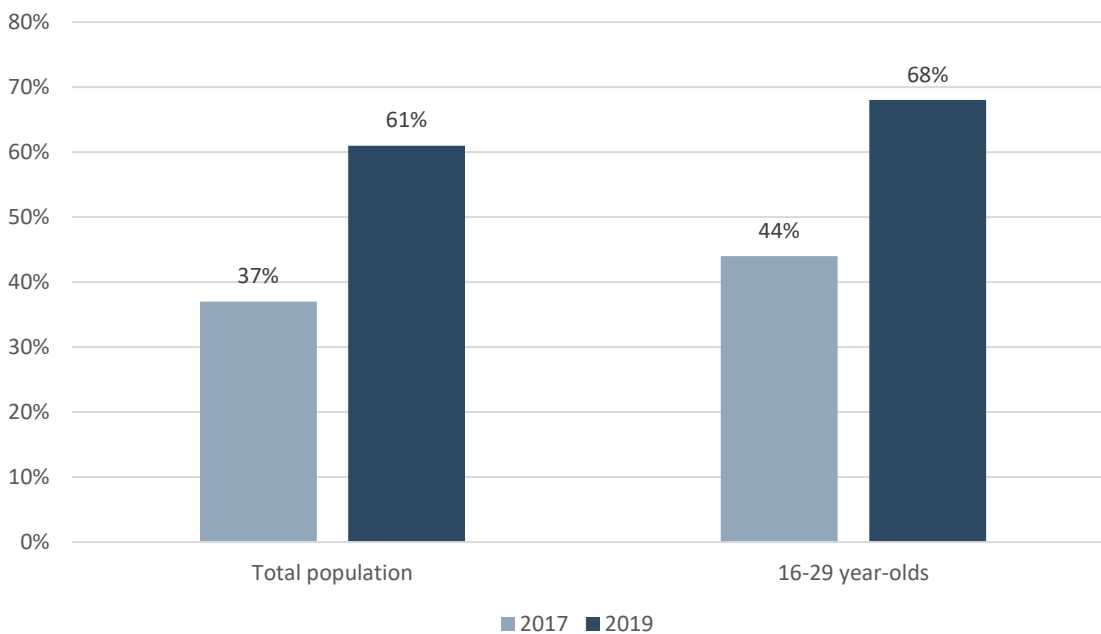


Source: UN, 2015

Today the world is increasingly united that urgent action needs to be taken to tackle climate change. The SDGs are a call for action by all countries recognizing that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities (UN, 2015). So beside worldwide political efforts business plays a key role in achieving sustainable development goals. Next to the UN efforts Fridays for Future was initiated by Greta Thunberg’s school strike in August 2018. Her action caught the attention of young activists all over the world who consequently came together forming the global network Fridays for Future. With the call for the third Global Climate Strike the movement mobilized around 7.6 million people in 185 countries in September 2019 (Moor et al., 2020). Following Fridays for Future, the year 2019 marked the rise of other climate campaigns like Extinction Rebellion and the US-based Sunrise Movement. While the Corona-Crisis had a significant impact on Fridays for Future, the acts continued with events such as the live stream hosted on the 24th April gathering close to a quarter of a million views.

Youth activists have played a crucial part in spreading information about climate change in our population. Reinforced by the extreme weather conditions we are increasingly experiencing in recent years; they have significantly strengthened the environmental awareness in our society. This is shown by a survey conducted by the Institut für Demoskopie Allensbach. Between the start of 2017 to 2019 the fraction of society concerned about climate change has increased from 37 percent to 61 percent, in the younger generation an increase from 44 percent to 68 percent is seen (Figure 2-2).

Figure 2-2: Percentage expressing deep concern about climate change



Source: Allensbacher Archiv, IfD-Umfragen 11066 und 11097, 2019

This increased public climate concern in turn also established itself on the political realm. Green Parties across Northern Europe have been given a notable push. Die Grünen have tripled their tally since the 2017 general election from 8.9 percent to 18 percent as of August 2020 in a poll, which asked how one would vote if election were to be held on Sunday (Politico, 2020). Other parties have proven adept to new political interests in our society “denuding them of their own radicalism” (Carter, 2018, 32). Today, almost all parties have included climate goals on their agenda, resulting in stronger environmental governance.

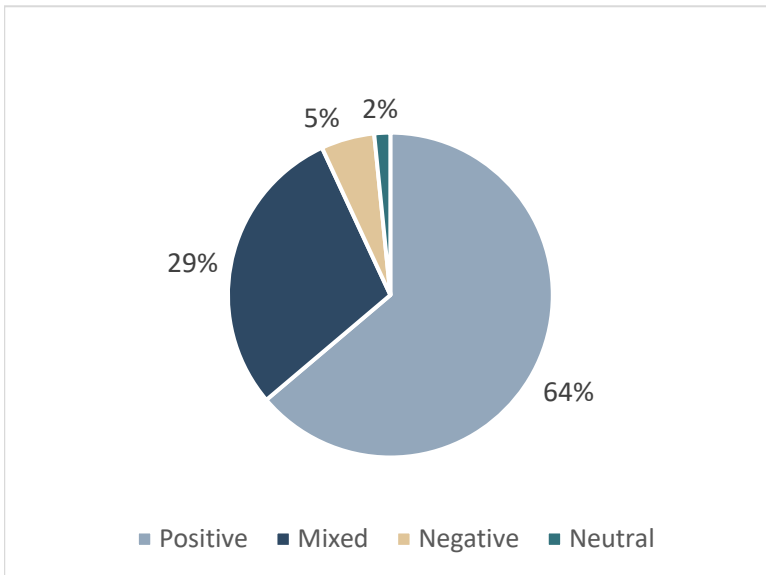
2.3 The green business case

The previous discussion shows that the world is facing huge social and environmental challenges going hand in hand with increased public interest. Moving forward green initiatives we need to recognize that our capitalist socio-economic system enables the conditions for important green transformations. Instead of understanding the pursuit of profit and sustainability as opposites consumption and green growth need to be channelled in the same direction. The link that has been established between taking environmental measures and generating profit, is often referred to as the ‘green business case’. At its core it argues that certain strategies for sustainable businesses exploit win-win situations that reconcile environmental protection and financial success (Figge/Hahn, 2012).

More and more empirical studies describe cases where CSR, in particular corporate ecological performance (CEP), is positively related with corporate financial performance (CFP) (Dixon-

Fowler et al., 2013; Endrikat et al., 2014). Examining empirical studies from 1990 to 2019, Keidel (2019) outlines that a majority of empirical studies support a positive relationship between CEP and CFP. The literature examining the relationship of corporate ecological performance and corporate financial performance has increased significantly, among these also the studies confirming a positive relationship have increased exponentially. As shown by Figure 3, the literature confirming a positive relationship between CEP and CFP form a significant majority, constituting 64 percent of all 76 examined studies. Since 1990 the literature depicting a positive relationship has increased exponentially. The significant number of studies documenting mixed results (29 percent) needs to be noted as well, as they indicate that the financial results of ecological practices may depend on contextual factors, such as the companies size (Keidel, 2019), the industry (Figge/Hahn, 2012), and whether an active or passive sustainability strategy is practiced (Endrikat et al., 2014).

Figure 2-3: Relationship between corporate ecological and financial performance



Source: Own depiction based on Keidel, 2019, 109

While the majority of literature notes, that there is a positive relationship between ecological and economic performance, this correlation is often not particularly pronounced (Keidel, 2019). There is strong evidence, however, that a negative relationship can generally be firmly negated. For this reason, a limit of financial resources cannot be stated as legitimate justification to not engage in pro-environmental practices (Keidel, 2019, 217; Figge/Hahn, 2012).

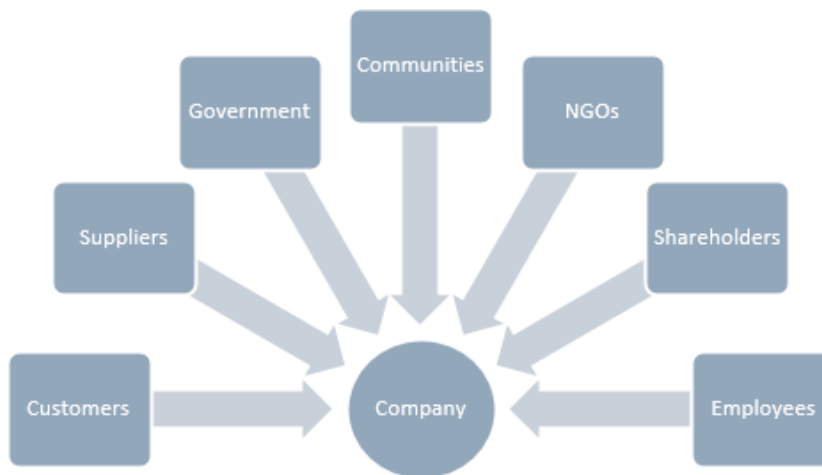
It is further noted that the effect is significantly influenced by a company’s size, as this correlates with its visibility. In addition, much stronger evidence for the green business case is found in the Business-to-Consumer (B2C) compared to Business-to-Business (B2B) sector (Keidel, 2019). These findings further emphasise that the awareness of consumers plays a major role in determining the extent to which a company’s ecological performance influences its financial performance.

To achieve the necessary changes, neoclassical approaches in environmental economic theory, put forward as solution for sustainable growth, that externalities should be internalized, through the creation of new markets or other financial incentives. The environment is turned into a commodity and the level of environmental protection is determined by consumer demands and the supply costs, constituted by the costs of protection and opportunity costs (supply costs). Supply and demand are then guided in two main ways. For one, by pricing existing market activities, for instance in the form of carbon taxes or by subsidizing green initiatives. Secondly, by creating markets for environmental goods and services, as seen by the implementation of the EU emissions trading system (EU ETS) working on the cap and trade principle, introduced in 2005, as principal element for climate protection in the EU (UBA, 2019). Globally just over 40 governments have adopted carbon pricing mechanisms during the last two decades (World Bank, 2020). These incentive systems are based on the idea of converting green issues into a business case. Recognizing the findings about the importance of consumer awareness classical incentive systems can be enlarged with behavioural economics tools to support environmentally friendly behaviour (see 3).

3 Business opportunities of green growth

As described in the previous chapter in recent years a hard border between generating profit and taking environmental measures could be overcome. With a progressively further developed consciousness for global sustainability it is becoming increasingly profitable for firms to listen to the voices of environmental activists and engage in environmental measures and activities (Albertini, 2013; Dixon-Fowler et al., 2013; Endrikat et al., 2014). This opens up the possibility to reconcile strategic practices of ecological corporate responsibility with the objective of maximizing shareholder value (Falck/Heblich, 2007).

Milton Friedman who received the 1976 Nobel Memorial Prize in Economic Sciences constituted that companies only have the responsibility to respond to the interest of shareholders. According to him, “[t]he social responsibility of business is to increase its profits” (1970, 1) – but only within the rules and without deception and fraud. In this context, he argued that managers must not extend the corporate environmental and social performance of their company beyond what is necessary to comply with legal regulations (1970). However, his shareholder approach was soon extended to the stakeholder approach by Freeman. Corporate strategy should not be restricted to the interest of shareholders but instead should include “any group or individual who is affected by or can affect the achievement of an organization’s objectives” (Freeman, 1984). With that the firm’s responsibility got expanded to creating value for customers, suppliers, employers, communities and shareholders (Freeman, 1984; Göbel, 2017, 133). Dyllick (1984) differentiates between internal (shareholders, employees, management) and external stakeholder groups, whose interests should be weighted differently. A business only responding to a few of these stakeholders in isolation, would likely be a business in decline (Freeman, 1984). Moderating the often conflicting interests between different stakeholders arises as a central management task (Eyerund/Möller, 2016).

Figure 3-1: Typical Stakeholders

Source: Based on Freeman, 1984 and Göbel, 2017, 133

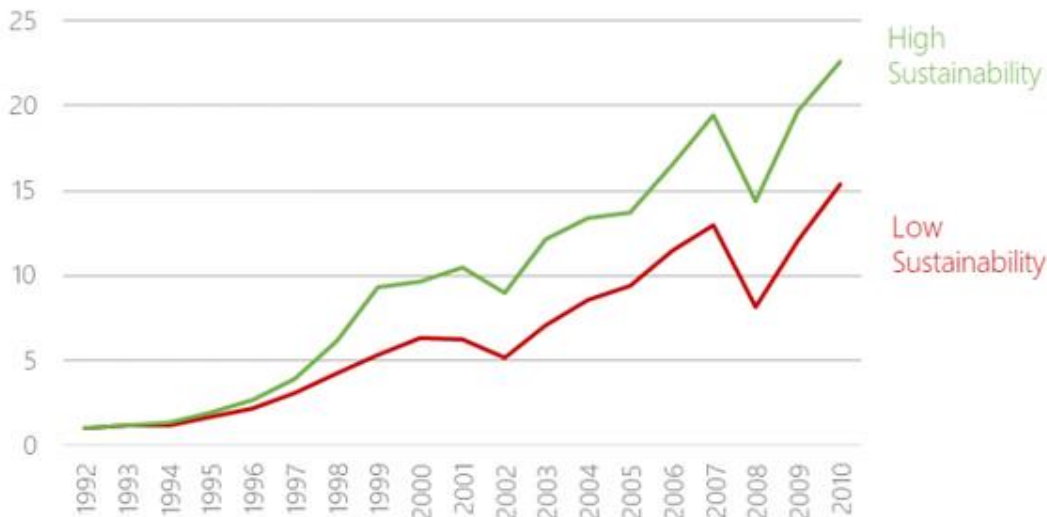
With the increasing concern of consumers about environmental issues, their demand for green products, as well as their willingness to pay a premium for such products has increased. (Biswas/Roy, 2016). A 2015 consumer survey revealed that 66 percent of global respondents are willing to pay more for sustainable goods, up from 50 percent in 2013 (Nielsen, 2015). This opens an opportunity for firms to increase revenue by capturing these new markets for green products. These surveys must be viewed with caution because results are not always reflected in sales figures (see 4.1). An example for is the success story of Tesla, which, with a market capitalisation of 300 billion US dollar as of July 2020 has become the highest valued car manufacturer in the world. Stakeholder involvement can in this way be used to achieve a competitive advantage. Research suggests that eco-innovative companies of all sizes are growing, on average, at a rate of 15 percent annually, while their respective markets have remained stagnant (UNEP, 2015, 41). Literature has also revealed that capturing green markets is an influential motive for eco-innovation and eco-entrepreneurship. For example, in a 2012 survey on eco-innovation, 48 percent of EU SMEs cited market demand as a main motive to offer green products (Eurobarometer, 2012). These are a few examples giving an impression of how market demand can support green innovations.

Financial advantages through a “greening” of the company could also be obtained by significant saving through a more efficient use of resources, the use of re-cycled materials, the reduction of waste and the reduction of costs related to transport and packaging (Koirala, 2019). While in the past the costs of green materials have posed a significant barrier to “green” transformations of companies, we have experienced a significant reduction in the costs of renewable energy over the last years. More than two-thirds of SMEs indicate being satisfied with their return on investments in resource efficiency (Eurobarometer, 2012).

Further pressure is put on businesses with the increasing spread of ESG (Environmental, Social and Governance) criteria. 80 percent of the world’s largest corporations have started to use the standards by the Global Reporting Initiative (GRI) for their sustainability reports since its launch in 2000. The set of standards for a company’s sustainable operations facilitates the screening of companies for responsible investors as the lack of standardization has for a long time been an obstacle for ESG orientated investors. The pressure from the buy side for sustainable practices is increasing with institutional investors, as well as large asset management firms, such as BlackRock. A study by Boston Consulting Group shows that 75 percent of senior executives in investment firms see a company’s sustainability performance as a crucial factor to their investment decision (2016). Accordingly, stocks of sustainable companies tend to outperform those with non-sustainable practices on the stock market. Eccles et al. found that a \$1 investment at the beginning of 2003 in a portfolio of high-sustainable firms would grow to \$22.60 by the end of 2010, while the investment in low-sustainability firms only increased to \$15.40 (Figure 5). Current analysis and comparison of the MSCI World and the MSCI World SRI shows, that in the last 12 month (especially during the Pandemic crisis in 2020) the ESG based SRI index outperformed the conventional index by 5 percentage points (28.9.2020).

Figure 3-2: ESG & Market Performance

Evolution of \$1 invested in the stock market in value-weighted portfolios



Source: Eccles et al., 2014

Legal policies have also become increasingly stricter. Over the past years there have been more and more national and international agreements to increase the regimentation of the social and ecological performance of companies. Necessity arises to implement such stationary provisions to avoid costly penalties, but compliance is not always sufficient anymore. This is in particular the case in light of an increasingly stricter policy framework. Only recently, early September 2020, Ursula von der Leyen announced that the European Union aims to tighten its 2030 carbon-

reduction objective. The binding target of a reduction in carbon emissions of 40 percent compared to 1990 should be tightened to a reduction by 50-55 percent (FAZ, 2020).

These developments indicate that in order to be sustainable in the long-term, it is becoming increasingly important for companies to take up environmental measures early and to not just comply with regulations, but to differentiate from competitors by taking up a pioneering role (Hervani et al., 2005).

4 Mind the gap – with behavioural economics

The discussion shows that well-being of the economy versus the environment is not a zero-sum game. It became increasingly profitable for firms to invest in green innovations. Moving forward green initiatives we need to understand that political agenda, business innovations and consumer behaviour must go hand in hand. Economic growth and consumption need to be channelled in a green direction. Fridays for Future rightly demand shifts in our society and their protests have succeeded in achieving vital changes in the minds of a majority of people. Such changes in mind-sets must now be translated into substantial changes in behaviour. Why this is more difficult in everyday life than generally assumed can be explained with behavioural economics. We observe a stable gap between findings in population surveys compared with analysis of sales figures of green products. Behavioural economics can help us understanding this gap. It integrates psychological insights of human behaviour into economic theory and shows us how to use incentives to motivate companies and customers to choose the wanted green options.

4.1 Attitude or Mind-Behaviour Gap as barrier

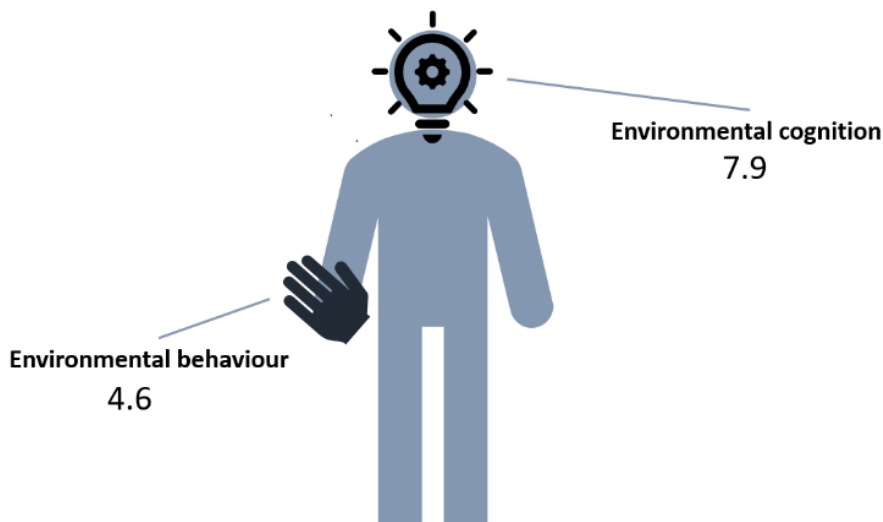
Human behaviour, when it comes to uncertain events in the distant future, differs significantly from the rational homo oeconomicus, that is presupposed by traditional economists. The homo oeconomicus is fully focused on the maximisation of his own profit and is able to do so by performing an accurate cost-benefit analysis under full information (Kirchgässner, 1991; Mill, 1836). It pursues clear goals and does not struggle to achieve these. Human behaviour and the decision-making-framework in which we perform actions impacting the environment, varies significantly from these assumptions. We are not always able to do a rational cost-benefit analysis, and often do not manage to align our actions to our mindset. Humans are emotional, biased, and often irrational.

Concern about the environment has widely spread in our society, with over 60 percent expressing deep concern about climate change (see 2.2). This concern is not always translated into our actions. Significant deviations have for instance been observed between the purchasing attitudes and actual buying behaviour of consumers (Eyerund, 2015; Kollmuss/Agyeman, 2002; Terlau/Hirsch, 2015). A study coordinated by the Bundesumweltministerium (BMU) and the Umweltbundesamt (UBA), asking the population every two years about their perception of the state of the environment and their own environmental behaviour evinces a difference of 36 percent between a “green” mind-set and actual action in our population (Figure 5). The gap

might be even larger as we tend to exaggerate our pro-environmental behaviour, nowadays partly due to social boasting (Stott et al., 2020). Stott et al. found for instance with regard to recycling behaviour that there was a 35 percent difference between stated and actual behaviour (2020, 59).

Figure 4-1: Attitude-behaviour gap on environmental consciousness

How environmentally conscious are we on a scale from one to ten ? n=2.017



The figures were determined with a set of 7 to 8 claims about environmental issues and one's own behaviour
Source: UBA/BMU, 2019

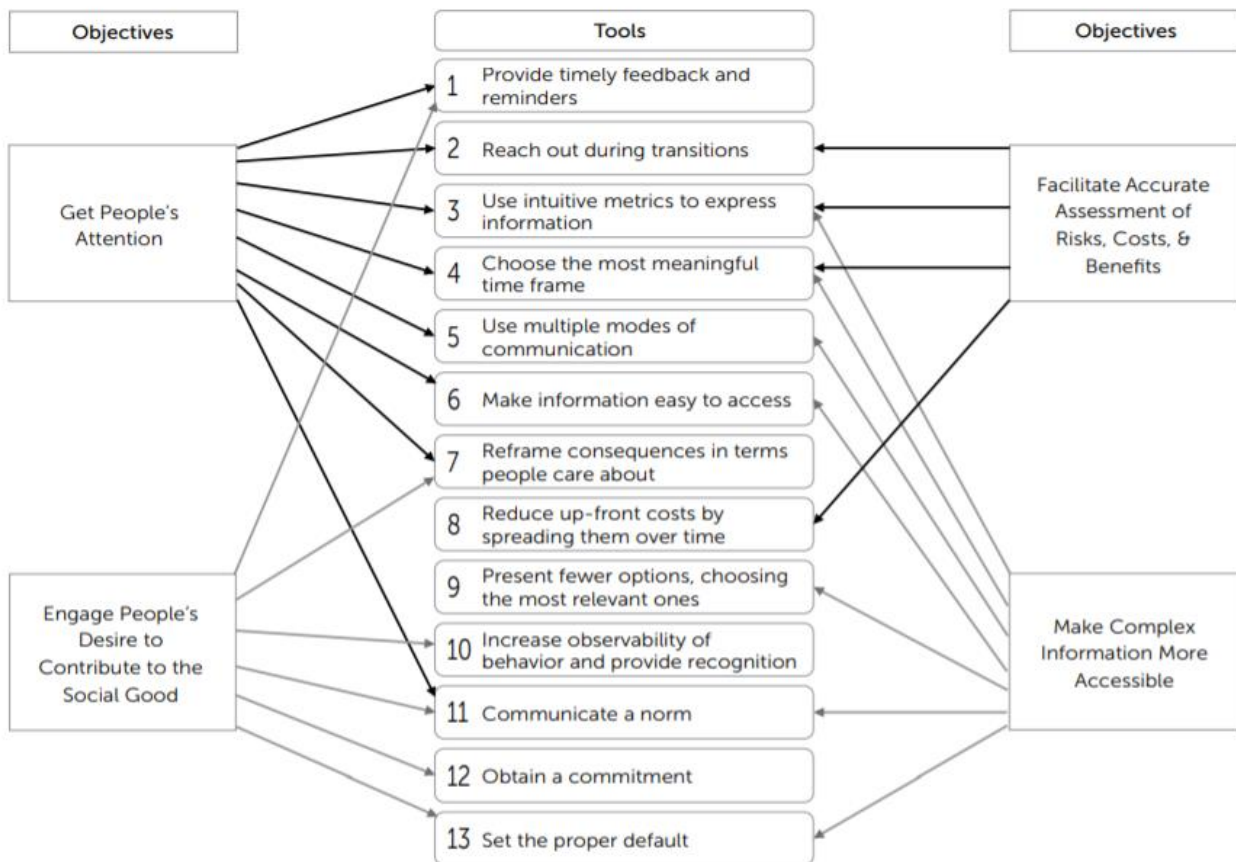
Attitude-behaviour gaps are a reoccurring phenomenon in almost all sectors of life. A meta-analysis by Webb and Sheeran (2006) shows that a medium-to-large change in intention only leads to a small-to-medium change in behaviour. This gap can be explained by the different biases inherent to human behaviour, one being time discounting. Time discounting refers to the tendency of humans to discount the value of future rewards (Frederick et al., 2002, 352). We often prefer smaller immediate gains over larger delayed gains. In the view of long-term effects of environmental goals this is an important fact to consider. Sustainable goals are cross-national and cross-generational tasks demanding great efforts today for causing positive impact in future.

4.2 Drivers for green action

Behavioural economics recognizes these biases in human behaviour. By understanding the cognitive distortions humans are governed by, their irrationality becomes predictable (Ariely, 2009). The numerous biases can then be used as tools, that can positively nudge people in a certain direction and help them align their behaviour with their mindset. In this context Yoeli et al. (2017) identified 13 tools that can be used to encourage pro-environmental behaviour. While Yoeli et al. focussed on how these tools can be used to strengthen energy and environmental policy, they are just as relevant for the product development and advertisement and can be applied to narrow mind-behaviour gaps of ethical consumers. The tool includes choice

architecture interventions (e.g. setting defaults, choosing frames, reducing the number of options), methods of persuasions (e.g. communicating social norms, obtaining commitments) and communication (e.g. providing timely feedback, employing intuitive metrics). These are linked to the four main objectives for effective environmental policy: “Get People’s Attention”, “Facilitate Accurate Assessment of Risk, Cost and Benefits”, “Engage People’s Desire to Contribute to the Social Good”, “Make Complex Information More Accessible” (Weber, 2020).

Figure 4-2: Behavioural science tools to encourage pro-environmental behaviour



Source: Yoeli et al., 2017

Communicating social norms

Social norms have a significant impact on our behaviour (Farrow et al., 2017; World Bank, 2015, 167-169; Abrams et al., 1990). For this reason, the communication of social norms has proved to be an effective tool in encouraging pro-environmental behaviour (Allcott, 2011; Ayres et al., 2013; Ferraro et al., 2011). A notable example is a large-scale project run in the United States aimed at encouraging the adoption of energy-conserving practices. Reports comparing one’s own energy use to that of one’s neighbours were sent out to 600,000 households. This intervention managed to reduce energy consumption by 2 percent on average, equivalent to the effect of a 11-20 percent increase in electricity prices (Allcott, 2011). While the initial effect

of such intervention tends to decrease over time, repetition of such projects, resulted in new consumption habits and the adoption of more environmentally friendly technologies (Allcott/Rogers, 2014; Ferraro et al., 2011).

Careful targeting proved to be crucial to achieve the desirable outcome. For example, intervention like the one described above were two to four times more effective when targeted at liberals than at conservatives (Costa/Kahn, 2013). Additionally, households with low levels of energy consumption, often increased their consumption after being informed of a higher average level of consumption in their neighbourhood (Schultz et al., 2007). For this reason, when wasteful and in general environmentally harming behaviour is prevalent, communicating social norms through normative messages may be more effective, e.g. "Please don't ..." (Cialdini, 2009; Cialdini et al., 2006).

Setting default options

Next to the effective communication of social norms, setting default options can be a powerful tool in bridging mind-behaviour gaps. Such pre-set courses of action are particularly effective when there is inertia or uncertainty in decision-making (Thaler/Sunstein, 2009, 8). The nudge recognizes that people's behaviour may not be determined by active choice most of the time (Thaler/Sunstein, 2009). It exploits the power of inertia and people's tendency to procrastinate to achieve the favourable outcome (Sunstein/Reisch, 2013; World Bank, 2015, 170 f.).

Such default opinions have proven successful in various sectors/under various contexts including the health care sector (Johnson/Goldstein, 2003), for retirement saving outcomes (Beshears et al., 2009), and also in increasing sustainable behaviour (Sunstein/Reisch, 2013; Pichert/Katsikopoulos, 2008). "Green defaults" have for instance been tested, when choosing an electricity provider, conserving energy and reducing food waste. The power company Energiedienst GmbH, for instance, offered three tariffs, a default "green" tariff, a cheaper but less green tariff, and a greener more expensive tariff. 94 percent of consumers stayed with the green tariff, whereas the national average percentage of consumers actually choosing such "green" tariffs was less than 1 percent for a long time (World Bank, 2015, 170; Pichert/Katsikopoulos, 2008).

For the implementation of such "Green defaults" the right degree of the nudge must be carefully considered. While a significant improvement wants to be achieved an overly ambitious default may lead more people to opt-out (Brown et al., 2013).

Framing

It is not about what you say, it's how you say it. In many situations we alter our decisions or opinion depending on how information is communicated to us. Linguistically different descriptions of objectively equivalent options can lead to different outcomes. This is explained by framing effects. A communicator can choose to place an informational emphasis in a message, frame the message in a certain way, and thereby influence the way it is perceived.

Different types of framing processes have been identified. These can roughly be classed in three overarching categories: risky choice framing, attribute framing, and goal framing (Levin et al. 1998). Risky choice framing refers to the framing of options with different risk-levels, where the options are evaluated differently, depending on whether they are framed in positive terms, as gains, or in negative terms, as losses. The Nobel laureate Kahnemann and his colleague Tversky (2013) found that generally individuals are risk seeking when the choice is between a loss and a potential larger loss, and risk averse when the choice is between a gain and a potential larger gain (Kahneman/Tversky, 2013).

Another framing approach is attribute framing. By either highlighting the positive or negative aspects of two choices, their attractiveness relative to each other may be perceived differently. For instance Levin and Gaeth (1988) found that a package of ground beef was perceived as better tasting, when labelled as “75 percent lean” instead of “25 percent fat”. Similarly, Dunegan found that members of an international company gave lower evaluations to a team with a 40 percent failure rate versus a 60 percent success rate (Dunegan, 1993). Also, here the same alternative was rated better when its positive aspects were highlighted. With regard to marketing green products a simple example would be to market bottles that are partly made out of recycled plastic with statement such as “made out of 30 percent recycled bottles” instead of “made out of just 70 percent new plastic”.

Likewise, our behaviour can be significantly influenced by the goal framing effect. Meyerowitz and Chaiken (1987) found that the negatively framed encoding of the good consequences was more powerful than the positively worded encoding; they tested this on different way of marketing to breast-self-examination (BSE) and found that people were more highly motivated to avoid a loss by doing BSE than they were to obtain a gain by doing BSE.

Frame-circuits have direct connections to the emotional regions of the brain (Lakoff, 2010). Lakoff gives as example the way environmental issues should be framed to conservatives in the United States. Since many hold a strongly anthropocentric view that man is above nature ideology, it would be more effective to frame global warming in terms of how humans will be affected (Lakoff, 2010). In general, highlighting the health-related impacts of climate change is effective in marshalling pro-environmental actions, as it is particularly successful in making climate change personally relevant and emotionally engaging (Asensio/Delmas, 2016; Maibach et al., 2010).

Overall, the literature demonstrates, encoding information in the right way significantly affects the outcome between two choices. Companies should for recognize the power framing for the performance of consumer surveys, as any question can be presented in a way that encourages answers to the surveyor’s preference and when marketing environmentally friendly practices.

5 Conclusion: Information, Incentives, Innovation

This paper highlights that the collaboration between Fridays for Future and the top management level of companies has the potential to help achieve sustainable change at the

pace required. Environmental activists play a crucial role in spreading information to strengthen environmental consciousness in our society. However, this needs to be done in the right way. The apportioning of blame or finger pointing on companies goes in the wrong direction. While companies are often denoted as the main culprits responsible for harming the environment, they are necessary for key innovations which would facilitate the decoupling of prosperity from the degradation of the environment. This kind of “green” growth, which is decoupled to the greatest extent possible from the use of resources is crucial as a step towards the achievement of the sustainable development goals. However, these innovations cannot be conjured up from nothing; they require sufficient capital and expertise.

In our service-based economy, consumer demand plays a crucial role in this. Significant changes can already be observed in the minds of many consumers, something environmental activists have played a central part in. At the same time, attitude-behaviour gaps are often observed in the consumption patterns of consumers. While many consumers state that they want to purchase environmental products, this is not often enough translated into their actions. The findings emphasise that the awareness of consumers plays a major role in determining the extent to which a company’s ecological performance influences its financial performance. Here, the application of behavioural tools can be employed by companies to nudge consumers towards sustainable behaviour. This guidance on a sub-conscious level can help turn raised active consumer consciousness into market pressure for such goods.

Generally, behavioural tools, such as the communication of social norms, framing or the setting of default options are powerful tools in guiding people and narrowing potential mind-behaviour gaps. The literature indicates that behavioural analysis can be helpful for the implementation of effective incentives so that on the meso and micro level acquired information is translated into innovative behaviour. While so far, the literature analysing how behavioural tools can be employed to guide green behaviour has focused on improving environmental public policy, companies are encouraged to engage with such behavioural tools. The application of nudges can be supportive for the implementation of effective incentives so that increased consumer awareness for the environment is translated into green consumer behaviour.

When changes in the consciousness of the consumer are mirrored in green consumption patterns, environmental practices of firms become increasingly profitable. Green growth can then result in financial returns, serving all pillars of the Corporate Social Responsibility (CSR) triple bottom line by responding to environmental, social and economic demands (Elkington, 1994).

In this way, using behavioural economics insights as well as dialogue and cooperation between Fridays for Future and the decision-makers at companies will enable the effective functioning trade of **Information, Incentives and Innovation** that enables sustainable development.

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