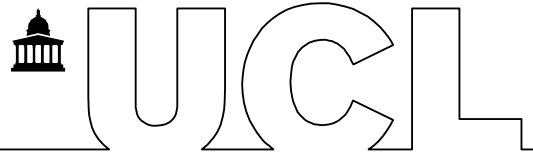UCL

Final Dissertation

Socio-demographic influences on intentions to shift to sustainable energy and transportation: A cross-cultural study of Morocco, the UAE, and Israel

Name: Tomer Attias
SN: 23110999
Supervisor: Prof. Robert Costanza

WORD COUNT: 14753

INSTITUTE FOR GLOBAL PROSPERITY

IGP MSc COURSEWORK

DECLARATION OF OWNERSHIP AND COPYRIGHT FORM

1. DECLARATION OF OWNERSHIP

I confirm that I have read and understood the guidelines on plagiarism produced by IGP and UCL, that I understand the meaning of plagiarism as defined in those guidelines, and that I may be penalised for submitting work that has been plagiarised. This piece of coursework must be submitted electronically through Turnitin on Moodle by the stipulated deadline. I understand that the coursework cannot be assessed unless it is submitted online and that penalties will be applied for late submissions as per UCL and IGP guidelines unless there is an approved case for Extenuating Circumstances or Reasonable Adjustments.

I declare that all material is entirely my own work except where explicitly, clearly, and individually indicated and that all sources used in its preparation and all quotations are clearly cited using a recognised system for referencing and citation. Should this statement prove to be untrue, I recognise the right of the Board of Examiners to recommend disciplinary action in line with UCL regulations.

2. COPYRIGHT

The copyright of the coursework remains with me as its author. However, I understand that anonymised copies may be made available to future students for reference. Please, tick the box if you DO NOT want this report to be made available for teaching purposes.

Abstract

This research focused on the relationship between socio-demographic factors and sustainable consumption intentions (SCI) in Morocco, the UAE, and Israel. It examined how income, age, and gender influence individuals intentions to shift to sustainable energy and transportation (ISET). Through a survey using a five-point Likert scale, and multiple regression analysis, it identified patterns and correlations relevant to future sustainability studies and policy development.

The findings revealed that socio-demographic variables, were influential in specific contexts, but did not consistently predict ISET across all three countries. In Morocco, older age groups were correlated with higher ISET. In the UAE, income significantly influenced both environmental consciousness (EC) and ISET. In Israel, no correlations with those variables has been found. EC was also found to be a strong predictor of ISET among individuals in Israel and the UAE.

The study emphasizes the importance of EC as a key driver of ISET, in wealthier nations like Israel and the UAE, and suggests that policies and economic contexts may play a role in shaping the outcomes. The research concludes that some traditional socio-cultural theories, which have been useful in Western studies, need adaptation to suit the unique dynamics of the MENA region. It also recommends exploring other determinants, such as government policies, cultural dynamics and economic incentives, which may play a role in the outcomes of EC and ISET.

Keywords*: green and sustainable consumerism, socio-demographic,* environmental consciousness*, sustainable energy and transportation, MENA region*

Table of Contents

A list of abbreviations

CBO	Community Based Organization
CVs	Control variables
DV	Dependent variable
EC	Environmental consciousness
EF	Environmentally-friendly
EVs	Electric Vehicles
GPI	Green purchase intentions
ISET	intentions to shift to sustainable energy and transportation
IVs	Independent variables
MENA	Middle East and North Africa
MV	Mediator variable
NGO	Non-governmental Organization
NPO	Non-profit Organization
PEA	Pro-environmental attitudes
PV	Photovoltaic
RES	Renewable Energy Sources
SCB	Sustainable consumer behaviour
SCI	Sustainable consumptions intentions
SDGs	Sustainable Development Goals
SET	Sustainable energy and transportation
UAE	United Arab Emirates
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
WBG	World Bank Group
WHO	World Health Organization

A list of illustration

Acknowledgements

I would like to deepest gratitude to my supervisor, Prof. Robert Costanza, for his invaluable guidance and constant patience throughout this journey. His insightful feedback and expertise have been crucial in shaping this dissertation.

I am also grateful to the Dissertation Module Leader, Dr. Mara Torres Pinedo, for her continuous guidance, encouragement, that has significantly contributed to the development of this work.

I would also like to extend my thanks to Dr. Onya Idoko, the leader of Prosperity, Innovation, and Entrepreneurship programme, for her insightful teaching throughout the year. Her encouragement and guidance have enriched the quality of this dissertation.

Introduction

Technology development has both created and helped solve humanity's challenges, significantly impacted society and the environment, both positively and negatively. from the Agricultural Revolution to the Fourth Industrial Revolution, It has driven production and economic growth but also caused job displacement, social isolation, and environmental degradation. Technologies now play a critical role in addressing climate change through advancements in renewable energy, clean fuels, and sustainable transportation. These are essential in reducing greenhouse gas emissions associated with fossil fuel combustion. The impact of technology on sustainable development depends on its inherent qualities and its application within a social context (Mulder et al., 2011). To achieve the United Nations (UN) Sustainable Development Goals (SDGs), developing innovative technologies is essential. Green or sustainable technologies emerged as dynamic systems that promote harmony between humans and nature, improving efficiency, and protecting ecosystems, thereby supporting both ecological civilization and sustainable coexistence (Guo et al., 2020).

The Middle East and North Africa (MENA) region is emerging as a critical hotspot for escalating extreme aridity, droughts and heat due to climate change (Waha et al., 2017). A significant part of the MENA region is also covered by deserts which present treats like food insecurity, water scarcity and extreme temperatures, affecting people residing in those areas significantly. In the second half of this century, half of the MENA region's population, or about 600 million people, could face recurrent super-and ultra-extreme heatwaves, and by the end of the twenty-first century, the MENA region is expected to experience a warmer, drier climate with a rise in extreme events (Francis and Fonseca, 2024). The region's unique environmental challenges make it a critical area for sustainability studies.

Driven by heightened awareness of climate change and the need for resource conservation, the world has witnessed significant progress in transitioning to more sustainable energy and fuels. This shift is underscored by international efforts, such as the Paris Agreement, which aim to limit global warming by promoting sustainable policies worldwide. Furthermore, individual consumers are increasingly shifting their consumption behaviours, favouring products that minimize environmental harm, such as those made from renewable materials, organic foods, and items produced using eco-friendly processes and certified by recognized environmental standards. Understanding human behaviour and consumer choices is crucial in addressing climate change, as these behaviours directly impact resource use, waste generation, and greenhouse gas emissions.

This study aims to critically examine the influence of socio-demographics factors including income, age, and gender on individuals' intentions to adopt sustainable solutions in the fields of energy and transportation in Morocco, UAE, and Israel. By doing so, it seeks to fill a significant gap in the literature concerning the socio-demographic influence intentions to shift to sustainable energy and transportation (ISET) within a cross-cultural context outside the

West. For operationalization in this research, I will use the term sustainable consumption intentions (SCI) to refer to a broader concept that includes ISET building on (Elhoushy and Lanzini, 2020; Puspitasari et al., 2018).

Despite a growing body of literature on sustainable consumerism, there is a notable lack of studies on sustainable energy and transportation adoption in the MENA region. Better understanding the factors influencing individuals ISET in this region, could reveal key drivers of environmental behaviour and identify areas for policy initiatives. Furthermore, it is essential for designing effective private-market initiatives that can accelerate the adoption of green technologies in the MENA region. An interdisciplinary approach, drawing on environmental science, sociology, economics, and political science, is employed for comprehensively examine the multifaceted drivers of ISET in this research.

This study takes an exploratory and novel approach, testing frameworks that have not been widely applied outside the Western literature. The theories include the affluence hypothesis, eco-feminism and generational theory. Given the significant cultural, economic, and social differences between Western and non-Western contexts, this research seeks to determine the relevance and applicability in explaining SCI in different contexts. The exploratory nature of this research allows for the possibility of expanding these theoretical frameworks and producing new insights to generating hypotheses for future research in non-Western settings. This research is among the few to examine the intersection of socio-demographics, EC, SCI, across different cultural settings. The findings from this research can provide valuable insights for other researchers interested in exploring sustainable energy and transportation adoption, as well as other pro-environmental behaviours, in greater depth. The comparative analysis of these factors across Morocco, the UAE, and Israel will highlight both the similarities and differences in sustainable behaviour.

This research is motivated by the urgent need to promote innovation to advancing prosperity, health, and environmental sustainability in the MENA region. The region's critical air pollution levels, which surpass World Health Organization (WHO) safety guidelines by over tenfold, pose a significant threat to public health, livelihoods, and economic stability (WBG, 2022). Additionally, the research is motivated by the urgent to expedite climate mitigation efforts, recognizing the pivotal role of green and sustainable consumerism in achieving this aim. Promoting sustainable energy and transportation in a region which known for its oil and gas extraction, could help lower emissions, preserving natural resources, and enhance resilience against climate-related risks. Ultimatley, fostering a more sustainable and equitable future for the region.

Despite growing interest in green consumerism, existing literature largely inconsistence of socio-demographic factors influence on SCI in non-Western contexts, a gap this research aims to explore. The research objectives are threefold. Firstly, it aims to explore new territory in the field of green consumerism within the context of sustainable energy and transportation.

Secondly, it seeks to gather initial data on how attitudes towards sustainable energy and transportation, vary across different cultural contexts within the MENA region. Thirdly, to apply and test theories that are less commonly studied outside Western literature, thereby providing a more nuanced understanding of SCI in diverse socio-cultural environment.

There are several justifications for conducting this study. Firstly, the subject has not been extensively explored, particularly in Morocco and Israel. Secondly, to propose a new framework for understanding socio-demographics influence on SCI within various socio-cultural context beyond Western literature. Thirdly, the research aims to test and apply multidimensional measurement of EC, which have not been widely tested before. And fourth, the study aim to enhance the potential for generating insights that can inform future scholars and policy makers.

Research questions

To address the research gaps, this study poses several research questions designed to explore the relationship between socio-demographics, environmental consciousness, and SCI within the context of energy and transportation. These questions aim to uncover not only the direct effects of factors like income, age, and gender but also how these factors interact with broader socio-economic and demographics indicators.

Main research question:
- How do socio-demographic factors, including income, age, and gender influence individuals' intentions to shift to sustainable energy and transportation in Morocco, UAE, and Israel?

Sub-questions:
- How does environmental consciousness function as a mediator variable between socio-demographics and intentions to shift to sustainable energy and transportation in Morocco, UAE, and Israel?
- What role do socio-demographic factors have in shaping environmental consciousness of individuals in Morocco, UAE, and Israel?
- How does a higher level of environmental consciousness influence sustainable consumptions intentions in countries with higher GDP per capita compare to those with lower GDP per capita?

The research structure will be as follows: (1) A literature review examining existing research on sustainable energy and transportation, environmental consciousness, and green and sustainable consumerism. (2) A presentation and analysis of the research theoretical framework. (3) Hypothesis development and methodology evaluation. (4) Presentation of the study findings. (5) Discussion of findings and their implications. (6) Highlight of the research's limitations and constraints. (7) Conclusions of the research with suggestions for future research.

Literature review

Innovations in energy and transportation

The development of innovative products and solutions that emphasize environmental sustainability is crucial in both adapting to and mitigating the effects of climate change. The literature on energy and transportation frequently emphasizes the role of innovation as a key driver in advancing these sectors, highlighting the need for innovative technologies and practices to achieve to attain environmental sustainability and confront the challenges posed by climate change (Etukudoh et al., 2024; Kabeyi and Olanrewaju, 2021; Klein and Koffey, 2016).

Sustainable energy refers to the production and supply of electricity in a manner that does not compromise the capacity of future generations to fulfil their own energy or electricity requirements. It includes innovative technological solutions, such as renewable and clean energy sources like solar, biomass, hydroelectric power and geothermal, or energy efficiency measures. Sustainable energy, similar to sustainable development, demands substantial modifications to current approaches and considers the specific effects of human actions on industrial, production, social, and value systems (Kabeyi and Olanrewaju, 2021; Klein and Koffey, 2016).

Sustainable transportation can be defined "as an expression of sustainable development in the transportation sector" (Gudmundsson et al., 2016: 82). It encompasses transportation methods that prioritize energy efficiency, minimize or eliminate emissions, and remain economically accessible. The objective of sustainable transportation is to mitigate environmental harm, while simultaneously, fulfilling the mobility requirements of the current population and securing the ability of future generations to meet their own mobility needs. Innovations in sustainable transportation are revolutionizing the sector, with significant advancements include the development of EVs and improved battery technology, the adoption of alternative fuels such as hydrogen and biofuels, and the emergence of shared mobility solutions (e.g. ride-sharing and micromobility). Innovations in public transportation, including high-speed rail and autonomous vehicles, are broadening the scope of mass transit options (Etukudoh et al., 2024).

While technological innovations in energy and transportation provide critical pathways for sustainable development, understanding the human factors that drive the adoption of these technologies is the primary purpose of the study. This leads to the concept of EC, introduced in the next chapter.

Environmental consciousness

Growing awareness of environmental issues have generated significant interest among scholars in understanding the factors that influence individuals engage with eco-friendly attitudes. The academic discourse on EC and eco-friendly behaviour has been evolving since the 1970s. Early scholars in the field examined various characteristics of environmentally conscious consumers, such as ecological concern, knowledge and income level, and found these traits to significantly impact ethical consumption (Anderson, 1972; Kinnear et al., 1974; Lusky, 1975).

During the 90s, constructs have been developed to further study the green purchasing intentions attributes and give further definition to EC, which include environmental attitudes and knowledge, recycling behaviour and political action (Ellen et al., 1991; Schlegelmilch and Bohlen, 1996). Recent studies on EC have primarily focused on aspects such as awareness of environmental challenges, interest in these issues, and attitudes and opinions regarding them (Kim et al., 2023). Further scholars developed various measurements of EC, and has been studied at various context beyond green purchase intentions, in fields such as management and education (Ahmed, 1998; Jasanoff, 2001; Krause, 1993; Nazir, 2016). EC is understood as a distinct psychological factor that influences an individual's tendency to engage in eco-friendly behaviors. It encompasses the psychological determinants that shape a consumer's likelihood to adopt environmentally friendly practices. This concept involves not only the willingness to recognize environmental issues but also the commitment to support and engage in efforts aimed at resolving these problems (Kim et al., 2023).

Some scholars have suggested that EC is a multidimensional construct encompassing cognitive, attitudinal, and behavioural components. These components are further categorized into specific aspects, such as environmental knowledge, attitudes, various types and degrees of recycling behaviour, and participation in activities aimed at preventing environmental degradation. However, it is still ignoring the role of social identity and cultural context in shaping these attitudes (Kim et al., 2023). A recent development proposed a new multidimensional approach to EC, combining environmental concern, knowledge, and values to explain consumer purchase behaviour toward green products (Laheri et al. 2023).

Gender and its relationship with EC as a multidimensional construct remain relatively underexplored outside Western-literature. Some studies, such as (Zuraidah et al., 2012), suggest that women consumers tend to exhibit more positive attitudes toward environmentally conscious behaviour compared to males, others, like (Alsmadi, 2007; Haj-Salem, 2024), found in the Middle East there is no significant differences in EC based on gender. One-dimensional concepts such as 'environmental concern', have been studied more. However, studies found inconsistent result and unclear effect of specific gender on levels of environmental concern in the Middle East (Alibeli and White, 2011; Dagher et al., 2015).

In examining the impact of age on EC, the research consistently highlights Generation Z as the most sustainable generation, primarily due to their spending patterns, pro-environmental behaviour and environmental awareness, which fosters a strong consciousness of ethical and environmental issues (Djafarova and Foots, 2021; Palanichamy et al., 2024; Zaman et al., 2023). Despite its financial constraints limiting their ability to fully embrace ethical consumption, it does not diminish its strong desire to support sustainable initiatives (Djafarova and Foots, 2021).

Extending beyond generational influences, a broader examination of EC reveals the significance of various demographic and cultural determinants at both the individual and national levels. A cross-cultural study of 30 countries found that key predictors of EC at the individual level include income, values, attitudes and education, while at the country level, post-materialist values and national wealth are primary predictors. The research also shows a positive association between EC and eco-friendly behaviour with higher income, education, and post-materialist values. Additionally, in contrast to (Djafarova et al., 2021; Zaman et al., 2023), these study reveal that older adults, as well as men and political conservatives, generally exhibit weaker environmental attitudes (Milfont et al., 2016).

While most the studies presented have focused on awareness and attitudes towards environmental challenges as key components of EC, there is inconsistency in how these constructs are measured across studies. This inconsistency raises questions about the validity of the EC construct, where self-reported data may not align with actual behaviour due to social desirability bias (Zhu et al., 2024). The literature, therefore, reveals a gap: a need for standardized validated measure of EC which can be applicable in different contexts.

Green and sustainable consumerism

The concept of green consumerism has gained significant scholarly attention as a critical dimension of environmental and management studies. As individuals become more environmentally conscious, this awareness evolves into eco-friendly consumerism, where their purchasing intentions and choices reflect a commitment to protecting the environment, and active engagement in sustainable behaviours. The research on environmentally-related consumerism has often equated with the term green or sustainable consumerism. This definition refers to a set of consumption behaviours aimed at promoting positive environmental outcomes (Sachdeva et al., 2015). Typical behaviours that fit this broad definition include buying organic products, switching off electrical appliances when they are not in use, reducing shower duration, and purchasing appliances that have energy-efficient certifications (Krass et al., 2013).

The research on this topic focuses on key constructs such as green purchase intentions (GPI) and sustainable consumer behaviour (SCB), which encompass not only environmental concerns but also broader social values. GPI refer to the likelihood and willingness of consumers, who are sensitive to environmental and ethical issues, to prefer eco-friendly

products over conventional ones (Puspitasari et al., 2018). In this context, intentions, signify a preparedness to act in a certain way, which ultimately translates into observable behaviours. These behaviours can range from simple strategic decisions in various situations, such as games, to actions of significant personal or social importance (Aktas et al., 2018). On the other hand, SCB is a complex and somewhat ambiguous concept defined as "as a behaviour that improves social and environmental performances as well as consumer well-being" (Elhoushy and Lanzini, 2020: 257).

Several studies have examined the factors influencing GPI in the Middle East, revealing a range of determinants. Attitudes, environmental consciousness, social norms, and moral obligations have been identified as significant predictors of green product consumption (Haj-Salem, 2022). However, the role of demographic factors in green purchasing behaviour remains insignificant across different contexts, as evidenced by research in Jordan, the UAE, and Saudi Arabia (Knezović, 2024). Additionally, environmental concern and ecological knowledge also have been shown to be significant predictors of green purchasing intentions (Elsantil, 2019; Mostafa, 2006), while other research emphasizes the influence of subjective norms, environmental involvement and green advertising on GPI (Arif et al., 2019).

Advancements in green technology have been shown to potentially boost demand among ethical consumers who are willing to pay a premium for environmentally friendly alternatives. For example, the popular hybrid-electric vehicle, Toyota Prius, is priced higher than its non-hybrid counterparts but the ethical consumer segments have been found to be willing to purchase it (Krass et al., 2013). Pro-environmental attitudes (PEA) have been frequently documented in empirical studies as influential factors supporting consumers' decisions to purchase green products across various cultures and demographic samples worldwide. These attitudes are linked to a diverse array of product categories, such as food, cosmetics, hybrid and electric vehicles, and technology (Elhoushy and Lanzini, 2020). Most studies on green purchase intentions, have predominantly focused on attitudes and social norms, while socio-demographic factors have received less attention.

The variability in findings extends beyond to other areas of sustainability research, such as the willingness to shift to energy-efficient products and the intentions to adopt renewable energy in the MENA region, where research is still limited. Former studies have explored various factors influencing energy usage, generally emphasize the importance of attributes like attitudes, environmental awareness, and perceived benefits. However, the influence of socio-demographics was not the primary focus in these studies, and their impact remain unclear and inconsistent (Akroush et al., 2019; Rezaei and Ghofranfarid, 2018).

Literature on attitudes toward sustainable travel and transportation in the region also remains limited. Some recent studies have begun to address this gap by exploring attitudes toward public transportation and EVs in Saudi Arabia and Kuwait (Alturif and Saleh, 2023; Ottesen et al., 2022). These studies have emphasized that increasing awareness of the

advantages of minimizing car usage and encouraging more sustainable transportation options significantly impacts social change and behavioural patterns. Furthermore, The findings of the first research indicate that, in general, there is a stronger preference for public transportation modes among young females, individuals from lower income brackets, and university graduates. Research on drivers' attitudes toward buying EVs in Kuwait revealed that government policies focused on lowering purchase costs, along with the availability of sufficient infrastructure, are key factors influencing consumer decisions.

Given the limited research evidence on green and sustainable consumption in the MENA region, there is a need for further exploration of their impact within the broader framework of SCB. SCB has been widely explored in Western contexts, and have started to get significant attention in the MENA region. However, it remain mainly explored in context of recycling, and organic food purchasing. A systematic-review study on SCB in the MENA, challenged the assumption that developing countries replicate developed countries' predictors of SCB. Based on a review of 71 articles published since 2000 in various countries in the MENA region, including UAE, Egypt, and Iran and etc. The study found that the majority of MENA-based research adheres to traditional rationalistic frameworks, and emphasizes environmental values as a key driver of SCB, with habits and socio-demographics playing minor roles. This review also identified other factors such as: Attitudes, environmental knowledge, and subjective norms that significantly influence SCB (Elhoushy and Lanzini, 2020).

The relationship between age and SCB is inconsistent across studies. Four studies (Babaei et al., 2015; Mohamed et al., 2012; Muhammad et al., 2015; Pakpour et al., 2014) suggested that sustainable consumption practices are more commonly adopted by middle-aged and older individuals. In contrast, other studies has found that younger individuals tend to exhibit more sustainable consumer behaviours (Mostafa, 2006; Mourad et al., 2012; Tamer, 2011) Collectively, these findings suggest that SCB may vary significantly based on age, with both younger and older demographics demonstrating a capacity for sustainability, depending on the regional context and specific circumstances. Twelve studies find no significant relationship between age and SCB, highlighting the inconsistency in the findings across different contexts (Elhoushy and Lanzini, 2020). This discrepancy suggests that the relationship between generations and sustainable consumer worth further investigation.

The former findings suggest there is a notable lack of strong theoretical frameworks to comprehensively understand why sustainable purchase intentions and behaviours are influenced or not influenced by age in the MENA. Generational theory, have been studied to explain younger generations behaviour towards sustainable consumption. It has been applied in various studies around the world examining responsible and sustainable consumerism (Bulut, 2017; Casalegno et al., 2022; Diprose et al., 2019; Flores-Zamora et al., 2019; Hume, 2010; Ivanova et al., 2019). However, its applicability and relevance in the MENA countries is still unclear.

Gender has been found to be a more significant predictor of SCB in 12 studies (including those from the UAE), while an equal number of studies report no significant relationship between gender and SCB. A majority of studies suggest that women are generally more inclined toward sustainable behaviours than men, however, there is no consensus. Socialization theory, suggests that women possess a stronger ethic of care and heightened concern for others, with gender differences arising from culturally specific expectations. It was proposed as a framework that may help explain the greater propensity of women in the MENA region to engage in green purchasing, particularly in societies where male dominance is prevalent, and women are primarily responsible for childcare and family care. Additionally, women often have a more prominent role in household management compared to men, positioning them as a key target demographic for specific SCB, such as recycling and household waste management (Elhoushy and Lanzini, 2020). However, socialization theory may be overly simplistic in explaining why women demonstrate higher engagement in green purchasing. Consequently, the findings indicate that an alternative theoretical framework should be considered, one that goes beyond the basic gender differences emphasized by socialization theory to provide a more nuanced understanding of these behaviours.

Income appears as a strong predictor for green purchase in MENA, as supported by 8 studies, while 2 studies indicate a negative relationship, and 2 studies find no significant association (Elhoushy and Lanzini, 2020). However, no empirical evidence of a strong framework to understand the relationship between income and this behaviour has been found. Some scholars argue that higher income can lead to a greater desire to portray a status symbol through visible status goods (Bricker et al., 2018). Various studies have proposed that individuals often act in pro-environmental ways, motivated by a desire to project a positive status symbol. These actions provide benefits such as self-identification or improved reputation (Trudel, 2018). Another study suggests that status competition can be leveraged to encourage pro-environmental behaviour (Griskevicius et al., 2010). Consumers often make sustainable choices to create a positive impression and engage in high-commitment behaviours, such as purchasing hybrid vehicles, as a means of signalling social status (White et al., 2019). Those findings present a need to further investigate theoretical frameworks that can explain how this behaviour.

Israel is often excluded from MENA sustainability studies, resulting in a notable gap in the literature, particularly regarding consumer studies in the country. Limited number of studies have been found which examined specific aspects of sustainability, such as greenhouse purchasing and sustainable dietary choices, and these do not provide a comprehensive understanding of SCB in Israel. For instance, one study found that socio-demographic variables factors, such as gender, age, and income level, on willingness do not show a statistically significant correlation with the willingness to choose sustainable housing (Rosner et al., 2022). In contrast, another study on sustainable food choices revealed that a higher proportion of women selected sustainable food compared to other food options, with this trend being less pronounced among men (Irit et al., 2018). These findings highlight

inconsistencies and gaps in the current research, emphasizing the need for further investigation into SCB in Israel to develop a more holistic view.

Post-materialist theory have been extensively studied in relation to SCB and GPI (Duroy et al., 2008; Prikshat et al., 2024; Summers, 2016). Previous research had suggested that individuals in developing countries typically placed less emphasis on environmental protection than their counterparts in developed countries (Weber, 2015). These studies generally indicate that wealthier societies are more likely to exhibit non-materialistic environmental attitudes, as opposed to materialistic ones. One research challenged that assumption, proposing that the disparity in post-materialistic values, particularly concerning environmental issues, between developing and developed nations might have been less significant than previously assumed. The findings indicated that semi-developing countries might indeed have prioritized environmental protection over economic growth to a greater extent than anticipated. One research challenged that assumption, proposing that the disparity in post-materialistic values, particularly concerning environmental issues, between developing and developed nations might have been less significant than previously assumed. The findings indicated that semi-developing countries might indeed have prioritized environmental protection over economic growth to a greater extent than anticipated (Weber, 2015).

In summary, the literature review has uncovered several key insights that will form the basis of this study. EC emerge as a fundamental concepts, demonstrating its impact on both the awareness and behaviour of individuals towards more sustainable consumption practices. Other factors, such as age, gender, and income, have shown inconsistent effects across various studies, reflecting a need to examine those factors in new context. Additionally, the review highlighted several theoretical frameworks employed in the study of green consumerism, including generational theory, post-materialism, and socialization theory. Finally, the literature review underscored the necessity of examining the influence of socio-demographic factors and whether their impact on behaviour differs from their influence on intentions.

Theoretical framework

The literature review highlighted the need to challenge previous studies that failed to find a strong correlation between socio-demographic factors and SCI. This emphasizes the importance of developing a strong theoretical framework to effectively examine the influence of socio-demographics on SCI in a new context. This framework integrates several socio-cultural theories to explore the intersection of gender, age, and income with green intentions in Morocco, the UAE, and Israel. Theories examined in this analysis include: generational theory, ecofeminism, post-materialism, and the affluence hypothesis, with a critical focus on evaluating their relevance and applicability in non-Western contexts.

Generational theory

Generational theory examines how historical events shape the attitudes and values of different generations. Rooted in the work of Karl Mannheim, the theory emphasize the pivotal role that generations play in historical change. Mannheim argued that generational identity is forged through shared experiences of significant historical events. (Edmunds et al., 2005; Mannheim, 1997). Mannheim's theory also establishes a connection between generational identity and nationalist movements, highlighting how youth movements have historically driven national renewals in regions such as the Middle East, India, and Indonesia. Notable examples Russian Revolution, the Second World War and the Communist Revolution of China. Since the 1970s, environmentalism has gained prominence, fostering a heightened global awareness of the dangers pollution poses to human life, which has subsequently become a significant aspect of international political discourse (Edmunds et al., 2005; Mannheim, 1997).

Environmentalism has been associated with an ethic of care, and considered essential for any cosmopolitan ethical framework. Ecological concerns have been integral to youth and anti-globalization movements, emphasizing their role in the politics of generational change. This concerns alongside broader societal changes, exert a profound influence on the values, behaviours, attitudes, and beliefs of individuals. Early-life experiences are particularly impactful, as they shape the cognitive styles and common inclinations of individuals within the same generational cohort (Edmunds et al., 2005; Mannheim, 1997). According to Edmunds' view of the theory, the convergence of resources, opportunities, and strategic leadership is essential in forming generations that are actively engaged (Edmunds et al., 2005).

However, the use of this theory present inherent limitations. Critics of generational theory argue that, while proponents claim distinct life patterns in the Western world reflect true generational shifts, this view often oversimplifies complex social changes. Using broad generational labels like 'Baby Boomers', 'Generation Z' or 'Generation X' in media and policy discussions can mask these complexities. Furthermore, it is unclear whether the emergence of new generations is driven by technological advancements or other factors, and how their experiences differ from previous generations. This ambiguity challenges the assumption that social change directly leads to the formation of a new generation and questions Mannheim's

idea of youth as the key period for generational formation (France, 2024). The inconsistency in defining generational boundaries poses challenges for the conceptualization of generations, their operational definitions (specifically, the time span assigned to each generation), and the evaluation of their influence on various outcomes. While there may be general consensus on the generational labels, the specific beginning and ending years attributed to each generation often differ significantly (Costanza et al., 2012).

Ecofeminism theory

Ecofeminism is a theory and ecological-feminist movement which focuses on the intersection of gender and environmental issues, positing asserting that the oppression of women and the exploitation of nature are fundamentally interconnected. Addressing these linked forms of domination is essential for achieving both social and ecological justice. The term 'ecofeminist' was originally coined by Françoise d'Eaubonne in her book *Feminism or Death* that was publish in 1974. Since its inception, ecofeminism has evolved into a multifaceted field of study, encompassing a wide range of perspectives and interpretations (Sakellari et al., 2013).

Despite its diversity, ecofeminism generally advocates for social transformation as essential for ecological survival, alongside the need for an intellectual shift away from dominant modes of thought. Ecofeminists argue that nature provides models of non-dualist and non-hierarchical relationships, which are essential for reshaping societal values. The movement also values human and cultural diversity as crucial to social change. Within ecofeminism, theological, ethical, and religious perspectives often seek to integrate science and religion (Howell, 1997).

Ecofeminism posits that women's inclination to care for the environment stems from two interrelated factors: their socialization into nurturing roles, which enhances their sensitivity to environmental issues, and their parallel experiences of oppression, as both women and nature are often subjected to domination by patriarchal systems. They argue that patriarchy is the underlying force behind the oppression of women, marginalized groups such as the poor and indigenous populations, as well as the exploitative systems of production and consumption that treat nature as a mere commodity, subject to exploitation and disposal (Buckingham, 2015; Öztürk, 2020; Plavsic et al., 2013). An inherent limitation is involved in using ecofeminism as a theoretical framework. Ecofeminism is rooted in Western feminist discourse, which may not directly translate to societies in the MENA. It is historically focused on patriarchal Western society, and it is not clear the theory may also be applicable on another countries which women suffer and experience are similar.

Post-materialism theory

Post-materialist values reflect a societal shift from materialist concerns to prioritizing self-actualization, environmental responsibility, and participatory governance, highlighting changes in Western cultural and political landscapes. The person who is considered the founding father of the theory is Ronald Inglehart. Inglehart's post-materialism thesis

highlights the emergence of a new set of societal values with significant social and political implications. Inglehart posits that advanced Western societies are undergoing a transition from materialist to post-materialist values. Materialist values emphasize the importance of personal safety, societal stability, law and order, and economic and financial security. In contrast, post-materialist values focus on self-actualization, political freedom, creativity, fostering personal relationships, engaging in civic participation, and prioritizing environmental care. This revolution reflects a gradual replacement of materialist values by post-materialist ones, driven by the generational replacement. The thesis combines two key hypotheses: the scarcity hypothesis, which suggests that individuals prioritize values that are in relatively short supply in their socioeconomic environment, and the socialization hypothesis, which argues that values are shaped during pre-adult formative years and remain stable throughout an individual's life (De Witte, 2004; Inglehart, 1977).

Inglehart posited that advanced industrial nations, which are more likely to embody post-materialist values, also tend to demonstrate stronger pro-environmental intentions. According to his subjective values hypothesis, the higher a country's position on the post-materialism scale, the more its population is expected to demonstrate a distinct commitment to environmental protection. Inglehart argued that public support for environmental initiatives is more pronounced in nations with relatively post-materialist populations, suggesting that post-materialists and materialists display differing degrees of pro-environmental intentions. This perspective further implies that post-materialists, having reached a level of economic prosperity and security, are more inclined to prioritize environmental concerns. Additionally, Inglehart proposed the objective problems hypothesis, which asserts that nations facing severe environmental challenges are more likely to exhibit strong pro-environmental intentions focused on addressing local environmental issues (Inglehart, 1977; Mostafa, 2013).

The affluence hypothesis

The affluence hypothesis, originally grounded in post-materialism theory, has been explored by Paul Ransome in the realm of consumption and social identities. He posits that affluence, defined as the ready availability of surplus income, plays a crucial role in the transformation of social roles, particularly in the shift from work-based to consumption-based identities. This hypothesis suggests that increased affluence expands individuals' choices in the consumption of goods and services, thereby enhancing their autonomy. This expanded autonomy fosters an awareness that existing social conditions are not fixed, opening the possibility for change (Ransome, 2005).

As people become more affluent, they tend to focus less on work as the main part of their lives and more on consumption activities. As a consequence, the cultural or symbolic dimension of consumption takes precedence, leading individuals to prioritize the meanings associated with goods. It implies that the social norms, roles, and interactions that once centred around work begin to centre more around consumption. People's identities and social

relationships become more defined by what they consume and how they spend their leisure time rather than by their roles in the workforce. Consequently, affluent consumption becomes a central site for the expression of autonomy, meaning and subjectivity, serving as an enabling force in social development (Ransome, 2005).

No empirical evidence in the literature has been found to test Ransome hypothesis as an explanatory framework within the context of pro-environmental behaviour or green consumption. It should be acknowledged that, applying the framework in this research introduces certain limitations, such as a methodological challenges, and conceptual gaps.

Generational cohort theory
(Karl Mannheim, 1952)

Post-materialism
(Ronald Inglehart, The Silent Revolution, 1977)

Context shapes attitudes

The affluence hypothesis
(Ransome, 2005)

Ecofeminism
(Françoise d'Eaubonne, 1974)
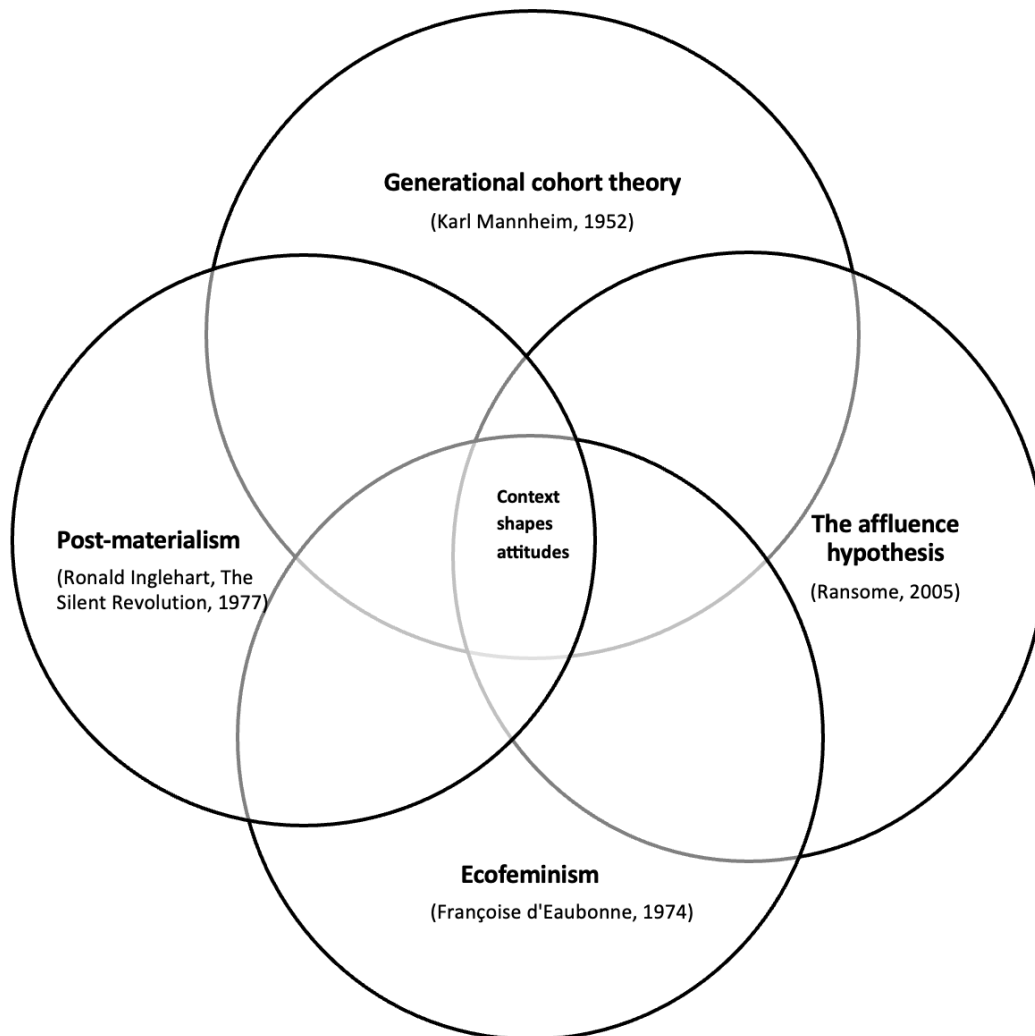
Figure 1: Theoretical framework – Venn Diagram

To conclude, the theories present a framework that aims to explain shifts in attitudes which shaped by a unique contexts. Generational theory highlights how shared historical experiences may shape generational identity across different age groups. Post-materialism further complements this by illustrating the shift in societal values from materialistic concerns to self-expression. The affluence hypothesis emphasis the transition from a work-based to

consumption-based identities as affluence increase. Lastly, ecofeminism adds a critical dimension by linking environmental issues with social justice, emphasizing the interconnectedness of ecological degradation and the oppression of women.

While theories such as post-materialism, generational theory, ecofeminism, have been significantly important in Western contexts, their relevance to non-Western settings remains uncertain. For example, post-materialism presumes a shift in values after achieving economic prosperity, a premise that may not apply to societies where material concerns continue to dominate due to economic instability. Similarly, generational theory might fail to capture the influence of local historical events that uniquely shape environmental attitudes outside of the Western experience. Therefore, the division of generations outside the Western world may not apply to the theory. To address this issue, I will deviate from the conventional generational classifications, which often oversimplify differences, and instead adopt the more nuanced age divisions commonly used in market research. Nonetheless, I will use the generational theory as a baseline to argue that younger cohorts may still exhibit more pro-environmental attitudes compared to older cohorts, as supported by the empirical evidence presented in the literature review.

My study aims to address these gaps by testing the applicability of those theories in Morocco, the UAE and Israel, thereby evaluating their cross-cultural validity and potentially adapting them to better align with non-Western contexts. This research will assess the applicability of Western socio-cultural theories in these settings, possibly leading to the development of a more culturally oriented framework for understanding environmental attitudes. By doing so, the study not only addresses a significant gap in the literature but also challenges the predominance of Western-centric models in global sustainability research.

Hypotheses development

Based on the literature review and the theoretical framework, I propose the following conceptual map:
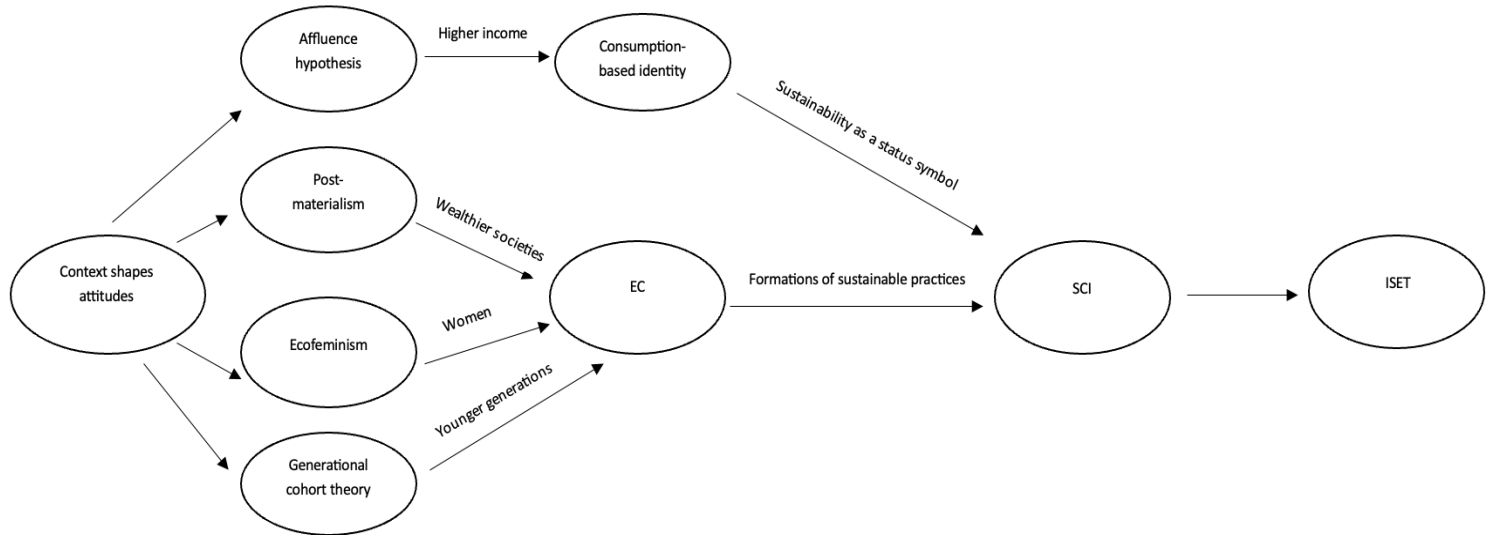
Figure 2: Conceptual map

The conceptual map (see Figure 2) outlines the proposed relationship between various socio-cultural theories and their impact on EC, ultimately leading to ISET. A distinction lies in the affluence hypothesis, which is EC is not an intermediate to predict SCI. This perspective is supported by more empirical evidence indicating that these underlying motives have a stronger influence on SCI rather than exerting a direct effect on EC. The central premise is that individuals' attitudes are shaped by socio-cultural, economic contexts, and personal expression, which are influenced by factors such as affluence, gender dynamics, and generational experiences.

Several hypotheses were developed to explore the relationship between the theories, EC and ISET. Specifically, this study aims to examine whether age, income, and gender serve as significant predictors of these intentions.

HYPOTHESIS	NULL HYPOTHESIS (H_0)	ALTERNATIVE HYPOTHESIS (H_1)
1	Gender is not a predictor of EC and ISET	Women positively associated with higher EC and ISET
2	Income is not a predictor of ISET	Higher income positively influence ISET
3	Younger ages positively associated with higher EC and ISET	Younger generations positively associated with higher EC and ISET
4	EC has is not a predictor of ISET	Higher EC positively influence ISET

Table 1: Hypotheses formulated for this research
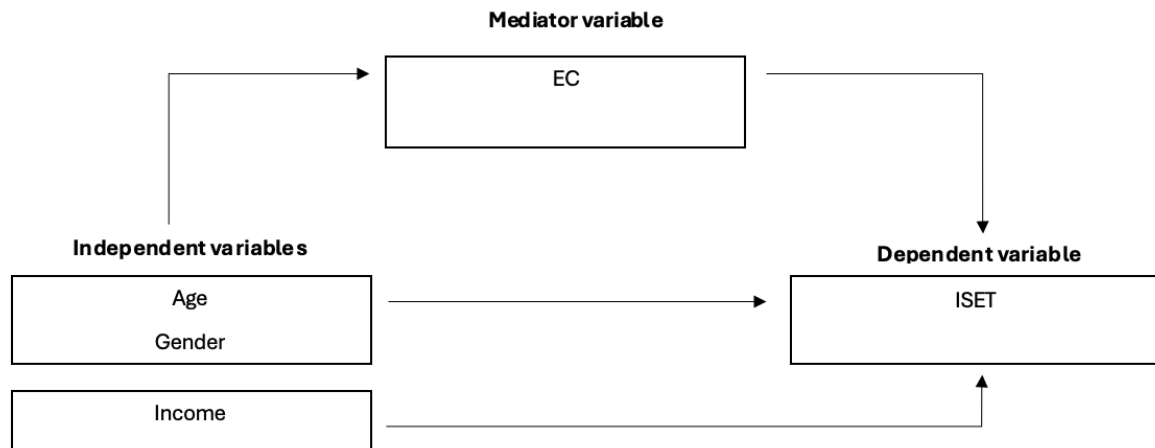
Figure 3: Proposed relationship between IVs, MV, and DV

Methodology

To effectively plan the research methodology, it was crucial to first review previous studies that examined similar or identical predictors of SCI. The majority of these studies employed a quantitative research design and utilized non-probability sampling methods, such as convenience or quota sampling, with a smaller number of studies opted for random sampling methods (Elhoushy and Lanzini, 2020), considering the difficulty and the financial resources required for this approach.

Given these considerations, a quantitative research design was chosen for this study. In a quantitative research design, the primary aim is to explore and understand the nature of "connection between an independent variable (IV) and a dependent variable (DV)" within a population (Mehrad et Zangeneh, 2019: 2). Quantitative research systematically measures and analyses numerical data to explain, predict, and control variables, ensuring unbiased, objective results. Currently, approximately two-thirds of research articles employ quantitative data, which is recognized for its high validity and contribution to research quality. The analysis of data from large samples typically necessitates the use of quantitative methods (Mohazan, 2020). Given my focus on IVs-DV relationships, this method was the most appropriate.

Survey design

An online survey was designed to collect data across the three countries, providing a solid base for statistical analysis. The questions assessing the importance of various attributes were structured using a 5-point Likert scale (Likert, 1932). The Likert scale was used because it is extensively acknowledged as a straightforward and dependable method for scaling, facilitating the measurement and comprehension of respondent perceptions. Furthermore, respondents view Likert scale is more user-friendly and quicker to complete compared to alternative scaling methods (Tanujaya et al., 2022).

Although the Likert scale is often regarded as a convenient tool for measurement, it faces several inherent limitations according to certain scholars, such as insufficient reliability. A key concern is that the Likert scale, as a non-comparative scaling technique, assesses only a single attribute at a time in a unidimensional manner, thereby failing to capture the multifaceted nature of human opinions (Heo et al., 2022). For the scope of this study, this design was the most suitable choice for proposing new multi-dimensional constructs and conducting statistical analyses to identify initial correlations. Future research should employ mixed-methods in order to capture human opinions more broadly.

A cross-sectional survey was used to collect data on behaviors, intentions, and attitudes. This type of design is conducted at a single point in time, which can introduce potential biases or limitations when studying variables that vary over time, such as health and aging. Despite this, cross-sectional surveys offer several advantages: they are versatile, applicable to diverse populations, and cover a wide range of human behaviors and conditions. Moreover, cross-sectional surveys can be conducted relatively quickly, making them particularly useful for gathering data on current events (Connelly, 2016). Given the limited time of this research, a cross-sectional survey was the most suitable approach.

The survey questions used both unipolar and bipolar Likert scales to measure EC and ISET attitudes. Unipolar scales range from very positive to negative responses, while bipolar scales include a neutral midpoint between positive and negative extremes. Despite extensive research, there remains a lack of empirical evidence and scientific consensus on the effectiveness of unipolar versus bipolar scales in measuring respondents' attitudes (Höhne et al., 2021). There is no definitive or incorrect approach to constructing a Likert scale. However, it is crucial to ensure that the scale consists of a minimum of five response options (Allen et al., 2007).

The survey included 23 questions and covered demographics, environmental attitudes, and transportation and energy transition intentions, using Likert-scale questions and multiple choice. It was available in English, Hebrew, Arabic, and French. In the survey design, certain questions outside the immediate scope of the study were intentionally included for logical structuring and to create opportunities for further research and policy recommendations. Survey logic was employed to improve the efficiency of data analysis, reduce extra costs of questions and to improve the data quality. For instance, the question "What is your primary mode of transportation?" was designed as a logic-based filter, ensuring that only respondents who drive gasoline or diesel vehicles would subsequently answer questions regarding their intention to purchase an eco-friendly vehicle or shift to sustainable transportation. Furthermore, a logic was employed on the income range question, to make it easier for the respondents to answer their income in the local currency.

Sampling

Due to financial, geographical, and time constraints, non-probability sampling was employed. Non-probability sampling is a selection method that uses non-random criteria to collect data. This method is a fast, easy and cost-effective approach that suit for this scope and budget of this study. However, the limitations of this approach such as potential biases and the challenges of achieving a representative sample should be acknowledged. Furthermore, non-random selection limits the ability to generalize the results (Gobo, 2024). Although the use of this method in the study cannot draw unequivocal results, it could serve as a preliminary step towards identifying key patterns and trends that warrant further exploration. Future studies could build on these findings by employing random sampling techniques to provide more generalizable conclusions.

Quota sampling was used to ensure representation across countries and demographics, though it may introduce selection bias, which could be mitigated by stratified random sampling in future research. The primary objectives of this approach are to ensure the selection of a representative sample and to enable the analysis of subgroups within the population. Quota sampling is particularly effective in achieving sample size targets for specific subpopulations, especially since there are no strict guidelines on how these quotas should be met. This method is often favoured among non-probability sampling techniques because it is straightforward to implement and does not necessitate the use of a sampling frame. Additionally, it is a cost-effective method for generating a sample with relative ease. The initial step involved dividing the population into mutually exclusive subgroups (Countries), known as strata. After categorizing the population, elements were selected from each subgroup (Iliyasu and Etikan, 2021).

Some scholars of quota sampling argue that it is possible to establish complex and highly specific quotas to approximate a stratified random sampling arrangement. This may encompass various quota controls, such as social status, occupation, gender, age, education level, and the population size of regions or cities (Iliyasu and Etikan, 2021). Furthermore, in the absence of detailed data on income and age distribution across countries, I selected a quota sampling approach to ensure equal representation, appropriate for a cross-cultural analysis. The quota was set to a minimum of 50 respondents per country, equal representation of income and age groups The final sample included 184 adults (55 from Morocco, 73 from the UAE, and 56 from Israel), with nearly equal distribution across five income groups and age categories.

Variables measurement

The IVs in this study included income, age, and gender, while the MV was EC, and the DV was ISET. Income was initially measured in absolute terms across five specific currency ranges. For descriptive statistical analysis, these income levels were categorized into five distinct groups: low, lower-middle, middle, upper-middle, and high, and standardized into nominal categories to ensure comparability across regions with different currencies. Age was categorized into

five distinct groups: 18-24, 25-34, 35-44, 45-54, and above 54, while gender was divided into three categories: male, female and prefer not to say. The last option of gender 'prefer not to say' has not been included in the statistical analysis. It should be acknowledged that the age divisions utilized here differ slightly from some of the commonly accepted definitions of generational cohorts. This variation arises due to the constraints inherent in operationalizing these divisions within different contexts, as discussed in the theoretical framework. Therefore, after reviewing multiple researches, a more commonly age brackets were selected for this research (Antinienė; 2021; Kuchinka et al., 2018; Walaszczyk et al., 2022).

The Control Variables (CVs) included education and employment status, which were considered essential for isolating the effect of the IVs on the DV. Education level was categorized based on the highest degree attained, while employment status was classified according employment status. By controlling for these variables, the analysis aimed to account for potential confounding factors that could influence the relationship between income levels and the dependent variable. This approach ensured that the observed effects were more directly attributable to differences in income rather than other socio-economic factors.

DEPENDENT VARIABLES	MEDIATOR VARIABLE	INDIPENDENT VARIABLES	CONTROL VARIABLES
ISET	EC	Age group	Education
		Gender	Employment status
		Income range	

Table 2: Variables used in research

Constructs conceptualization

Essential part of the methodology was the conceptualization, which is the cognitive process through which vague and ambiguous concepts and their constituent elements are articulated in specific and precise terms. The process of determining what is encompassed within and excluded from the concept is integral to conceptualization. This process is particularly vital due to the inherent imprecision, vagueness, and ambiguity associated with many social science constructs (Bhattacherjee, 2012).

Conceptualization is essential when dealing with complex constructs, to make sure the items are representing the same underlying meaning. Based on insights from the literature review indicating that SCI and EC may encompass several distinct attributes, multidimensional constructs were employed to test my hypothesis. A construct is considered multidimensional when it integrates several distinct, but related dimensions into a single theoretical concept. Such constructs are commonly used to represent these dimensions cohesively (Edwards, 2001). ISET is a multidimensional construct that includes both the financial willingness and

likelihood, as well as the behavioural intentions of individuals. Similarly, building on (Laheri et al., 2023) conceptualization of EC, which includes knowledge, concern, and values, the EC construct that was employed here, is also a multidimensional construct, encompassing three primary dimensions: cognitive, affective, and behavioural.

VARIABLE	ITEMS
EC	Researching environmental impact of products
	Self-rated environmental friendliness
	Knowledge of environmental issues
	Concern about climate change
ISET	Willingness to spend more on environmentally-friendly technologies
	(Include various sustainable energy solutions and sustainable vehicles)
	Intentions to spend more money on eco-friendly vehicle
	Interest to purchase a share in solar power plant to generate electricity at home
	Likelihood to switch to sustainable transportation in 3 years
Omitted	Willingness in buying a wind turbine
	Willingness to buy or install solar panels

Table 3: Constructs used in research and those who were omitted

The table presents the items categorized into two main themes based on the theoretical framework and literature review. Questions within each category were computed into a one interval variable using the mean of the Likert-scale responses. Where appropriate, reverse coding was applied to the Likert-questions to ensure that all items were consistently aligned in the same direction for accurate analysis. Furthermore, as mentioned before some of the questions were based on logic, it a useful tool the handle missing values as it only calculates existing values of items.

Survey questions regarding the 'willingness to buy and install solar panels' or 'buy a wind turbine' were excluded from the main analysis because they relied on additional variables not accounted for in this research. Specifically, factors such as residential context, including the type of housing and whether participants were renting or owning their homes, were not measured in this study. Furthermore, the actions of purchasing a wind turbine or solar panels are highly specific and may not be applicable or realistic for many respondents, particularly those living in rental flats or in areas where wind turbines are impractical.

To test internal consistency and reliability of the items within each of the two constructs, I conducted a reliability analysis to measure Cronbach's alpha.

CONSTRUCT	MOROCCO	UAE	ISRAEL
	Cronbach's Alpha (α)	Cronbach's Alpha (α)	Cronbach's Alpha (α)
EC	.513	.676	.728
ISET	.736	.724	.718

Table 4: Cronbach Alpha test results of constructs items

Reliability tests showed moderate EC reliability (α=.513 to .728) and higher ISET reliability (α=.718 to .736) across countries. For scales with a relatively small number of items, it has been argued by certain scholars that a Cronbach's alpha as low as 0.50, could be considered acceptable (Hojnik et al., 2020; Pedhazur and Schmelkin, 1991). Furthermore, the variations in Cronbach's Alpha values for EC across different countries may reflect the inconsistencies in measurement, as noted in the literature review.

Data collection

The initial step before gathering survey respondents was to identify high-quality, targeted participants through a reputable online survey panel firm. To ensure credibility, academics testimonials were requested and subsequently decided to utilize the services of QuestionPro, a leading provider of online survey software which provides convenient solution for high quality survey audience with a database of more than 5 million participants. The data was collected and administered through the Questionpro platform. All participants were pre-qualified and pre-screened respondents by the firm, ensuring their suitability for the research. test

A Pre-test of the survey was conducted to evaluate the initial design of the questionnaire intended for the primary research study. Because the survey was written in four languages including French, English, Arabic and Hebrew, The objective of the pre-test was to identify and rectify any potential ambiguities, errors, or biases in the survey questions translations, ensuring clarity and reliability. This phase involved administering the survey to a small sample of 15 participants. Respondents' recommendations were incorporated into adjustments made to the survey design at a later stage. After that, a pilot was conducted gathering first 20 respondents from the UAE to make sure data is collected and people answer all the survey questions. Finally, the survey was distributed to a total of 1,871 participants in July 2024, until it fulfilled a pre-defined quota within one week.

PHASE		PURPOSE
1	Pre-test	initial assessment to identify potential issues with the survey design, such as question clarity or language barriers

2	Pilot-test	Technical validation to ensure functionality of survey
3	Full survey distribution	Data collection

Table 5: Data collection process

Data analysis

To test my hypotheses, I conducted a multiple linear regression analysis using IBM SPSS 20. Multiple regression is a group of analytical techniques designed to investigate the relationship between a single continuous dependent variable and a set of independent variables. The IVs can be either continuous or dichotomous. While multiple regression builds upon the principles of correlation, it allows for a more nuanced analysis of the relationships among a set of variables, making it particularly well-suited for examining complex real-world research questions. (Pallant, 2020). To accurately analyse Likert data, it is crucial to comprehend the measurement scale represented by each item. Likert-type items are classified as ordinal variables, and should be interpreted using mode or median in descriptive statistics. In contrast, Likert scales are formed by computing a composite score, either by summing or averaging Likert-type items. The composite scores derived from Likert scales should be analysed using interval scale methods. Therefore, it is advisable to use the mean to represent central tendency and standard deviation to assess variability (Boone and Boone, Jr., 2012).

The multiple linear regression model enabled me to assess both the individual and combined effects of the IVs on the DVs, while controlling for potential confounding factors such as education and employment. To make the analysis more convenient, I divided the dataset into three separate subsets corresponding to the countries examined. This segmentation facilitated a more convenient and precise analysis.

Multiple regression analysis was carried out in three phases. In the first phase, ISET was used as the DV together with the IVs and CVs. The second phase involved using EC as the dependent variable together with the IVs and CVs. In the third phase, EC was examined as a predictor of ISET together with the rest of the IVs. To ensure the validity of my regression models, the rule of thumb was followed that the regression model will have at least 10 as a minimum observations per predictor variable. This guideline is crucial for minimizing the risk of overfitting and ensuring reliable coefficient estimates, especially in smaller samples (Wilson and Logan, 2007). Consequently, I removed in the last regression non-significant variables, such as employment status for Morocco and education for Israel, as they did not contribute meaningfully to the model. This approach allowed me to maintain a good model, focusing on variables that significantly impact the outcomes, thereby enhancing the overall explanatory power and interpretability of the findings.

Ethical Considerations

Several ethical considerations were addressed before conducting this study. Firstly, informed consent was insured: participants were informed about the survey's objectives, the use of

their data, their right to participate voluntarily, and their right to withdraw at any time. Secondly, protecting anonymity and confidentiality was essential. No personally identifiable information was collected, and all responses were securely stored and inaccessible to unauthorized individuals. The entire process of collecting data from Questionpro was conducted in accordance with GDPR compliance for data protection. I made sure that the participants will have to tick the box 'I agree to participate' before they could start the survey. Ethics approval from the UCL Ethics Committee was obtained before data collection. The survey was conducted on an online platform, which limited participation to internet users.

Findings

Sample characteristics

VARIABLE	SUBGROUPS	MOROCCO n (%)	UAE n (%)	ISRAEL n (%)
Countries' sample size		55	73	56
Gender	Male	32 (58.2)	49 (67.1)	30 (53.6)
	Female	23 (41.8)	24 (32.9)	25 (44.6)
	Prefer not to say	0 (0.0)	0 (0.0)	1 (1.8)
Age group	18-24	15 (27.3)	15 (20.5)	12 (21.4)
	25-34	10 (18.2)	15 (20.5)	12 (21.4)
	35-44	10 (18.2)	15 (20.5)	10 (17.9)
	45-54	10 (18.2)	15 (20.5)	10 (17.9)
	> 54	10 (18.2)	13 (17.8)	12 (21.4)
Income	Low	12 (21.8)	15 (20.5)	11 (19.6)
	Lower-middle	10 (18.2)	15 (20.5)	12 (21.4)
	Middle	11 (20.0)	15 (20.5)	10 (17.9)
	Upper-middle	11 (20.0)	13 (17.8)	12 (21.4)
	High	11 (20.0)	15 (20.5)	11 (19.6)
Qualification	Less than high school diploma	3 (5.5)	5 (6.8)	0 (0.0)
	High school diploma or equivalent degree	16 (29.1)	12 (16.4)	9 (16.1)
	No degree	2 (3.6)	2 (2.7)	9 (16.1)
	Bachelor's degree	23 (41.8)	43 (58.9)	24 (42.9)
	Master's degree and above	11 (20.0)	11 (15.1)	14 (25.0)
Employment status	Full-time employment	23 (41.8)	44 (60.3)	36 (64.3)
	Part-time employment	13 (23.6)	10 (13.7)	5 (8.9)
	Self-employed	8 (14.5)	8 (11.0)	4 (7.1)
	Unemployed	4 (7.3)	5 (6.8)	3 (5.4)
	Student	3 (5.5)	3 (4.1)	6 (10.7)
	Retired	4 (7.3)	3 (4.1)	2 (3.6)

Table 6: Profile of research participants

The sample characteristics (see Table 6) shows the socio-demographic data of the sample population (*n*=184) across Morocco, the UAE, and Israel. Notable differences include a male-dominant trend, particularly in the UAE, aligning with broader national demographics (UN Population Division, 2024). The majority of respondents in all Morocco and Israel were male, resulting in an unequal gender balance. Age groups are relatively evenly distributed across all

regions, with each country having a balanced representation of participants across different age brackets, although slightly fewer older adults in Israel. Income levels also show a balanced distribution across all three countries, with no significant differences among all income groups. he quota sampling method ensured representation across income and age groups, though the sample may not fully represent the weight for each variable out of the broader population The results also reveals significant disparities in educational qualifications and employment status among the three countries. The respondents in the sample is predominantly university-educated, with Israel and the UAE showing a high share of advanced degrees, Morocco has a more diverse educational profile. Participants employment responses, show higher full-time employment in Israel and the UAE than Morocco, which may imply on a more stable labour market.

Descriptive analysis

VARIABLE			MOROCCO				UAE				ISRAEL	
Descriptive Statistics	Min	Max	Median	Std. Dev.	Min	Max	Median	Std. Dev.	Min	Max	Median	Std. Dev.
ISET												
Willingness to spend more on environmentally-friendly technologies	1	5	4	1.014	1	5	4	1.032	2	5	4	0.8679
Interest in purchasing a share in a solar power plant	1	5	4	1.027	1	5	4	0.893	1	5	4	0.966
Intentions to spend more on eco-friendly vehicle	1	5	4	1.085	1	5	4	1.014	1	5	4	1.153
Likelihood of switching to sustainable transportation in 3 years	2	5	4	0.804	1	5	4	0.901	2	5	4	0.883
EC												
Self-rated environmental friendliness	2	5	4	0.828	1	5	3	0.995	1	5	3	1.018
Frequency of researching environmental impact of products	2	5	3	0.924	1	5	3	1.048	1	5	3	0.88
Knowledge about environmental issues	1	5	4	1.052	1	5	4	1.113	1	5	3	1.004
Concern about climate change	1	5	4	1.257	1	5	3	1.060	1	5	4	1.006

Table 7: Descriptive statistics of Likert-questions

The descriptive statistics analysis of the Likert-questions shows (see Table 7) there is consistently high willingness among respondents from all three countries to shift to sustainable energy and transportation. The median scores of 4 out of 5 for items related ISET suggest a strong inclination towards SCI. Moroccan respondents demonstrate higher EC compared to Israel and the UAE, with higher median scores among EC items. Overall, the findings suggest a general openness to sustainability among the survey respondents .

The findings also reveal that the minimum values for several key variables begin at 2, reflecting a baseline engagement with environmentally-friendly practices and attitudes. This is particularly notable in questions that measured 'likelihood of switching to sustainable transportation in 3 years' and 'interest in purchasing a share in a solar power plant,' where the even the lowest responses indicate at least a some level of SCI. These results suggest above average commitment to sustainability across the surveyed populations, underscoring

a general trend towards positive environmental behaviour, even at the lower end of the response spectrum.

VARIABLE	MOROCCO		UAE		ISRAEL	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
EC	3.50	0.655	3.29	0.7511	3.20	0.726
ISET	4.07	0.797	4.08	0.810	3.75	0.723

Table 8: Descriptive statistics of constructs

The constructs descriptive statistics (See Table 8) reveals distinct differences in constructs mean scores. Morocco shows the highest mean EC score (3.50), while Israel has the lowest (3.20). In terms ISET, the UAE show the highest mean score, Morocco exhibit nearly equal and, contrasting with Israel's lower mean score (3.75), reflecting a moderate SCI overall. Overall, Israel shows the greatest variability in responses, indicating a wider range of opinions on both EC and ISET.

Multiple regression analysis

To test the hypotheses, multiple regression analysis was performed in all three datasets in three stages. The findings from the multiple regression analysis are presented in the tables below, detailing the coefficients and significance levels for each predictor variable. Summary of the model (R, R^2 values) is provided in Appendix 4.

VARIABLE	MOROCCO			UAE			ISRAEL		
	ISET			ISET			ISET		
	B	β	Sig	B	β	Sig	B	β	Sig
Age	0.155	0.288	0.037*	-0.16	-0.27	0.817	0.082	0.166	0.250
Gender	-0.460	-0.287	0.035*	0.071	0.41	0.726	0.074	0.055	0.714
Income	0.060	0.108	0.452	0.148	0.261	0.034*	-0.078	-0.154	0.313
Education	0.042	0.067	0.624	0.009	0.012	0.919	0.183	0.255	0.082
Employment	-0.038	-0.075	0.582	-0.111	-0.195	0.105	-0.171	-0.374	0.017*

Table 9: First multiple regression test of predictors effect on DV

The first regression analysis (see Table 9) shows age have a high positive correlation as predictors (β=0.288 , p<0.05), while gender has negative correlation (β=-0.287 , p<0.05) with ISET outcomes in Morocco. Man is coded 1 and women is 2 indicating women are less likely to be in higher categories of ISET. Furthermore, the regression shows income has a positive correlation with ISET (β=0.261, p<0.05) in UAE, and negative correlation of employment with ISET in Israel (β=-0.374, p<0.05). Other variables, such as education and age in the UAE and Israel, do not show significant correlation with ISET, suggesting limited influence on the outcome variable in these contexts.

VARIABLE	MOROCCO	UAE	ISRAEL
	EC	EC	EC

	B	β	Sig	B	β	Sig	B	β	Sig
Age	0.082	0.186	0.157	0.054	0.062	0.390	0.031	0.063	0.680
Gender	-0.256	-0.194	0.134	0.240	0.151	0.196	0.199	0.148	0.354
Income	0.089	0.197	0.158	0.153	0.291	0.017*	0.077	0.152	0.347
Education	0.169	0.325	0.016*	-0.019	-0.079	0.810	-0.025	-0.034	0.822
Employment	0.046	0.109	0.405	-0.095	-0.180	0.129	-0.148	-0.322	0.049*

Table 10: Second multiple regression test of predictors effect on MV

The second regression analysis (see Table 10, Appendix 4) shows that education has a high statistically significant positive correlation (β=0.169 , p<0.05) with EC in Morocco. Furthermore, it shows that income is positively correlated with ISET (β=0.153, p<0.05) in the UAE, and employment is negatively correlated with EC in Israel (β=-0.322, p<0.05). Other variables, such as age and gender, do not show significant correlations with EC in any of the countries, indicating that these factors may have a limited impact on EC in these contexts. However, educational attainment shows a statistically significant positive correlation with EC (β = 0.325, p < 0.05).

VARIABLE	MOROCCO			UAE			ISRAEL		
	ISET			ISET			ISET		
	B	β	Sig	B	β	Sig	B	β	Sig
Age	0.144	0.267	0.055	-0.039	-0.068	0.540	0.111	0.225	0.076
Gender	-0.460	-0.287	0.039*	-0.033	-0.019	0.861	0.002	0.002	0.990
Income	0.065	0.118	0.414	0.081	0.144	0.222	-0.071	-0.141	0.300
Education	0.041	0.064	0.655	0.017	0.024	0.832			
Employment				-0.070	-0.123	0.276	-0.103	-0.226	0.123
EC	0.037	0.03	0.838	0.434	0.402	<0.001***	0.442	0.443	<0.001***

Table 11: Third multiple regression test of IVs, CVs and MV on DV

The third regression analysis (see Table 11, Appendix 4) shows that EC has a high positive correlation (β=0.443 , p<0.001) with ISET in Israel and Morocco. Furthermore, it shows gender has a negative correlation on ISET (β=-0.287, p<0.05) in Morocco. This gender effect is not observed in the UAE or Israel, where the correlations are insignificant. Other socio-demographic factors, such as age, income, education, and employment status, do not show significant effects on ISET across all three countries. Age appears to approach statistical significance in Morocco (β=0.267, p=0.055) and Israel (β=0.225, p=0.076), suggesting a potential trend towards influence on ISET that warrants further investigation.

Discussion

The findings present a set of mixed results, with variability in the outcomes across different measures and contexts. This diverseness suggests that while some aspects of the data align with the initial hypotheses, others diverge, pointing to the ambiguity of the findings within different countries. Although the null hypothesis cannot be rejected, the data suggest the

presence of emerging trends that warrant further investigation. Similar to previous studies in MENA countries, this study finds no strong corelation between socio-demographics variables and sustainable consumer intentions.

The sample (see Table 6) highlight significant disparities in socio-demographic characteristics across the three countries, with important implications for the analysis. The male-dominant trend, particularly in the UAE, reflects national demographic patterns, as mentioned earlier. Additionally, the samples from both Morocco and Israel exhibit a higher proportion of males compared to females. The levels of higher education attainment varied by country, with (61.8%) in Morocco, (74.0%) in the UAE, and (67.9%) in Israel holding a Bachelor's degree or higher. These figures highlight differences in educational attainment across the countries, which may indicate a sampling bias, where individuals with higher levels of education choose to participate. Employment trends in Morocco (41.8%), the UAE (60.3%), and Israel (64.3%) indicate higher full-time employment rates in Israel and the UAE. These results may reflect more stable labour markets in Israel and the UAE compared to Morocco. However, it is not reflecting to unique composition of the UAE which his mainly populated by expats (CIA, 2024)

The descriptive statistics of constructs items (see Table 7) revealed that Moroccan respondents show slightly higher median across most categories compared to Israel and the UAE, indicating a marginally greater EC. However, the standard deviations suggest variability in responses within each country. The data reveals a consistent trend where Israeli and UAE respondents exhibits a broader spectrum of commitment to environmentally-friendly behaviours compared to Morocco. For example, the median score for of three out of four items of EC in the UAE and Israel was 3, compare to Morocco's which the median of three out of the four items was four, that may suggest a bias among Moroccan respondents. This pattern in ISET items, show a slightly different picture. Among all three countries, the median was 4 which indicate a higher intentions among respondents to shift to more sustainable practices in energy and transportation.

The findings also indicate that minimum values for key ISET items in Morocco and Israel begin at 2, suggesting a baseline engagement with environmentally sustainable practices. This suggests a broad and varied attitudes to SCI among the surveyed populations. The descriptive analysis revealed a limitation of the research. The constructs exhibits significant negative skewness, and data distribution is right-tailed. This limits the research in a way that there will not be an equal representation for all the answers in the Likert-scale. These variations in skewness, highlight the nuanced differences in participants' environmental attitudes and behaviours. The majority of the variables exhibited negative skewness, indicating that respondents generally expressed favourable attitudes towards environmental actions, such as purchasing solar power shares, installing solar panels, and switching to sustainable transportation. This suggests a predominant inclination towards EC and ISET among the participants.

*H*1 proposes that "women positively associated with higher EC and ISET". During the regression analysis, *H*1 was also fully rejected, contrasting evidence which gender roles and EC are more closely linked. The statistically significant negative influence of gender observed in Morocco, (β=-0.287, p<0.05) (See Table 9-11) challenges the principles of women environmentalism. These findings suggest that the theoretical framework, when applied to the Moroccan context, failed to accurately predict the gender influence on ISET and EC outcomes in both the first and third regression models. Other countries have not shown any strong correlations of female influence both on EC and ISET as well. In both of the UAE and Israel, gender wasn't statistically significant predictor in all regression analysis, similar to a variety of previous studies in the MENA who found have not find significant correlation between gender and SCI and behaviour. However, the coefficients were positive which may indicate about a trend, but it is still not statically significant. Looking back at the literature review and previous studies examined similar topics, the findings are align with the literature who have found no strong correlations of women and green intentions in the MENA region (Elhoushy and Lanzini, 2020;Haj-Salem, 2024; Alsawafi, 2023; Knezović et al., 2024).

The lack of significant correlation between gender, EC, and ISET in all three countries may point to applicability limitation of ecofeminism, which asserts a stronger environmental ethics among women due to their socialization and shared experiences of oppression (Plavsic et al., 2013; Buckingham, 2015). The results challenges the assumptions of ecofeminism, and suggest that gender may not be a universal predictor of EC or SCI, particularly in non-Western contexts which characterised by different gender and socio-cultural dynamics. This findings call for a re-consideration of ecofeminism applicability into non-Western studies. Factors such as religion and marital status were not considered in this research, and could be a confounding factor. In conservative countries like Morocco, women may face limitations on expressing themselves personally, which could also influence their engagement with environmentalism. Those are important factors that should be taken into account in further research, to better understand the influence of gender with SCI. Overall, from the UAE and Israel, in contrast to Morocco, the data suggest that other factors, rather than gender experiences, may play a more crucial role in shaping EC and SCI. This highlights the need to examine new theoretical framework or adapt existing ones, as current frameworks may oversimplify or misinterpret local realities.

*H*2 proposes that "higher income positively influence ISET". It was fully rejected during the data analysis. During the regression analysis, *H*1 was also fully rejected. In Israel and Morocco (See Table 9-11) income haven't appeared to have statistically significant influence on ISET outcomes, with negative coefficient in Morocco and positive coefficient in Israel. However, the evidence is not strong enough to confidently assert that income is a predictor or not a predictor of ISET. Income has been shown to have a role in ISET outcomes only in the UAE, which it have shown statistically significant positive correlation and positive coefficient

(p<0.05). These findings imply that in the UAE, economic resources may empower individuals to engage in or consider more sustainable practices, possibly due to greater financial ability to make environmentally friendly choices. However, these findings primarily contradict previous literature, which identifies it as a significant predictor of green intentions (Elhoushy and Lanzini, 2020; Kinnear et al., 1974; Milfont et al., 2016).

The findings challenge the use of the affluence hypothesis as theoretical framework, which suggests that increased affluence leads to more sustainable consumer behaviour through status-driven consumption (Ransome, 2005). In Morocco and Israel, income did not significantly predict intentions to adopt sustainable energy and transportation, indicating that affluence alone does not drive environmental consciousness in these contexts. The positive correlation in the UAE may be more reflective of socio-cultural dynamics that promote sustainability as a status symbol or it is accessible to more high income ranges. It should be acknowledged that the survey questions did not measure specific aspects of cognitive and psychological motivations behind SCI. Therefore, the ability to draw meaningful conclusions about the applicability of the theory is limited in this study. Future research should place greater emphasis on questions that specifically target cognitive and psychological motivations for sustainability, rather than the more general questions used in this research. This approach would help investigate these deeper motivations and critically engage with the affluent hypothesis.

*H*3 proposes that "younger ages positively associated with higher EC and ISET". It was also fully rejected during the analysis. The findings revealed (see Table 9-11) a statistically significant positive correlation between age and ISET in Morocco (β=0.288, p<0.05). This relationship holds true in the initial regression model, which excludes EC as a mediating variable, but on the subsequent model, where EC is included as a mediator, it is close to be statistically significant but it under the threshold (p>0.05). This contrasts with the observations from the UAE and Israel, where no such relationship between age and ISET was identified in all regressions. However, In the UAE there is a negative coefficient with ISET (β =-0.27) but it is not statistically significant, in Israel the coefficient is positive but not statistically significant as well (β=0.166). These findings warrant further investigation in future research to better understand their reasons and implications on the theoretical assumptions.

Age also not significantly influence EC, indicating that EC may not be strongly age-dependent within this specific context. The lack of a direct effect of age on EC raises potential concerns regarding the current theoretical framework and the validity of this construct, particularly in light of the low Cronbach's alpha and reliability test results (See Table 4). Those findings add to the former academic literature and studies in the MENA who found age to be a not a significant predictor of sustainable consumption. Looking on the theoretical framework, which posits that younger generations will may have a stronger EC, this discrepancy indicates a potential generational divide, where older Moroccans may be more conscious of or willing to engage in sustainable practices, from a reason that unknown and predictors that have not

been taken into account. A potential reason could be for example that since the first category of ages (18-24) may be an age which young-individuals are students and not be financially secured yet, it can hinder them to show higher commitments to change their attitudes due to certain constraints they face as students. The fact that Morocco is a low-income economy (World Bank Data, 2024) may add more to economic and financial constraints faced by younger people. This outcome could also imply that, in these non-Western settings, the values traditionally associated with younger generations may not necessarily translate into greater EC. Factors such as cost-benefit analysis and cost-effectiveness considerations, which may be more relevant to older and more experienced consumers could be also a possible explanation of the outcome which future research should explore. The findings contradict (Alanichamy et al., 2024; Djafarova and Foots, 2021; Zaman et al., 2023), but align with (Flores-Zamora et al., 2019; Zeynalova and Namazova, 2022).

The findings of this study challenge the applicability of the generational theory in explaining SCI within non-Western contexts. While generational theory posits that younger cohorts are more inclined towards pro-environmental behaviours due to their formative experiences with global environmental movements (Edmunds et al., 2005; Mannheim, 1997), the data from Morocco contradicts this assumption. Instead, older respondents exhibited a stronger inclination towards sustainable practices. It could also suggest that local cultural or historical factors may have a more substantial influence than generational influence alone. However, this may also indicate that the way age groups were divided in the research was not well-suited to this specific context. It could be possible that different generations divide within Morocco may reveal more insights. Therefore, future studies should consider revisiting the age and generational classifications used when examining age as a predictor of SCI, with a deeper examination of local age dynamics.

*H*4 proposed that "higher EC positively influence ISET". EC demonstrates a significant positive relationship with ISET on both Israel and the UAE (See Table 8) at a very high significant level (p < 0.001), indicating that individuals with stronger EC are more likely to express intentions to engage in sustainable behaviours. The findings from the Morocco's regression analysis do not demonstrate a significant correlation, suggesting that the relationship between EC and ISET may not be as pronounced in this cultural or economic context. As a result, there isn't strong statistical evidence for mediation due to the lack of consistent significant effects across all pathways required for mediation analysis. When regression was conducted with the mediator variable, it was revealed that none of the socio-demographics are significant predictors of ISET. Similar to previous studies presented in the literature review, that found EC to be strong predictors of SCI, this study also highlights its importance, however, it may be limited to specific socio-cultural or economic settings.

Within Israel and the UAE, EC becomes a key predictor of ISET, which diminish the role of most socio-demographics factors. The results suggest a strong presence of post-materialist values in the UAE and Israel, characterized by more environmentally conscious consumerism.

Israel's GDP per capita is $55,000, UAE's is $46,877, and Morocco's $3,672, (World Bank Open Data, 2024). These results might indicate a much success of post-materialist values in the UAE and Israel, based on a higher prioritization of environmentally-friendly consumer choices. However, revisiting the constructs developed, the higher Cronbach's alpha values in Israel and the UAE indicate a greater internal consistency and reliability of the measures used, reflecting a stronger validity of the construct compare to Morocco.

In the UAE, the impact of EC on ISET could be attributed to major national policies being promoted in the UAE as part of its transition from fossil-fuels economy. Looking at the UAE Energy Strategy for 2050 as well as its National Climate Change Plan, the country exhibit strategic commitment to sustainability. Those programmes, demonstrate comprehensive approach to integrate environmental considerations into economic and social development. This top-to-bottom approach to sustainability could probably enhanced the public's consciousness of the issue, thereby establishing a social norm that considers environmental conservation to be a part of consumption considerations. The data may also suggest that individuals SCI may drive by two factors - by both personal values and the external support provided by government policies. Israel's circumstances present a scenario that is similar but different from the UAE. Israel, which is known for its startup-ecosystem and environmental innovation, especially in water management, renewable energy, and sustainable agriculture (Innovation Authority, 2024) can be a source of greater awareness and consciousness among individuals, which also influence their consumptions decisions.

The regression analysis also revealed that other socio-demographic predictors have influence on both EC and ISET in specific contexts. Employment status is negatively correlated with ISET ($\beta=-0.374$ $p<0.05$) in Israel, suggesting that individuals who are at the higher values of employment (Including part time employees, self-employed) are more likely to be in higher categories of ISET. This inverse relationship may be attributed to the constraints or competing priorities associated with employment that could diminish the focus sustainability. Furthermore, there is a statistically significant positive relationship between educational attainment and EC ($\beta = 0.325$, $p< 0.05$) in Morocco. This relationship suggests that educational opportunities may enhance individuals' understanding and engagement with sustainability, potentially due to increased awareness and access to information at higher education institutions.

Consequently, there is a need to further exploration the potential impact of other factors on ISET. Specifically, factors such as access and availability, cost-benefit considerations, or social influences may play a significant role and warrant investigation in future studies. Overall, The study reveals that socio-demographics variable play a marginal role of individual outcomes across the UAE, Morocco, and Israel. Future studies could examine more-in depth other factors which could influence the outcomes of green intentions.

Several research implications that warrant further exploration. First, the use of EC as a multi-dimensional construct, needs deeper investigation. Future research should examine and evaluate different and additional factors that should be encompassed in this construct to strengthen the credibility and reliability of it in different contexts and geographical locations. This construct not only should be evaluated again on socio-demographics factors but also on more potential factors like contextual and cognitive factors (e.g. people who live in urban areas vs rural areas settings and religious values). For example, specifically explore how Judaism, Islam and Christianity may shape different attitudes among followers towards environmentalism. The fact that Morocco is a predominantly Muslim country, Israel has a majority Jewish population, and the UAE is more religiously diverse may influenced how constructs reliability among the different contexts. This ideas, can enrich the literature on EC and its multidimensional levels, and eventually draw broader conclusions on research and practice. Another implication for research is to integrate more domains of sustainable consumption to measurement. Many previous studies have focused on a single domain of sustainable consumption (e.g. organic food, energy usage, or water saving). this study tried to take a different approach by try to explain two distinct domains within the same construct. This dual focus should encourages researchers to identify new areas within sustainable consumption, and try to conceptualise them into multi-dimensional constructs. By combining different domains, researchers can draw more comprehensive and meaningful conclusions.

The findings from this research suggest that policy interventions need to be tailored to the specific socio-cultural contexts to effectively increase EC and energy transition. In Morocco, the gender gap of ISET highlights the need to raise more environmental awareness among females. However, the unique cultural and legal settings, which has central element of patriarchal hierarchy, may hinder financial decisions and means from women (Herouach, 2020) should be acknowledged. Instead of direct policies, civil societies organisations (e.g. NGOs, CBOs and NPOs) should take more active role in empowering women, with an emphasis on environmentalism. Furthermore, because educational attainment was revealed as a statistically significant predictor of EC, there is a need to invest more in education to create awareness, with an emphasis on climate and sustainability. These targeted policy interventions not only address immediate socio-cultural challenges, but also align with the UN SDGs, particularly SDG 5 on Gender Equality, and SDG 12 on Responsible Consumption and Production (UN SDGs, 2015).

Several policies and collaboration initiatives should be considered based on the research findings. Encouraging regional collaboration among the MENA countries could significantly increase the effectiveness of national policies. The Abraham Accords, which include Morocco, the UAE, and Israel, provide a remarkable opportunity for advancing climate change mitigation efforts. These accords present a valuable opportunity for the MENA countries to collaborate in addressing their shared challenges, while simultaneously contributing to global climate mitigation efforts. Furthermore, better integration of sustainable energy and

transportation development into policy frameworks can help decrease air pollution and conserve national resources. Incentives for research and development, as well as the promotion of sustainable products and services, will help enhance public engagement with more sustainable practices.

The research may offer some practical implications to private-market players. Specifically, the need for businesses to adopt more localized strategies. Conventional marketing tactics, which often segment consumers based on socio-demographic factors like income or age, may not be universally effective in contexts such as Morocco, UAE, and Israel. This suggests that businesses should consider to pivot towards understanding the specific cultural values or social norms, involved in shaping consumers intentions and behaviours in those countries. For instance, marketing strategies that emphasize culturally relevant narratives, may resonate more deeply with local individuals. Furthermore, the prominence of EC as a key driver of SCI in the UAE and Israel, presents an opportunity for private-market players to launch marketing initiatives that focus on value creation. These initiatives, should emphasize the benefits of products for both customers and the environment, thereby enhancing their appeal and impact.

Limitations

This research is subject to several limitations. Firstly, being a cross-cultural study, a critical concern is whether the answers derived from distinct cultural groups can be consistently interpreted across these groups. The concepts of bias and equivalence are central to this issue. Bias may arise from the theoretical framework underlying the construct, the methods used, including test administration procedures, and the specific content of test items. Equivalence, on the other hand, pertains to the extent to which measurements can be compared across different cultures. Specifically, in cross-cultural study, language barriers can present potential bias. Translations might not fully convey the actual meanings of the questions, potentially leading to misinterpretations and bias in data analysis (van de Vijver, 2004).

The selection method used, quota sampling, has limitations and inherent bias. Sampling bias arises when certain members of a population have no opportunity to be selected, resulting in skewed outcomes that fail to accurately reflect the broader population (Groves et al., 2009). Because the method relies on pre-defined quotas to represent specific subpopulations, it limits the generalizability of the findings. Consequently, it does not guarantee that every member of the target population had an equal chance of being selected. Certain segments of the population, particularly those not captured within the quotas or those less likely to participate in online surveys, might be underrepresented. Furthermore, the research sample is subject to another potential sampling bias. In this instance, the bias may originate from the use of respondents sourced from a survey firm's panel database, which restricted the equal chance of selection for every population member.

Due to the small sample size, it was difficult to control for other variables in the regression model that could also have an impact of the outcomes. There may be additional variables influencing the outcomes that were not accounted for in this research, such as religion, race, residential contexts and even marital status that was not collected in this research. Furthermore, variability in purchasing power across countries introduces bias in using income as a predictor variable as economies are different. For example, in the UAE, there is not tax on personal income. This policy, can lead more people to save an extra income, which will influence their purchasing power and the ability to consume things beyond regular needs. Additionally, in the UAE, where approximately eighty-eight percent of the population consists of expatriates, it is particularly difficult to represent Emirati nationals in the sample, given that they are a minority (CIA, 2024). Consequently, the research findings cannot be generalized to the Emirati population specifically, but rather to residents of the UAE as a whole. Furthermore, challenges in obtaining accurate income data and disparities between high and low-income countries complicate the analysis.

The use of Likert-scale questions in this research introduces several limitations in the research. Firstly, these scales are prone to response biases, which can lead to skewness in the survey results and, consequently, impact the validity of the findings (Westland, 2022). The presence of negative skewness in specific questions, indicates a concentration of favourable responses. This skewed distribution may not accurately represent the full spectrum of opinions within the broader population, thereby limiting the generalizability of the study's conclusions.

The low Cronbach's alpha, in the EC construct which is below 0.6 for Morocco (See Table 4), may also indicates a limitation in the internal consistency of a set of items within a scale or test. This suggests, that the items may not be reliably measuring the same underlying construct in each country, leading to some concerns about the scale's overall reliability. Additionally, a low Cronbach's alpha could limits the generalizability of the findings, as the measurement tool may not perform consistently across different populations or contexts. The applicability across different cultural contexts might need further exploration. Further search, could explore new constructs that are specifically tailored to the cultural and environmental context of the MENA region.

Another limitation of this study is the constructs that were used. The construct of ISET, which was developed using only four items, may not fully cover the broader spectrum of SCI. The reliance on just four items and one construct overall, could limit the construct's ability to accurately reflect the complexity of factors influencing individuals' SCI. Consequently, this might have led to an oversimplification, potentially affecting the robustness of the findings and their applicability to different contexts. Future research should aim to expand the ISET construct to encompass a broader spectrum of behaviours and attitudes, thereby providing a more comprehensive framework for understanding sustainable consumer intentions. Moreover, integrating a wider array of constructs in subsequent studies could enhance the

robustness and comprehensiveness of the findings, facilitating a more nuanced exploration of the variables that influence sustainability-related decision-making.

In both Morocco and Israel, approximately ten percent of the population lacks internet access (World Bank, 2023), making this segment of the population inaccessible for online surveys and digital data collection. This limitation presents a potential gap in the research, as the attitudes and behaviours of individuals without internet access may diverge from those with access. As a result, it may introduce a potential bias and impact the overall representativeness and generalizability of the research's findings. Considering alternatives methods for data collection within this context, should be prioritized in future studies.

Conclusions

Sustainable consumption is an emerging field of study which continue to capture the interest of social scientists in sustainability and management studies. These scholars want to understand better human interaction with sustainable practices. Although the field has gained significant attraction among Western scholars, it is still under-explored field in various countries and territories. This research explored how socio-demographic factors influence individuals' intentions to shift sustainable energy and transportation in Morocco, the UAE, and Israel. To do so, it has utilized an online survey-questionnaire, quota sampling, and multiple regression analysis. The research revealed that age, gender, and income, were not strong predictors of ISET in most countries examined. This aligns with prior studies suggesting that socio-demographics alone are not significant explanatory variables for SCI and intentions in the MENA region, which attitudes and social norms and EC were found to be stronger predictors.

However, the research revealed some important exceptions was observed in the UAE, where higher-income adults demonstrated a higher likelihood of ISET and EC compared to lower-income adults. This suggests that income, particularly within a specific cultural and economic context, may play a more nuanced role than previously assumed. In Morocco, the research findings indicate that higher levels of educational attainment are positively associated with EC. Additionally, older age groups and male respondents in Morocco are more likely to demonstrate stronger ISET. These findings within the Moroccan context suggest the need for further investigation to better understand these deviations from expected patterns.

The insights, highlighted a need gap in identifying strong explanatory variables for SCI in the MENA. The absence of strong socio-demographic correlations suggests that other factors which were not tested may be more critical in influencing SCI regarding ISET. This factors may include cost-benefit considerations, government incentives, and public awareness campaigns, which could be more critical in influencing SCI. These variables were not examined in this research but should be explored in future studies.

The findings offer theoretical implications, particularly regarding the applicability of Western theories in the MENA region. The study revealed that major socio-cultural theories, may not provide a strong explanation like they do in Western contexts. This empirical testing of Ransome's (2005) affluence hypothesis may have broader implications for scholars seeking a theoretical framework for sustainability studies. Overall, the findings challenge the applicability of these theories, and suggest that context-specific approaches are necessary to fully understand the drivers of sustainability in different regions. The quota sampling method provided a practical approach for obtaining a diverse sample for comparative analysis among the three countries. However, its limitations are acknowledged, and future studies should improve generalizability by employing randomized sampling techniques to achieve a more representative sample.

Another implication, could be the post-materialism and economic prosperity and its influence in shaping SCI. In the UAE and Israel, where the regression test revealed EC is the strongest predictor of ISET ($p<0.001$), may point out to the notion that a nation financially stability and nation performance have a role in shaping EC that will results in more sustainable and ethical-based intentions. These findings are important because they suggest that long-term economic prosperity can improve not only the financial well-being of the country, but also the health if it's natural environment. Therefore, it is crucial to invest in Morocco economic development while simultaneously raising awareness of environmental issues.

Reflecting on the research process, a key challenge was navigating the cultural differences across the three countries studied. Translating survey questions into multiple languages and ensuring cultural relevance, taught me the importance of cultural sensitivity in cross-cultural research. The process also taught me to be more critical of research involving individuals from different contexts and informed me the necessity of conducting a pre-test before distributing my survey. This experience also informed me the value of flexibility in research process. When faced with data inconsistencies during the pilot phase, instead of keeping the original plan, the survey questions were revised based on feedback. This emphasised the importance that effective research is not just about collecting data but also about being open to learning from the process and willing to make necessary adjustments. Ultimately, this research has deepened my appreciation for the complexities of human behaviour. For instance, the questions designed to measure EC in English may did not resonate the same way in Arabic or Hebrew due to differing cultural understandings.

Given that socio-demographic factors alone were weak predictors of SCI in this study, a new hypothesis for future research could explore whether behavioural interventions, explained by the nudge theory (Richard Thaler et al., 2008) or informational campaigns, may more effectively drive SCI in non-western contexts. For example, comparing the impact of different intervention strategies on consumer intentions across diverse socio-economic contexts, can provide extra insights. Future research should also delve into the governmental factors that may drive SCI in those countries. For example, government awareness campaigns, policies or

direct incentives can encourage individuals to consume more sustainably. Additionally, it could study the economic structure of each country (e.g. Capitalism vs Socialism) in sustainable consumption patterns. Researchers also should extra factors such as credit scores and financial services within each country and how these influence consumers' decisions to spend more on eco-friendly products.

This research highlighted the need to re-think the application of Western theories, and possibly developing new frameworks that could explain the differences observed in this research. One example for a method that would provide deeper insights could be longitudinal study. This method, unlike the cross-sectional study used in this research, could be a useful tool for studying how these individuals' attitudes evolve and change over time and how they respond to different interventions. Additionally, qualitative or a mixed-method study could complement this work by exploring the life experiences of individuals, and how these shape their sustainable behaviours, which will offer a richer, more compressive understanding of the factors involved. The use of those methods in future research, will also address another conceptual gap in the current literature of sustainable consumption due to its primary focus on quantitative research.

Appendices

Appendix 1: Ethical approval

IGP Ethics Review Confirmation

⊗ Torres Pinedo, Mara <m.torrespinedo@ucl.ac.uk>   Friday, 7 June 2024 at 16:04

Cc: ⊕ Sehlikoglu, Sertac; He, Yuan ⌃

  ♀ This message is high priority.

Email sent on behalf of Dr Sertaç Sehlikoglu, IGP Ethics Chair.

Dear MSc Prosperity, Innovation and Entrepreneurship student,

I am pleased to confirm, in my capacity as Chair of the IGP's Local Research Ethics Committee (LREC), that the **IGP LREC has Approved your MSc Ethics Application.**

Additionally, we would like to remind you that it if you are conducting research abroad it is the institute's policy for the researchers to receive approval to their risk assessments, before their departure. This approval is signed off by your supervisor.

Please do not hesitate to contact me in the future regarding any questions raised related to this.

Yours Sincerely,

Dr Sertaç Sehlikoglu
IGP Ethics Chair

Appendix 2: Survey-questionnaire

DEMOGRAPHICS QUESTIONS	DEMOGRAPHIC SURVEY QUESTIONS
IN WHICH COUNTRY ARE YOU CURRENTLY RESIDING?	UAE Morocco Israel Other
WHICH OF THESE DESCRIBES YOUR AVERAGE YEARLY PERSONAL INCOME (MAD)?	50,000 MAD or less 50,000 - 100,000 MAD 100,000-140,000 MAD 140,000-200,000 MAD 200,000 MAD or more
WHICH OF THESE DESCRIBES YOUR AVERAGE ANNUAL INCOME (ISRAELI SHEKELS)?	Less than 50,000 AED 50,000 - 100,000 AED 100,000 - 150,000 AED 150,000 - 200,000 AED 200,000 AED or more
WHICH OF THESE DESCRIBES YOUR AVERAGE ANNUAL INCOME (ISRAELI SHEKELS)?	Les than 71,000 ILS 71,000 - 150,000 ILS 150,000 - 220,000 ILS 230,000 - 300,000 ILS 300,000 ILS or more
WHAT IS YOUR AGE GROUP?	18-24 25-34 35-44 45-54 Above 54
WHAT BEST DESCRIBE YOUR GENDER?	Male Female Prefer not to say
WHAT IS YOUR CURRENT EMPLOYMENT STATUS?	Full-time employment Part-time employment Self-employed Unemployed Student Retired
WHAT IS YOUR HIGHEST QUALIFICATION?	Less than high school diploma High school diploma or equivalent degree No degree Bachelor's degree Master's degree and above

QUESTIONNAIRE	
HOW WOULD YOU RATE YOUR KNOWLEDGE OF ENVIRONMENTAL ISSUES	Very limited limited Neutral Profound Very profound

HOW CONCERNED ARE YOU ABOUT THE IMPACTS OF CLIMATE CHANGE?	Not at all Slightly Moderately Very Extremely
HOW OFTEN DO YOU RESEARCH THE ENVIRONMENTAL IMPACT OF THE PRODUCTS YOU BUY?	Never Rarely Sometimes Often Always
HOW MUCH WOULD YOU CONSIDER YOURSELF ENVIRONMENTAL-FRIENDLY?	Not at all Slightly Moderately Very Extremely
WHICH OF THE FOLLOWING SUSTAINABLE TECHNOLOGIES ARE YOU FAMILIAR WITH?(SELECT ALL THAT APPLY)	Solar panels (photovoltaics) Wind turbines Electric and hybrid cars Hydrogen cars Geothermal Heating E-Scooters and E-Bikes Other (Please Specify)
HOW DID YOU BECOME AWARE OF THE THOSE TECHNOLOGIES? (SELECT ALL THAT APPLY)	Internet News outlets Social Media Academia Friends and Family Other (Please specify)
WOULD YOU BE OPEN SPENDING MORE ON ENVIRONMENTALLY-FRIENDLY TECHNOLOGIES?	Yes, definitely Yes, probably Unsure Probably not Definitely not
WHAT IS THE PRIMARY SOURCE OF ELECTRICITY IN YOUR HOUSEHOLD?	Grid electricity Solar panels Generator (diesel, gas, etc.) Other (please specify)
WOULD YOU BE INTERESTED IN PURCHASING A SHARE IN A SOLAR POWER PLANT TO GENERATE ELECTRICITY FOR YOUR HOME	Yes, definitely Yes, probably Unsure Probably not Definitely not Yes, definitely
WOULD YOU CONSIDER ALSO BUY AND INSTALL SOLAR PANELS IN YOUR HOME?	Yes, definitely Yes, probably Unsure Probably not Definitely not

WOULD YOU BUY A WIND TURBINE TO GENERATE ELECTRICITY AT YOUR HOME?	Yes, definitely Yes, probably Unsure Probably not Definitely not
WHAT IS YOUR PRIMARY MODE OF TRANSPORTATION?	Personal car (gasoline/diesel) Personal car (electric) Public transportation (bus, train, subway) Bicycle Ride-sharing Electric bikes or Electric scooters Other (please specify)
HOW LIKELY ARE YOU TO SWITCH TO A MORE SUSTAINABLE SOURCE OF TRANSPORTATION IN THE NEXT 3 YEARS	Yes, definitely Yes, probably Unsure Probably not Definitely not
HOW LIKELY ARE YOU TO SWITCH TO A MORE SUSTAINABLE SOURCE OF TRANSPORTATION IN THE NEXT 3 YEARS	Yes, definitely Yes, probably Unsure Probably not Definitely not
WOULD YOU BE OPEN TO SPEND MORE ON ECO-FRIENDLY TRANSPORT VEHICLE?	Extremely unlikely Somewhat unlikely Neither likely nor unlikely Somewhat likely Extremely likely
WHAT FACTORS WILL MOST INFLUENCE YOUR DECISION TO BUY AN ECO-FRIENDLY TRANSPORT VEHICLES?	Purchase price Availability of charging stations Environmental impact Maintenance costs Government incentives Long term cost-benefit
WHAT INCENTIVES WOULD MOST ENCOURAGE YOU TO ADOPT SUSTAINABLE TECHNOLOGIES? (SELECT ALL THAT APPLY)	Government subsidies Lower costs Tax relief Attractive financing programs Other (Please specify)

Appendix 3: Model summary list

COUNTRY	MODEL	R	R SQUARE	ADJUSTED R SQUARE	STD. ERROR OF THE ESTIMATE
Morocco	First	.429[a]	.184	.101	.75604
	Second	.497[a]	.247	.170	.59696
	Third	.431[a]	.185	.084	.76329
UAE	First	.429[a]	.184	.101	.75604

	Second	.497ᵃ	.247	.170	.59696
	Third	.431ᵃ	.185	.084	.76329
Israel	First	.474ᵃ	.225	.147	.66846
	Second	.364ᵃ	.133	.046	.70938
	Third	.364ᵃ	.133	.046	.70938

References

Aghahosseini, A., Bogdanov, D., and Breyer, C. (2020). Towards sustainable development in the MENA region: Analyzing the feasibility of a 100% renewable electricity system in 2030. *Energy Strategy Reviews, 28*.

Akroush, M. N., Zuriekat, M. I., Al Jabali, H. I., and Asfour, N. A. (2019). Determinants of purchasing intentions of energy-efficient products: The roles of energy awareness and perceived benefits. *International Journal of Energy Sector Management, 13*(1), 128–148.

Alibeli, M. A., & White, N. R. (2011). Gender and environmental concerns in the Middle East. *Perspectives on Global Development and Technology*, 10(1), 156.

Allen, I. E., and Seaman, C. A. (2007). Likert scales and data analyses. *Quality Progress, 40*, 64–65.

Alsawafi, A. M., and Ghafri, N. A. (2023). The influence of religious commitment on eco-friendly travel intentions in the Middle East: The moderating role of gender and environmental knowledge. *International Journal of Leisure and Tourism Marketing, 8*(1), 53–80.

Alsmadi, S. (2007). Green marketing and the concern over the environment: Measuring environmental consciousness of Jordanian consumers. *Journal of Promotion Management, 13*(3-4), 339–361.

Alturif, G., and Saleh, W. (2023). Attitudes and behavior towards more sustainable travel options in the Kingdom of Saudi Arabia: An emerging social change? *Sustainability, 15*(16), 12548.

Anderson Jr, W. T., & Cunningham, W. H. (1972). The socially conscious consumer. *Journal of marketing*, *36*(3), 23-31.

Antinienė, D., Šeinauskienė, B., Rutelione, A., Nikou, S., & Lekavičienė, R. (2021). Do demographics matter in consumer materialism?. *Engineering Economics*, *32*(4), 296-312.

Arif, H. W. A., & Örs, A. P. D. M. (2019). Factors affecting green purchase intention for consumers in the moderation effect of price sensitivity. *International Journal of Latest Research in Engineering and Management 3*(10), 9-11

Babaei, A. A., Alavi, N., Goudarzi, G., Teymouri, P., Ahmadi, K., and Rafiee, M. (2015). Household recycling knowledge, attitudes and practices towards solid waste management. *Resources, Conservation and Recycling, 102*, 94-100.

Batterton, K. A., and Hale, K. N. (2017). The Likert scale: What it is and how to use it. *Phalanx, 50*(2), 32–39.

Bhattacherjee, A. (2012). *Social science research: Principles, methods, and practices*. University of South Florida.

Boone Jr, H. N., and Boone, D. A. (2012). Analyzing Likert data. *The Journal of Extension, 50*(2), 48.

Bricker, J., Krimmel, J., and Ramcharan, R. (2021). Signaling status: The impact of relative income on household consumption and financial decisions. *Management Science, 67*(4), 1993-2009.

Buckingham, S. (2015). Ecofeminism. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (2nd ed., pp. 845–850). Elsevier.

Bulut, Z. A., Kökalan Çımrin, F., and Doğan, O. (2017). Gender, generation, and sustainable consumption: Exploring the behavior of consumers from Izmir, Turkey. *International Journal of Consumer Studies, 41*(6), 597–604.

Casalegno, C., Candelo, E., and Santoro, G. (2022). Exploring the antecedents of green and sustainable purchase behavior: A comparison among different generations. *Psychology & Marketing, 39*(5), 1007–1021.

Central Intelligence Agency. (n.d.). The World Factbook: United Arab Emirates - People and Society. Central Intelligence Agency. https://www.cia.gov/the-world-factbook/countries/united-arab-emirates/#people-and-society

Chaudhry, A.-G., Masoumi, H., and Dienel, H.-L. (2023). A systematic literature review of mobility attitudes and mode choices: MENA and South Asian cities. *Frontiers in Sustainable Cities, 4*, Article 1085784.

Cillo, V., Petruzzelli, A. M., Ardito, L., and Del Giudice, M. (2019). Understanding sustainable innovation: A systematic literature review. *Corporate Social Responsibility and Environmental Management, 26*(5), 1012–1025.

Connelly, L. M. (2016). Cross-sectional survey research. *Medsurg Nursing, 25*(5).

Costanza, D. P., Badger, J. M., Fraser, R. L., Severt, J. B., & Gade, P. A. (2012). Generational differences in work-related attitudes: A meta-analysis. *Journal of business and psychology*, 27, 375-394.

Dagher, G., Itani, O. S., & Kassar, A. N. (2015). The impact of environment concern and attitude on green purchasing behavior: Gender as the moderator. *Contemporary Management Research 11(2): 179-206*

De Witte, H. (2004). Ideological orientation and values. In C. D. Spielberger (Ed.), *Encyclopedia of Applied Psychology*(pp. 249–258). Elsevier.

Diprose, K., Valentine, G., Vanderbeck, R. M., Liu, C., and McQuaid, K. (2019). Building common cause towards sustainable consumption: A cross-generational perspective. *Environment and Planning E: Nature and Space, 2*(2), 203–228.

Djafarova, E., and Foots, S. (2022). Exploring ethical consumption of generation Z: Theory of planned behavior. *Young Consumers, 23*(3), 413–431.

Du, M., Zhang, W., Zhang, X., and Liu, Y. (2022). Towards sustainable development in China: How do green technology innovation and resource misallocation affect carbon emission performance? *Frontiers in Psychology, 13*, Article 929125, 1-13.

Duroy, Q. M. (2008). Testing the affluence hypothesis: A cross-cultural analysis of the determinants of environmental action. The Social Science Journal, 45(3), 419-439.

Edmunds, J., and Turner, B. S. (2005). Global generations: Social change in the twentieth century. *The British Journal of Sociology, 56*(4), 559–577.

Edwards, J. R. (2001). Multidimensional constructs in organizational behavior research: An integrative analytical framework. *Organizational Research Methods, 4*(2), 144–192.

Elhoushy, S., and Lanzini, P. (2021). Factors affecting sustainable consumer behavior in the MENA region: A systematic review. *Journal of International Consumer Marketing, 33*(3), 256–279.

Ellen, P. S., Wiener, J. L., & Cobb-Walgren, C. (1991). The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. *Journal of public policy & marketing*, *10*(2), 102-117.

Elsantil, Y. (2021). Antecedents of green purchasing behavior in the Arabic gulf. *Social Marketing Quarterly, 27(2)*, 133-149.

Etikan, I., Musa, S. A., and Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1–4.

Etukudoh, E. A., Appiah, P., Annan, J. K., and Olarewaju, O. A. (2024). A review of sustainable transportation solutions: Innovations, challenges, and future directions. *World Journal of Advanced Research and Reviews, 21*(1), 1440–1452.

France, A., and Roberts, S. (2015). The problem of social generations: a critique of the new emerging orthodoxy in youth studies. *Journal of Youth Studies, 18*(2), 215-230.

Francis, D., and Fonseca, R. (2024). Recent and projected changes in climate patterns in the Middle East and North Africa (MENA) region. *Scientific Reports, 14*(1), Article 10279.

Gobo, G. (2004). Sampling, representativeness, and generalizability. *Qualitative Research Practice, 405*, 426.

Griskevicius, V., Tybur, J. M., and Van den Bergh, B. (2010). Going green to be seen: status, reputation, and conspicuous conservation. *Journal of Personality and Social Psychology, 98*(3), 392.

Groves, R. M. (2009). *Survey methodology* (2nd ed.). Wiley.

Gudmundsson, H., Höjer, M., Canal, C., Benner, J., Givoni, M., and Søreide, E. (2016). *Sustainable transportation*. Springer-Verlag.

Guo, R., Lv, S., Liao, T., Xi, F., Zhang, J., Zuo, X., and Zhang, Y. (2020). Classifying green technologies for sustainable innovation and investment. *Resources, Conservation and Recycling, 153*, 104580, 1-13.

Haj-Salem, N. (2024). Determinants of consumer intention to purchase fair trade products in the Middle East: Does gender matter? *Social Marketing Quarterly, 30*(1), 19–42.

Heo, C. Y., Kim, B., Park, K., and Back, R. M. (2022). A comparison of Best-Worst Scaling and Likert Scale methods on peer-to-peer accommodation attributes. *Journal of Business Research, 148*, 368-377.

Herouach, S. (2020). Patriarchy and Spinsterhood in Morocco, Faculty of Letters and Human Sciences, Dher el Mehrez, Fes, as a Case Study. International Journal of Contemporary Research and Review 11(8), 21711-21736.

Höhne, J. K., Krebs, D., and Kühnel, S. M. (2021). Measurement properties of completely and end-labeled unipolar and bipolar scales in Likert-type questions on income (in)equality. *Social Science Research, 97*, 102544.

Höhne, J. K., Krebs, D., and Kühnel, S. M. (2022). Measuring income (in)equality: Comparing survey questions with unipolar and bipolar scales in a probability-based online panel. *Social Science Computer Review, 40*(1), 108–123.

Hojnik, J., Ruzzier, M., and Manolova, T. S. (2020). Sustainable development: Predictors of green consumerism in Slovenia. *Corporate Social Responsibility and Environmental Management, 27*(4), 1695–1708.

Howell, N. R. (1997). Ecofeminism: What one needs to know. *Zygon, 32*(2), 231–241.

Hume, M. (2010). Compassion without action: Examining the young consumers' consumption and attitude to sustainable consumption. *Journal of World Business, 45*(4), 385–394.

Iliyasu, R., and Etikan, I. (2021). Comparison of quota sampling and stratified random sampling. *Biometrics & Biostatistics International Journal, 10*(1), 24–27.

Inglehart, R. (1977). *The silent revolution: Changing values and political styles among Western publics*. Princeton University Press.

Israel Innovation Authority. (2023). ClimAtech Report. https://innovationisrael.org.il/wp-content/uploads/2023/12/climatech-engl.pdf

Ivanova, O., Flores-Zamora, J., Khelladi, I., and Ivanaj, S. (2019). The generational cohort effect in the context of responsible consumption. *Management Decision, 57*(5), 1162–1183.

Kabeyi, M. J. B., and Olanrewaju, O. A. (2022). Sustainable energy transition for renewable and low-carbon grid electricity generation and supply. *Frontiers in Energy Research, 9*, Article 743114.

Karakosta, C., Doukas, H., and Psarras, J. (2010). Technology transfer through climate change: Setting a sustainable energy pattern. *Renewable and Sustainable Energy Reviews, 14*(6), 1546–1557.

Kim, N., and Lee, K. (2023). Environmental consciousness, purchase intention, and actual purchase behavior of eco-friendly products: The moderating impact of situational context. *International Journal of Environmental Research and Public Health, 20*(7), 5312.

Kinnear, T. C., Taylor, J. R., and Ahmed, S. A. (1974). Ecologically concerned consumers: Who are they? *Journal of Marketing, 38*(2), 20–24.

Klein, S. J. W., and Coffey, S. (2016). Building a sustainable energy future, one community at a time. *Renewable and Sustainable Energy Reviews, 60*, 867–880.

Klein, S. J., and Coffey, S. (2016). Building a sustainable energy future, one community at a time. *Renewable and Sustainable Energy Reviews, 60*, 867-880.

Krass, D., Nedorezov, T., and Ovchinnikov, A. (2013). Environmental taxes and the choice of green technology. *Production and Operations Management, 22*(5), 1035–1055.

Kuchinka, D. G., Balazs, S., Gavriletea, M. D., & Djokic, B. B. (2018). Consumer attitudes toward sustainable development and risk to brand loyalty. *Sustainability, 10(4),* 997.

Laheri, V. K., Lim, W. M., Arya, P. K., and Kumar, S. (2024). A multidimensional lens of environmental consciousness: Towards an environmentally conscious theory of planned behavior. *Journal of Consumer Marketing, 41*(3), 281–297.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*.

Lusky, R. (1975). Consumers' preferences and ecological consciousness. *International Economic Review*, 188-200.

Mannheim, K. (1997). *Collected works of Karl Mannheim*. Routledge.

Masoumi, H. E. (2019). A discrete choice analysis of transport mode choice causality and perceived barriers of sustainable mobility in the MENA region. *Transport Policy, 79*, 37–53.

Mehrad, A., and Zangeneh, M. H. T. (2019). Comparison between qualitative and quantitative research approaches. *International Journal for Research in Educational Studies, 5*(7), 1–7.

Milfont, T. L., and Markowitz, E. (2016). Sustainable consumer behavior: A multilevel perspective. *Current Opinion in Psychology, 10*, 112–117.

Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People, 9*(4), 50–79.

Mohamed, M. A., Chymis, A., and Shelaby, A. A. (2012). Determinants of organic food consumption in Egypt. *International Journal of Economics and Business Modeling, 3*(3), 183-191.

Moisander, J., and Pesonen, S. (2002). Narratives of sustainable ways of living: Constructing the self and the other as a green consumer. *Management Decision, 40*(4), 329–342.

Moss, S. (2010). Generational cohort theory. *Psychlopedia, Key Theories, Developmental Theories*.

Mostafa, M. M. (2006). Antecedents of Egyptian consumers' green purchase intentions: A hierarchical multivariate regression model. *Journal of international consumer marketing, 19(2)*, 97-126.

Mostafa, M. M. (2006). Antecedents of Egyptian consumers' green purchase intentions: A hierarchical multivariate regression model. *Journal of International Consumer Marketing, 19*(2), 97–126.

Mostafa, M. M. (2016). Egyptian consumers' willingness to pay for carbon-labeled products: A contingent valuation analysis of socio-economic factors. *Journal of Cleaner Production, 135*, 821-828.

Mourad, M., and Serag Eldin Ahmed, Y. (2012). Perception of green brand in an emerging innovative market. *European Journal of Innovation Management, 15*(4), 514–537.

Muhammad, S., Fathelrahman, E., and Ullah, R. U. (2015). Factors affecting consumers' willingness to pay for certified organic food products in United Arab Emirates. *Journal of Food Distribution Research, 46*(1), 37-45.

Mulder, K., Ferrer, D., and Van Lente, H. (2017). *What is sustainable technology?: Perceptions, paradoxes and possibilities*. Routledge.

Murairwa, S. (2015). Voluntary sampling design. *International Journal of Advanced Research in Management and Social Sciences, 4*(2), 185–200.

Ottesen, A., Banna, S., and Alzougool, B. (2022). Attitudes of drivers towards electric vehicles in Kuwait. *Sustainability, 14*(19), 12163.

Öztürk, Y. M. (2020). An overview of ecofeminism: Women, nature, and hierarchies. *Journal of Academic Social Science Studies, 13*(81).

Pakpour, A. H., Zeidi, I. M., Emamjomeh, M. M., Asefzadeh, S., and Pearson, H. (2014). Household waste behaviors among a community sample in Iran: An application of the theory of planned behavior. *Waste Management, 34*(6), 980-986.

Palanichamy, S., Mohanty, P., and Kennell, J. (2024). Shared mobility and India's Generation Z: Environmental consciousness, risks, and attitudes. *Sustainability, 16*(12), 5258.

Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. Routledge.

Parzonko, A. J., Balińska, A., and Sieczko, A. (2021). Pro-environmental behaviors of Generation Z in the context of the concept of homo socio-oeconomicus. *Energies, 14*(6), 1597.

Pedhazur, E. J., and Schmelkin, L. P. (1991). *Measurement, design, and analysis: An integrated approach* (1st ed.). Psychology Press. https://doi.org/10.4324/9780203726389

Plavsic, S. (2013). An investigation of gender differences in pro-environmental attitudes and behaviors.

Prikshat, V., Patel, P., Kumar, S., Gupta, S., & Malik, A. (2024). Role of socio-cultural capital and country-level affluence in ethical consumerism. Journal of Business Ethics, 1-15.

Ransome, P. (2005). *Work, consumption and culture: Affluence and social change in the twenty-first century*. Sage.

Rezaei, R., and Ghofranfarid, M. (2018). Rural households' renewable energy usage intention in Iran: Extending the unified theory of acceptance and use of technology. *Renewable Energy, 122*, 382–391.

Sachdeva, S., Jordan, J., & Mazar, N. (2015). Green consumerism: moral motivations to a sustainable future. Current Opinion in Psychology, 6, 60-65.

Sakellari, M., and Skanavis, C. (2013). Environmental behavior and gender: An emerging area of concern for environmental education research. *Applied Environmental Education & Communication, 12*(2), 77–87.

Schlegelmilch, B. B., Bohlen, G. M., and Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European Journal of Marketing, 30*(5), 35–55.

Smajic, H., Knezović, E., and Hamarsheh, A. G. Y. (2024). The role of demographics in green purchase intentions: Evidence from Jordan, the United Arab Emirates, and the Kingdom of Saudi Arabia. *Journal of Economics, Law, and Society, 1*(1), 23–38.

Sovacool, B. K., Turnheim, B., Martiskainen, M., Brown, D., and Green, A. (2022). Equity, technological innovation and sustainable behavior in a low-carbon future. *Nature Human Behaviour, 6*(3), 326–337.

Strieder Philippssen, J., Soares Angeoletto, F. H., and Santana, R. G. (2017). Education level and income are important for good environmental awareness: A case study from south Brazil. *Ecología Austral, 27*(1), 39–44.

Summers, N. (2016). Ethical consumerism in global perspective: A multilevel analysis of the interactions between individual-level predictors and country-level affluence. Social Problems, 63(3), 303–328.

Tamer, A. (2011). Environmental segmentation alternatives: Buyers' profiles and implications. *Journal of Islamic Marketing, 2*(1), 55–73.

Tanujaya, B., Prahmana, R. C. I., and Mumu, J. (2022). Likert scale in social sciences research: Problems and difficulties. *FWU Journal of Social Sciences, 16*(4), 89–101.

Thaler, R. H., and Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.

Trudel, R. (2019). Sustainable consumer behavior. *Consumer Psychology Review, 2*(1), 85-96.

United Nations, Department of Economic and Social Affairs, Population Division. (2024). World Population Prospects. https://population.un.org/wpp/Download/Standard/Population/

United Nations. (n.d.). Sustainable Development Goals. United Nations. https://sdgs.un.org/goals

Van de Vijver, F., and Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *European Review of Applied Psychology, 54*(2), 119-135.

VanVoorhis, C. W., and Morgan, B. L. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutorials in Quantitative Methods for Psychology, 3*(2), 43–50.

Waha, K., Krummenauer, L., Adams, S., Aich, V., Baarsch, F., Coumou, D., and Schleussner, C. F. (2017). Climate change impacts in the Middle East and Northern Africa (MENA) region and their implications for vulnerable population groups. *Regional Environmental Change, 17*, 1623–1638.

Walaszczyk, A., Koszewska, M., & Staniec, I. (2022). Food traceability as an element of sustainable consumption—pandemic-driven changes in consumer attitudes. International Journal of Environmental Research and Public Health, 19(9), 5259.

Weber, R. J. (2015). Post-materialism and environmental values in developed vs. semi-developing countries: Analysis of Argentina and the United States using the World Values Survey.

White, K., Habib, R., and Hardisty, D. J. (2019). How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. *Journal of Marketing, 83*(3), 22-49.

Wicki, S., and Hansen, E. G. (2019). Green technology innovation: Anatomy of exploration processes from a learning perspective. *Business Strategy and the Environment, 28*(6), 970–988.

World Bank. (2021). Individuals using the Internet (% of population) - Israel. The World Bank. Retrieved August 10, 2024, from https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=IL

World Bank. (2022, February 7). MENA's polluted skies and seas hurt economies, livelihoods. The World Bank. Retrieved August 10, 2024, from https://www.worldbank.org/en/news/press-release/2022/02/07/mena-s-polluted-skies-and-seas-hurt-economies-livelihoods

World Bank. (n.d.). GDP per capita (US$). Dataset. The World Bank. https://data.worldbank.org/indicator/NY.GDP.PCAP.CD

Zaman, K. (2022). Which generation is more environmentally conscious? A comparative study of Generation Z & Millennial to predict the effect of digital ads on green buying decisions. *Business & Economic Review, 14*(2).

Zhu, O. Y., Greene, D., & Dolnicar, S. (2024). Should the risk of social desirability bias in survey studies be assessed at the level of each pro-environmental behaviour?. Tourism Management, 104, 104933.

Zuraidah, R., Hashima, H., Yahya, K., and Mohamad, S. (2012). Environmental conscious behavior among male and female Malaysian consumers. *OIDA International Journal of Sustainable Development, 4*(8), 55–64.