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Green Hearts to Green Carts: Bridging the Say-Do Gap for Climate Conscious Consumption

UNIVERSITY OF OXFORD

Saïd Business School

About this publication

Investcorp has partnered with Saïd Business School, University of Oxford to conduct novel research to understand consumer sentiments towards climate change across major global markets to help businesses better embed sustainability into decision-making.

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Executive Summary

As the impacts of climate change hit closer to home, consumer attitudes are also changing with greater recognition of climate risk and greater understanding of sustainability and climate topics. However, this growing consumer awareness has not yet translated into widespread changes in consumer behavior, a phenomenon known as the 'say-do' gap.

Several theories have been proposed to explain the gap. Some highlight socio-demographic factors. Others point to a consumer's exposure to extreme weather events, their political affiliations, cultural values or broader societal narratives. Financial constraints, the perception that green products are of inferior quality, the effort required to make green choices, poor communication of green product attributes and the lack of a directly observable link between consumption decisions and climate effects are also noted as barriers. Finally, research also suggests growing distrust among consumers of inflated corporate claims regarding the greenhouse gas emissions of products or services, aggravated by reports of widespread "greenwashing."

Understanding the say-do gap is important because household consumption accounts for a significant portion of global GDP – and a consequent substantial share of carbon emissions. A small change in consumer choice, could make an enormous and immediate impact in mitigating emissions and moving economies toward the decarbonization targets laid out in the Paris Agreement and avoiding the risk of catastrophic climate change.

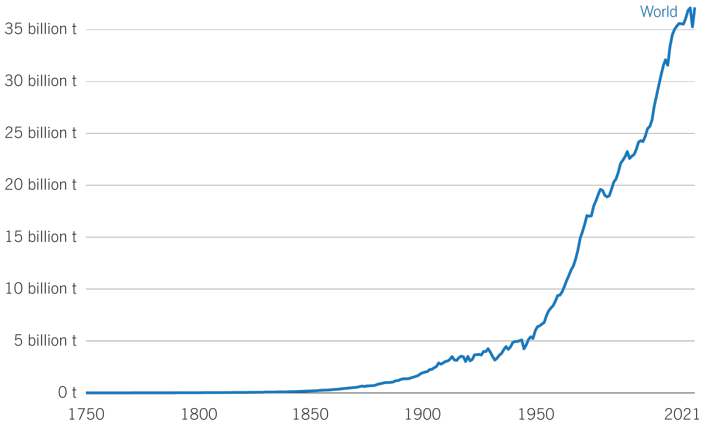
The Importance of Consumers

The global struggle against climate change is at a pivotal crossroads. The realization of climate change's gravity has surged to the forefront of global consciousness. The acceleration of greenhouse gas emissions, altered weather patterns, and the intensification of extreme weather events have underscored the urgency for concerted action. At current emissions reduction pathways the world is likely going to exceed 1.5°C warming compared to pre-industrial levels during the 21st century.

Annual CO2 emissions have yet to peak

Figure 1. **Annual CO_2 emissions**

Carbon dioxide (CO_2) emissions from fossil fuels and industry. Land use change is not included.



Source: Global Carbon Budget (2022).
Note: Fossil emissions measure the quantity of carbon dioxide (CO_2) emitted from the burning of fossil fuels, and directly from industrial processes such as cement and steel production. Fossil CO_2 includes emissions from coal, oil, gas, flaring, cement, steel, and other industrial processes. Fossil emissions do not include land use change, deforestation, soils, or vegetation.

Over the past decades government and public policy responses have primarily focussed on driving companies to reduce greenhouse gas emissions and on encouraging investments into green energy solutions. Policy initiatives are traditionally aimed at increasing transparency about the carbon footprint of companies, their products and supply chains and at incentivising capital markets to reallocate capital to more sustainable companies and green innovation.

Despite significant developments in public policy and increasing capital deployment in the fight against climate change, it is becoming clear that consumers have a vital role to play in the transition to a lower carbon economy. Clearly, patterns of consumption are crucial to reducing CO_2 emissions and policy makers and business are looking for ways to engage, educate, and empower individuals to make sustainable choices. Consumers have the potential to steer markets, shape corporate behaviours, and are emerging as a formidable force for change. Yet not much is known about what drives consumer choice for green product options and what prevents them from adopting climate-friendly behaviour.

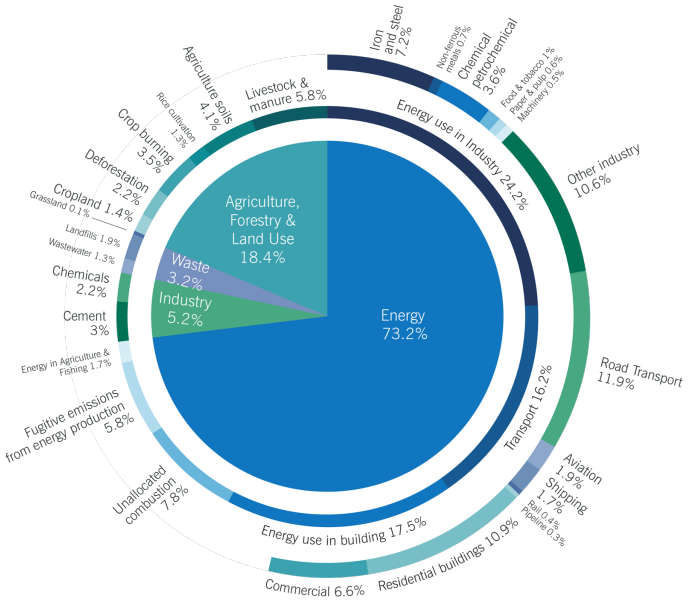
Household consumption is about 60 percent of GDP making it the largest component of GDP besides investment, government spending and net exports.[1] In the United States alone consumption accounts for over USD 14 trillion annually. Consumers are responsible for 70% of the environmental impacts of housing, transport and food.[2]

The vast majority of consumers internationally seem to agree that climate change is an important problem and that their country should take actions to fight climate change.[3] Yet, despite recognising the threat from climate change and declaring they care about the environment, most consumers are not changing their behaviour. While according to surveys around two-thirds of consumers are willing to choose green product alternatives, this does not seem to be reflected in actual purchasing behaviour.

Direct and indirect household emissions make up a significant percentage of global emissions

Figure 2. **Global greenhouse gas emissions by sector**

This is shown for the year 2016, when global greenhouse gas emissions were 49.4 billion tonnes CO_2-equivalents (CO_2-eq).



Source: Climate Watch, the World Resources Institute (2020).
Note: Carbon dioxide-equivalents (CO_2-eq): Carbon dioxide is the most important greenhouse gas, but not the only one. To capture all greenhouse gas emissions, researchers express them in 'carbon dioxide-equivalents' (CO_2-eq). This takes all greenhouse gases into account, not just CO_2. To express all greenhouse gases in carbon dioxide-equivalents (CO_2-eq), each one is weighted by its global warming potential (GWP) value. GWP measures the amount of warming a gas creates compared to CO_2. CO_2 is given a GWP value of one. If a gas had a GWP of 10 then one kilogram of that gas would generate ten times the warming effect as one kilogram of CO_2. Carbon dioxide-equivalents are calculated for each gas by multiplying the mass of emissions of a specific greenhouse gas by its GWP factor. This warming can be stated over different timescales. To calculate CO_2-eq over 100 years, we'd multiply each gas by its GWP over a 100-year timescale (GWP100). Total greenhouse gas emissions – measured in CO_2-eq – are then calculated by summing each gas' CO_2-eq value.

The power of individual choices, purchasing decisions, and collective actions has in the past transformed industries, influenced corporate strategies, and redefined entire economies. Research is only beginning to understand consumer attitudes towards, motivations for and barriers to adoption of climate-friendly products and services.

Consumer Attitudes to Climate Change

Research shows that consumers are highly varied in their attitudes to climate change—much of which depends on their personal risk exposure, cultural values, political context and societal and media narrative. There is also significant variation across countries with South American and Asian consumers being most concerned about climate change.[4]

Survey evidence suggests that public climate awareness has been increasing in developed countries over the past several decades while in developing countries the evidence is more mixed.[5] Despite the increasing general awareness about climate change, consumers seem to have a limited understanding of how their activities such as food consumption and domestic energy use contribute to climate change.[6] There is also a significant minority in developed countries that seem to reject the scientific evidence that the climate is changing and that this change is mostly caused through human activity. Recent academic evidence from the United States and from 2017 in Europe suggests that about 15% of people are sceptical that climate change is happening and about a third doubt that it is human caused.[7] These percentages have remained relatively stable over the past decade despite overwhelming evidence and scientific consensus about the human contribution to climate change.[8]

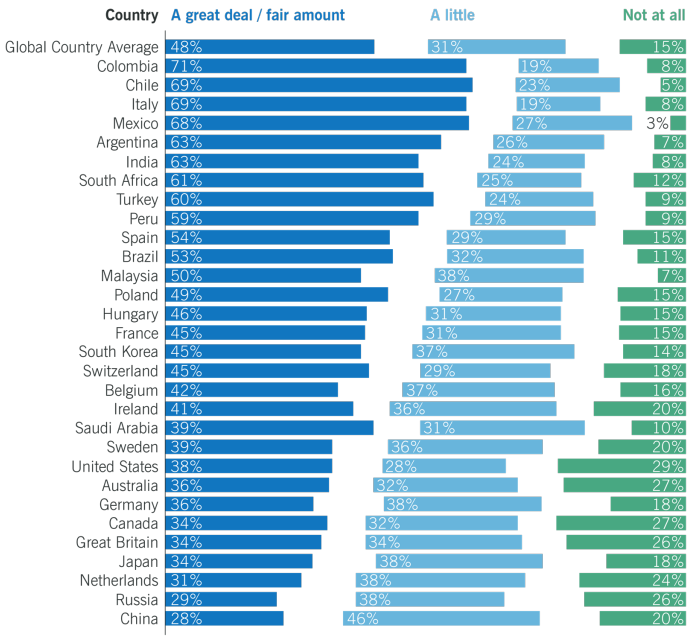
While consumers largely agree that climate change is a concern, there is considerable geographical variation in whether they believe it will affect them personally or pose any significant risk. Not surprisingly, those whose livelihoods are more directly affected by the impacts of a changing climate consider it to be a major risk.[9] Psychological distance—the fact that for many climate change is seen as not affecting them for years, where the effects are highly uncertain and for whom current impacts are still occurring in remote locations—is found to be one of the main factors shaping people's perception of climate change.[10]

Perceptions and attitudes towards climate change are also formed through social interactions and within cultural contexts which are shaped by media discourse, formal education, interpersonal relationships, interactions within a social group, and other factors. Research suggests that specific narratives can affect consumers' comprehension of the consequences of climate change. For example, an emotionally alarming narrative may "prompt a sense of disillusionment and powerlessness."[11] Beliefs about climate change also depend on demographic factors such as age and gender, but ideology and values seem to be stronger determinants.[12] Research on values also suggests that they play a role in how people interpret climate change information generally, selectively choosing information that confirms their prior beliefs—a phenomenon commonly known as confirmation bias.[13]

Climate change is a regular concern for half of people globally

Figure 3. **Public opinion on climate change**

Ipsos Global Advisor, Earth Day 2022 (April 2022). Response to the question: "Here is a list of some things that some people worry about these days. To what extent, if at all, have you worried about each one in the last 2-3 weeks?



Finally, research suggests that attitudes are shaped by experiences of extreme weather events and the weather more generally influences perceptions of climate change.[14] Yet the influence of extreme temperature is moderated by political affiliations, which have a strong influence on climate perceptions.[15]

Consumption Behaviour and the Attitude-Behaviour Gap

Early research focussed on socio-demographic characteristics such as age, gender, and socio-economic background as important determinants of green consumption, but largely generated inconclusive results. Not surprisingly, consumption behaviour is not driven by socio-demographic consumer characteristics alone, but often these characteristics are correlated with other determinants of consumption behaviour. For example, some research stresses the importance of context in aligning consumers' attitude and behaviour.[16] This research emphasizes the influence of context on the relationship between attitude and behaviour, and how effective communication about climate change can encourage changes in consumer behaviour.

On average, the correlation between environmental awareness and pro-environmental behaviour appears to be relatively low, hovering around 0.3.

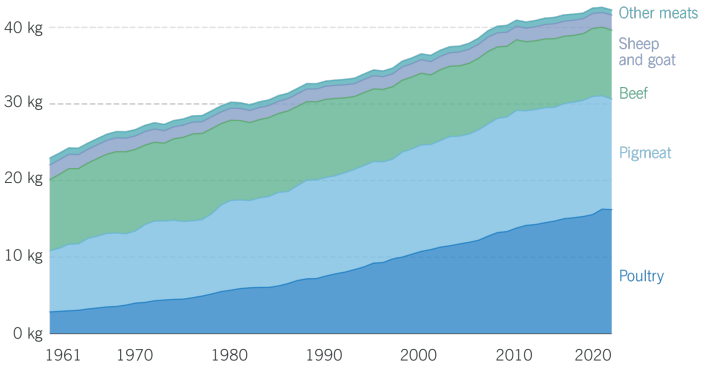
Prior research has also extensively explored the role of knowledge and awareness of climate change in driving environmentally conscious behaviour and their influence on individuals' green attitudes. The underlying assumption is that knowledge and awareness of climate change will increase consumers' concerns about their carbon footprint and thus in turn lead them to behave in ways that attempts to mitigate these concerns. However, the empirical evidence in this area has yielded mixed results, indicating a complex relationship. On average, the correlation between environmental awareness and pro-environmental behaviour appears to be relatively low, hovering around 0.3.[17] This finding suggests that while awareness is an important factor, it may not be the sole driver of eco-friendly actions.

One factor that could contribute to the variability in these findings is the presence of a so-called social desirability bias. This bias may distort particularly the results of surveys by causing individuals to respond in ways they believe are socially acceptable or expected rather than reflecting their true attitudes and preferences. As a result, prior research may not have accurately captured the genuine relationship between environmental awareness and green behaviours. Such bias in survey results might also explain why despite relatively high response rates to surveys that cite environmental attributes of products to be an important consideration in purchasing decisions, climate-friendly products still make up only a small portion of global product sales.

Meat consumption is on the rise globally despite the detrimental carbon footprint of meat production

Figure 4. **Per capita meat consumption by type**

Data is shown for World, 1961-2020. Per capita meat consumption is broken down by types of meat and is measured in kilograms per person per year.

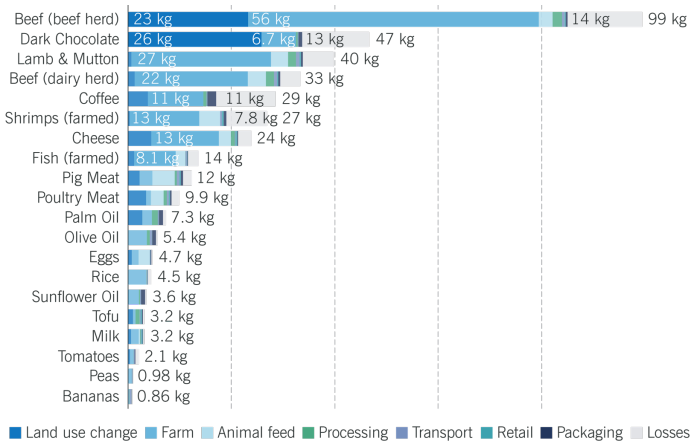


Source: Food and Agriculture Organization of the United Nations.
Note: Data does not include fish and seafood. Figures do not correct for waste at the consumption level so may not directly reflect the quantity of food finally consumed by a given individual.

Several studies identify significant inconsistencies between consumer attitudes and their behaviours whereby they profess to be concerned about climate change but at the same time do not alter their consumption behaviour.[18] That is, consumer attitudes do not seem to translate into actual consumption decisions. This phenomenon is commonly known as the "attitude-behaviour" or "say-do" gap. Beyond a potential desirability bias in survey results, research has attempted to provide economic and behavioural explanations for this attitude-behaviour gap, but definitive answers to this phenomenon remain elusive.

Figure 5. **Food: greenhouse gas emissions across the supply chain**

Greenhouse gas emissions are measured in CO_2-eq per kilogram of food.



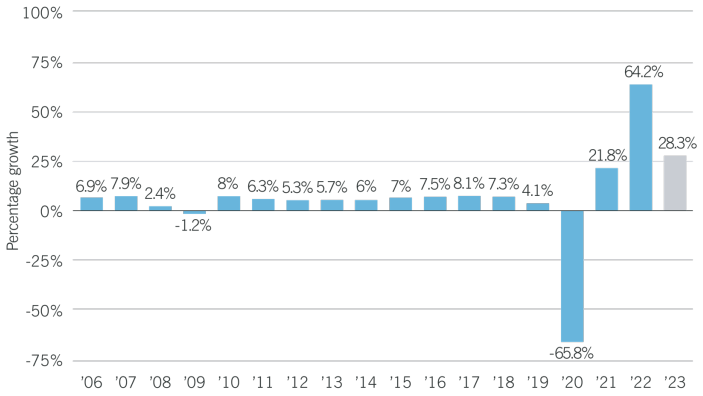
Source: Joseph Poore and Thomas Nemecek (2018).

Behavioural inertia or status-quo bias seems to be one potential contributor. Evidence suggests that when the climate-friendly option is the default choice, consumers remain with the default, even if the default is associated with a higher cost.[19] Consumers also seem to face greater uncertainty about the effectiveness of green products, and thus expect governments to address sustainability issues through regulation before changing their consumption habits. Climate regulation that is aimed at consumption, however, can also have unintended consequences. For example, research shows that low emission zones within a city where driving restrictions are introduced to reduce emissions unintentionally might also distort other consumer spending decisions as consumers affected by the regulation reduce their overall brick-and-mortar spending in the regulated area.[20]

Numerous studies investigate behavioural predictors of climate-friendly actions and find beliefs about social norms and moral values to be important determinants. Individuals' perceptions of the extent to which their fellow citizens exhibit climate-friendly behaviours improves their own willingness to adopt climate-friendly behaviours.[21] This seems particularly the case if wealthy individuals behave in a climate-friendly manner.[22] These studies emphasize the importance of higher-order beliefs (beliefs about others' beliefs) and social norms. Economic theory also posits that self-image concerns affect the demand for green goods.[23] In these models, individuals compare the self-image benefits with the additional cost of going green. The self-image benefits depend not only on the environmental benefit that the green choice generates but also on the social norm with regards to adopting the green option.

Annual air travel demand continues to grow

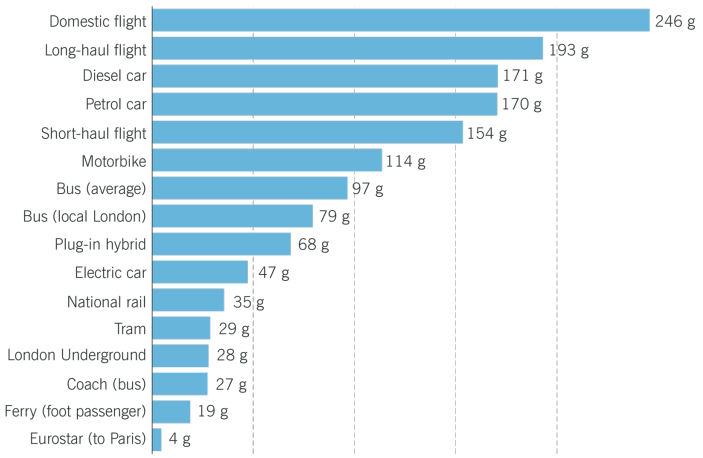
Figure 6. **Annual growth in air traffic passenger demand from 2006 to 2022, with forecasts until 2023**



Sources: IATA; ICAO; Airfinance Journal (Airline Analyst); Refinitiv; S&P Global Platts.

Figure 7. **Carbon footprint of travel per kilometer, 2022**

The carbon footprint of travel is measured in grams of CO_2-eq per passenger kilometer. This includes the impact of increased warming from aviation emissions at altitude.



Source: UK Government, Department for Energy Security and Net Zero.
Note: Data is based on official conversion factors used in UK reporting. These factors will vary across countries depending on energy mix, transport technologies, and occupancy of public transport.

In sum, our understanding of the gap between green values and actual behaviour remains limited and further research into consumer perceptions and consumption of green products and services is needed to provide additional insights. Past research, summarised in the next section, has begun to investigate what prevents consumers from making more climate-friendly consumption choices.

Barriers to Green Adoption

Studying the attitude-behaviour gap, several studies find that price, perceived performance and trust are among some of the reasons consumers are reluctant to buy climate-friendly products.[24] Among these, financial constraints are often seen as the main hurdle, with price being the biggest factor in the purchasing decision. Survey research also finds inferior quality perceptions and poor product experience of green products as the second most important reason why consumers are reluctant to choose the climate-friendly product option.[25]

Perceived sacrifices in terms of effort and time are also stated as barriers to adopting green products and climate-friendly behaviour.[26] Beyond the financial costs, it is often considered "too hard to be green." This notion not only includes the perception that it is more costly to choose climate-friendly options but also that often it requires significant effort to identify which options are climate-friendly in the first place. Marketing studies have found that poor communication of green product attributes can contribute to the barriers to adoption.[27]

Moreover, the average consumer seems to perceive behaving in a climate-friendly fashion as something that only a price-insensitive, informed "green" consumer with considerable free time can do. Such sense of unattainability can lead to a feeling of powerlessness and thus contribute to inertia.[28] The sense of powerlessness also relates to individuals believing that the behaviour of others is out of their control and the sense that their own individual behaviour would not make a difference. Related to this, if "going green" is not perceived as mainstream practice, i.e., has not become a social norm, the average consumer might be reluctant to engage in green consumption practices as they will experience little dissonance from not behaving in a climate-friendly fashion. Furthermore, "reactance theory" suggests that consumers, even though concerned about the climate, might not react positively to their individual liberties being limited in order to behave in a climate-friendly manner. This is particularly important when climate-friendly options are communicated in negative terms limiting the choice of products or activities available. However, this has not been explored fully in the context of climate change.[29]

Studies also reveal that consumers do not perceive climate change as urgent when making consumption decisions as the negative effects from using climate-damaging products are not directly observable to many and often they have not experienced the negative consequences first-hand.[30] That is, consumers might have difficulty considering future negative consequences from current purchasing decisions making it easier not to adopt climate-friendly behaviours.

Finally, consumers have potentially become more cynical with the growth of greenwashing and lack of trust in corporate green claims. Consequently, consumers have growing reservations towards green products as it becomes more difficult for them to verify green product attributes.[31]

Consumer Trust and Greenwashing

Consumers that trust others to engage in efforts to reduce carbon emissions might themselves be more willing to make the same effort.[32] This applies to individuals as well as companies whose product or services are in demand. In other words, pro-environmental behaviour is also affected by the extent to which consumers perceive companies as being green.[33] Trust therefore plays a particularly important role in green consumption decisions. Greenwashing, i.e., intentional exaggerated, misleading or deceiving claims about environmental practices, negatively affects consumer trust reducing the propensity to purchase green alternatives.[34] Consumers often rely on corporate advertising and information to make decisions; thus, any exaggerated claims may lead to consumer distrust, resulting in a significant negative impact on the adoption of green behaviour. Trust in the quality and accuracy of green product claims is therefore an important, yet understudied, factor in individuals' consumption decisions.

Willingness-to-Pay

Research has also explored whether consumers are willing to pay for green product attributes and climate friendly alternatives. Several studies have examined the "willingness-to-pay", mostly focussing on green energy.[35] One strand of the research, in economics, on the willingness-to-pay for climate-friendly products largely focuses on carbon taxes. The evidence from developed countries suggests a general aversion to carbon taxes mainly based on concerns about their effectiveness and distributional effects.[36] Opposition to carbon pricing seems to be based on misconceptions about their impact on people, particularly the less well-off.[37] Related research also shows being informed about how to reduce emissions increases consumers' willingness-to-pay for carbon offsetting.[38]

Recent studies using data from barcode-level sales suggest that consumers value sustainability characteristics of products. One study finds higher sales growth relative to products without sustainability features and that high environmental ratings of retail companies are positively related to retail store sales.[39] This research also finds that sales of environmentally friendly products are sensitive to environmental disasters in areas close to the disaster and that consumers react negatively to companies' negative news on environmental issues. These findings suggest that consumers seem to increasingly prefer environmentally friendly products particularly when they personally experience environmental disasters. Recent evidence also suggests that environmental labelling drives consumers, at least subconsciously, to opt for lower emission options.[40]

Despite some indication of consumers' willingness-to-pay for green product attributes, little is known about whether this varies across product categories and what factors influence the willingness-to-pay.

Figure 8. **Products that make ESG-related claims have achieved disproportionate growth**

Retail sales growth, US, CAGR 2018-22, %

Source: McKinsey and NielsenIQ.
Note: "ESG" refers to environmental, social and governance factors.

Conclusions & Future Research

Research to date has made significant advances to our understanding of consumer attitudes and behaviour with respect to climate change. This white paper identifies several areas where further research is needed to understand the drivers, barriers, and nuances of consumer choices in the context of climate change. This is essential for developing effective strategies and policies to combat global warming and promote sustainable consumption.

1. **Consumer Engagement:** The consumer's role in addressing climate change is increasingly recognized as pivotal. While efforts have primarily focused on businesses and policy, understanding consumer behaviour and attitudes is essential to achieving significant emissions reductions.
2. **Complexity of Consumer Attitudes:** Consumer attitudes toward climate change are multifaceted and influenced by personal, cultural, and social factors among others. This complexity highlights the need for rigorous research to understand different consumer perspectives and motivations and is essential for creating meaningful change.
3. **Attitude-Behaviour Gap:** The gap between consumers' attitudes and their actual behaviour is a significant challenge. Understanding the reasons behind this gap is crucial for developing strategies to bridge it.
4. **Barriers to Adoption:** Barriers such as price, perceived performance, trust, and effort pose substantial challenges to green adoption. Overcoming these barriers will require further research into the role of communication, product experiences, and verification.
5. **Trust Matters:** Trust in companies' environmental claims significantly influences consumer decisions. Consumer trust can be undermined by greenwashing, making it imperative for companies to be transparent and authentic in their sustainability efforts.
6. **Willingness to Pay:** While some consumers express a willingness to pay more for green product attributes, more research is needed to identify factors that influence consumption decisions and understand the extent to which this willingness varies across product categories and geographies.

To address these timely questions and enhance our understanding of consumer attitudes and behaviours towards climate-friendly products and services, Investcorp is supporting research at the University of Oxford Saïd Business School in collaboration with researchers at the Digital Data Design Institute at Harvard to run a large-scale international consumer survey, with the aim of generating new insights for business, policy makers, academia and the broad investor community.

Endnotes

[1] Large differences across countries that can range from about 45 percent of GDP to over 80 percent of GDP.

[2] Tukker, A., & Jansen, B. (2006). Environmental impacts of products: A detailed review of studies. Journal of Industrial Ecology, 10(3), 159-182.

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[8] IPCC (2023), Climate Change 2023: Synthesis Report. 20 March 2023. https://www.ipcc.ch/report/ar6/syr/ (Accessed 30/10/2023)

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[17] According to an early meta-analysis of 128 studies in Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behaviour: A meta-analysis. The Journal of Environmental Education, 18(2), 1–8.

[18] See e.g., Carrington, M., Neville, B., & Whitwell, G. (2010). Why ethical consumers don't walk their talk: Towards a framework for understanding the gap between the ethical purchase intentions and actual buying behaviour of ethically minded consumers. Journal of Business Ethics, 97(1), 139–158.

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Lead Authors

Amir Amel-Zadeh
Associate Professor of Accounting

Amir Amel-Zadeh is Associate Professor at Saïd Business School, University of Oxford and director of the Oxford Rethinking Performance Initiative. Amir's research broadly investigates the role of financial and non-financial reporting in capital markets and how companies' sustainability characteristics affect investors' asset allocation decisions. Prior to joining Saïd Business School, Amir held a position as Assistant Professor at Judge Business School, University of Cambridge, and prior to that worked at Lehman Brothers in London. He received his PhD in Finance from the University of Cambridge. Amir has taught or consulted for the financial services industry globally and was academic advisor to PanAgora Asset Management. He has held visiting positions at Harvard Business School, at New York University Stern School of Business, at Columbia Business School, and visiting professor at the University of Bologna. In addition to his faculty post at Oxford, Amir is board member of the UK Endorsement Board, responsible for adopting IFRS for use by UK companies, and is the incoming co-editor of the European Accounting Review.

Qiaoye Yu
Oxford Saïd-HEC Montréal Research Fellow in Sustainability

Qiaoye is the Oxford-HEC Montréal Research Fellow in Sustainability at Saïd Business School, University of Oxford. Qiaoye's research can be broadly summarized as understanding how climate change affects the decision-making of stakeholders. She is working with Prof. Amir Amel-Zadeh on the 'Measuring Beyond' initiative, which aims to produce impactful research relating to ESG metrics and sustainability reporting. Prior to joining Oxford, Qiaoye completed her PhD at Warwick Business School, University of Warwick.

Investcorp

Rishi Kapoor
Co-CEO of Investcorp

Rishi Kapoor is Investcorp's Co-Chief Executive Officer. He oversees the Firm's Private Equity businesses in North America and India, as well as the Real Estate, Credit Management, Absolute Returns, Strategic Capital and Insurance Solutions businesses globally.

Rishi holds a Bachelor's degree in Electrical and Computer Engineering from the Indian Institute of Technology (IIT), and an MBA from Duke University's Fuqua School of Business.

James Socas
Head of Climate Solutions

James Socas is Head of Investcorp's Climate Solutions business. Climate Solutions brings Investcorp's combination of capital, business-building services, international network and investment experience to the leading companies addressing climate change. Prior to Investcorp, James was a Managing Director at Blackstone where he focused on growth and technology investments.

James is an honors graduate of the University of Virginia and the Harvard Business School.

Habib Abdur-Rahman
Global Head of Sustainability

Habib Abdur-Rahman is Global Head of Sustainability at Investcorp where he is responsible for the development and execution of Investcorp's sustainability strategy. In his role, he is responsible for Investcorp's climate transition planning and oversees the integration of sustainability considerations across the firm's investment platforms.

Habib read Mathematics at Imperial College London and holds a master's degree in Oriental Studies from the University of Oxford.

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