

CROSS-NATIONAL EXAMINATION OF CULTURAL VALUES,
BELIEF SYSTEMS AND SUSTAINABLE CONSUMER ATTITUDES
AND BEHAVIOURS

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Approval of the Board of Graduate Programs

Prof. Dr. Gürkan Karakaş

Chairperson

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

Assist. Prof. Dr. Carter Mandrik

Program Coordinator

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

Assist. Prof. Dr. Carter Mandrik

Supervisor

Examining Committee Members

Assist. Prof. Dr. Business Administration

Carter Mandrik METU Northern Cyprus Campus _____

Assoc. Prof. Dr. Business Administration

Oğuz Solyalı METU Northern Cyprus Campus _____

Prof. Dr. Assoc. Dean of Graduate School

Yeqing Bao University of Alabama in Huntsville _____

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Name, Last name : Anıl Berkin

Signature :

ABSTRACT

CROSS-NATIONAL EXAMINATION OF CULTURAL VALUES, BELIEF SYSTEMS AND SUSTAINABLE CONSUMER ATTITUDES AND BEHAVIOURS

Berkin, Anil

M.Sc., Department of Sustainable Environment and Energy Systems
Program

Supervisor: Assist. Prof. Dr. Carter Mandrik

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Since the 1970's concern about the environment has been growing and with this growth the concept of sustainability has started to become integrated into the business world. One of the main goals of sustainability is to meet full environmental costs of production and consumption to create a sustainable economy. Necessarily, behaviour of consumers also plays a role in sustainability. Sustainable consumption mainly focuses on the environmental impacts of consumers' habits, their food choices or their transportation. Research has shown that sustainability-relevant behaviours may be influenced by the cultural values and belief systems that consumers possess. Thus, differences in values and belief systems are important in understanding the adoption of a sustainable consumption lifestyle.

The present research attempts to understand whether and how the cultural values and belief systems affect sustainable consumption attitudes and behaviours. Specifically, it will examine the role of religiosity and spirituality, which past research has shown to be relevant to consumption practices generally. An online survey is used to collect data from participants from different backgrounds and cultures using multi-cultural organizations' Facebook groups, such as American Field Service. Results of the study show that religiosity and spirituality are related to sustainable consumption attitudes and behaviours. Outcomes of this thesis are believed to help better understanding of how religiosity relates to sustainability and the important role spirituality plays to studying sustainable consumption, and possible enhancements of sustainability marketing efforts.

Keywords: Sustainable Consumer Behaviour, Religiosity, Spirituality

ÖZ

KÜLTÜREL DEĞER, İNANÇ SİSTEMLERİ VE SÜRDÜRÜLEBİLİR TÜKETİCİ TUTUM VE DAVRANIŞLARININ ULUSLARARASI İNCELENMESİ

Berkin, Anil

Yüksek Lisans, Sürdürülebilir Çevre ve Enerji Sistemleri Programı

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1970'lerden beri çevre hakkındaki endişe büyümektedir ve bu büyümeyle sürdürülebilirlik kavramı iş dünyasına entegre edilmeye başlamıştır. Sürdürülebilirlik kavramının ana hedeflerinden biri de üretim ve tüketim esnasındaki çevre maliyetini karşılayabilen, sürdürülebilir bir ekonomi yaratmaktır. Sürdürülebilir tüketim, genellikle tüketicilerin alışkanlıklarının, yiyecek tercihlerinin veya ulaşım tercihlerinin çevreye verdiği etkiye odaklanmaktadır. Yapılan araştırmalara göre, sürdürülebilir tüketim davranışları, kültürel değerler ve tüketicilerin sahip olduğu inanç sistemlerinden de etkilenmektedir. Bu yüzden, sürdürülebilir bir hayat adaptasyonunda, kültürel değerlerdeki ve inanç sistemlerindeki farklılıklar önemlidir.

Bu araştırma, kültürel değer ve inanç sistemlerinin sürdürülebilir tüketici tutum ve davranışlarının etkisini anlamak için yazılmıştır. Özellikle, önceki araştırmalarda da bir etkisi olduğu ortaya çıkan, dindarlık ve tinsellik kavramlarının etkisi incelenecektir. Farklı geçmiş ve kültüre sahip katılımcılardan veri toplamak için, bir çevrim içi anket Facebook'taki uluslararası kültürlerden insanları barındıran gruplar, American Field Service grubu gibi, kullanılmıştır. Bu araştırmanın sonuçları dindarlık ve tinsellik kavramlarının, sürdürülebilir tutum ve davranışlarına nasıl bir etki yaptığını gösterir. Çıkan sonuçların, dindarlığın sürdürülebilirlik üzerinde etkisinin anlaşılmasına, tinselliğin oynadığı rolün öneminin anlaşılmasına ve sürdürülebilir pazarlama alanınının geliştirilmesi için yardımcı olacağı beklenmektedir.

Anahtar kelimeler: Sürdürülebilir tüketim davranışı, dindarlık, tinsellik

To my parents and friends

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LIST OF ABBREVIATIONS

- AFS: American Field Service
- CES: Consumer Ethics Scale
- CRS: Centrality of Religiosity Scale
- DSP: Dominant Social Paradigm
- DUREL: The Duke University Religion Index
- DV: Dependent Variable
- ER: Extrinsic Religiosity
- GDP: Gross Domestic Product
- GSS: General Social Survey
- GV: Grouping Variable
- IR: Intrinsic Religiosity
- IV: Independent Variable
- NEP: New Environmental Paradigm
- NGO: Non-Governmental Organization
- NORA: Non-organizational Religious Activity
- ORA: Organizational Religious Activity
- PCE: Perceived Consumer Effectiveness
- RCI-10: The Religious Commitment Inventory-10
- SCABs: Sustainable Consumer Attitudes and Behaviours
- SCAs: Sustainable Consumer Attitudes
- SCBs: Sustainable Consumer Behaviours
- STS: Spiritual Transcendence Scale
- VIF: Variance Inflation Factor

1. INTRODUCTION

The twentieth century has brought with it many problems, such as increased population, poverty, health, urbanization, resource depletion, ecosystem damage and climate change. These problems have led people, companies and governments to take corrective action. This so-called “Sustainability Revolution” can be mentioned as a reaction to the degradation of the environment brought about by the Industrial Revolution, and is led by individuals, governments, NGOs, and businesses; it can be seen as a new paradigm or worldview (Bridges and Wilhelm, 2008). The World Commission on Environment and Development defined sustainability in the 1987 Brundtland Report as “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*”

In today’s world, sustainability is a part of both managerial strategies, and consumer choice processes and education, as a result of an increasing awareness of environmental problems and social inequities over the last two decades (Bridges and Wilhelm, 2008). It is useful to examine sustainability by looking at it from two different perspectives: The first one is by analysing the implications for businesses – a managerial perspective - and the second is by analysing consumer demand, attitudes and behaviours related to sustainability – a consumer perspective.

Back in the 1970’s, marketing literature was introduced to sustainability and ecology. Kassarian’s research (1971), for example, focused on incorporating ecology into marketing strategy by investigating the reactions of consumers to environmental ads. However, during the last 20 years, interest in the sustainability phenomena increased rapidly. More and

more companies have been releasing sustainability reports, which include the firm's environmental, social and economic performances (Bridges and Wilhelm, 2008). A study conducted by Eccles et al. (2011) shows that companies that have sustainability goals are more long-term oriented, have stronger public relations and have better stock market and accounting performance. Sustainability is, because of studies like these, accepted as an indicator of success for organizations (Kuosmanen and Kuosmanen, 2009), as sustainability relevant goals reduce business risks and increase market opportunities (Kiewiet and Vos, 2007). Moreover, because there is a great amount of consumers who are "sustainability-driven", it is also important for brand equity and the organizations' reputation (Bansal, 2005). As such, corporate social responsibility creates a competitive advantage for businesses (Porter and Kramer, 2006), which is a base requirement in the 21st century (Charter et al., 2002).

To illustrate, most of the companies listed on Fortune's "Global 100 Most Sustainable Corporations" showed better performance than their less sustainable competitors (Nguyen and Slater, 2010). Moreover, a study by the National Environmental Education Foundation (2010) claims that sustainability can increase organizational profits by as much as 38%. One of the reasons why sustainable business practices make good economic sense is the fact that eco-efficiency strategies, which include waste minimization or reuse, pollution prevention and technological improvements are aiming both to reduce costs and to reduce environmental effects (Collins et al., 2009).

On the other side, many researchers have been analysing why consumers behave environmentally friendly or not. Since 1970's categorisations and profiles of so-called "green consumers" have been researched, which later on turned to topics like environmentally conscious

behaviours such as recycling (McDonagh and Prothero, 2014). Kinnear et al. (1974) conducted research which focused on the relationship between ecological concerns of consumers and their personalities. After 1990's the research on the demand side of sustainability related issues, like sustainable consumer behaviour, started to increase.

A recent Nielsen study conducted in 51 countries with 25,000 people showed that 66% of consumers care about climate change and global warming (Minton et al., 2015), which leads people to consider sustainability factors during the selection of goods. Many studies aim to understand why consumers engage in sustainable behaviours. Understanding individual consumer motivations can be challenging, yet it is very important. For instance, economic motivations like electricity saving might lead some consumers to engage in sustainable behaviours (Rettie et al., 2012), but some consumers also change their consumption practices because they believe they can make a difference in terms of sustainability and environmental issues (McDonagh and Prothero, 2014).

There is a general lack of research on intrinsic motivations concerning sustainable consumption behaviour; one exception is Minton et al. (2015)'s study which focuses on consumers' core values, which are rooted in fundamental belief systems, such as religion. Investigating foundational consumer motives like core values is important for understanding factors that affect adoption of sustainable behaviours (Minton et al., 2015). Studying the influence of religion and religiosity on sustainable consumer behaviours and attitudes provides a more holistic view on the phenomena and fills a scientific gap, as the nexus of religion and consumer behaviours is still underresearched (Minton et al., 2016). Moreover, many people regard themselves as spiritual, who are either religious or non-religious (Ball et al., 2001; Hill et al., 2000),

which has drawn an increasing attention of researchers who try to define and understand spirituality (Taylor, 2011). However, no past research on a possible research between spirituality and sustainability exists.

A central argument made in this thesis is that it may be possible to understand this nexus better by including spirituality in the investigation besides religion and religiosity. So, the purpose of this thesis is to gain a better understanding of sustainability-relevant consumer attitudes and behaviours by examining them in the context of religiosity and spirituality. In the next section of this thesis, sustainable consumption, sustainable consumer behaviour and the factors affecting consumer behaviour will be explained.

2. BACKGROUND OF SUSTAINABLE BEHAVIOUR

In this section, firstly, the definition of sustainable consumption will be stated, and the factors that may influence people's sustainable consumption patterns will be briefly explained. Why or why not people may choose sustainable consumer behaviours is explained using value systems, so the relationship between sustainable consumer behaviour and value systems will be mentioned in this section. Focusing mainly on value systems, sustainable consumers will be classified using different approaches in order to understand the main problem, which is the attitude-behaviour gap.

When past research is examined, many different terms describing similar phenomena can be seen, such as green consumption (Alfredsson, 2004; Charter et al., 2002; Gilg et al., 2005; Peattie, 2010), environmentally friendly consumerism (Alsmadi, 2007) or ecological consumer behaviour (Fraj and Martinez, 2006). Green consumerism has been defined as "*the use of individual consumer power to promote less environmentally damaging consumption, while still satisfying consumer wants and needs*" (Charter et al., 2002) and focuses mainly on behaviours like recycling, energy saving, and also how consumers react to advertisements (Peattie, 2010). Alsmadi (2007) defines environmental friendly consumerism as "*adopting a pattern of consumption behaviour that does not harm the environment*", and according to Fraj and Martinez (2006), ecological consumer behaviour refers to the behavioural component of the environmental attitude and knowledge.

Another term used widely by the United Nations is called "sustainable consumption." According to the 1994 Oslo Symposium, sustainable consumption is "*the use of services and related products which respond to*

basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations." The United Nations defines sustainable consumption as a wider concept. According to the sustainable development goals by the United Nations, the implementation of those goals helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty. In this thesis, "sustainability" refers to both the environmental welfare and social welfare characteristics of products and services. In the field of marketing, the research on sustainable consumption can be divided into two streams, which are sustainable consumer behaviour and ecological economics, which focuses on environmental and economic outcomes of behaviours (Peattie, 2010).

When it comes to making sustainability marketing decisions, investigation of socio-ecological problems and examination of consumer behaviour with special respect to socio-ecological characteristics are the key and the first steps, which helps marketers to aim at socio-ecologically concerned customer groups (Belz, 2006). These factors include consumers' motivations to choose sustainable products and services (Belz and Peattie 2013). Specifically, for sustainable consumption behaviours, it is essential to understand core values or foundational consumer motives (Minton et al., 2015). Past research examined both why people engage in sustainable consumer behaviours and why people engage in unsustainable consumer behaviours.

For example, according to McDonagh and Prothero (2014) consumer values may explain in part why people engage in unsustainable behaviours. Also, Taylor (1962) claims that people who follow hedonism and fatalism,

i.e. the view of only happiness and pleasure are the main motivations of people (Stanford Encyclopedia of Philosophy), and the view of humans have no power to influence the future, may explain why people do not behave in an environmentally friendly way. Other than values or beliefs like hedonism and fatalism, there are other reasons why people do not engage in sustainable consumer behaviours. For example, as sustainable products are generally more expensive and often have relatively limited distribution (Luchs et al., 2010), consumers may be more reluctant or unable to purchase them. Moreover, consumers may be sceptical about green claims, and might believe that environmental concerns are for the benefit of governments or businesses (Peattie, 2010).

Generally, since the 1970's studies have been trying to understand the characterization of the environmentally conscious consumers by focusing on their demographic, psychographic and personality profiles (Kilbourne and Beckmann, 1998). Demographic variables help to predict environmental knowledge and attitudes to some degree, but they are less able to account for environmental behaviour; thus, many studies use multivariate statistical analysis of both demographic and psychographic variables (Rettie et al., 2012). These studies try to understand and establish the relationship between social, environmental and ecological concerns and environmentally related behaviours like recycling or using environmental friendly products (Kilbourne and Beckmann, 1998).

For marketing field, in order to better assess the direction for future environmental research Stern et al. (1995) developed "The Causal Model of Environmental Research" (Figure 1). The framework is considered as useful to understand marketing/environment relationship and useful to understand what generally influences behaviours. The model consists of the cosmological

domain, socio-economic domain, value systems, general ecological view, beliefs and attitudes, behavioural intentions and behaviour, respectively, which shows mainly the factors that might affect our behaviours (Kilbourne and Beckmann, 1998). As the Causal Model of Environmental Research argues, it is important to realize that consumption is not only an economic phenomenon, but it is also a social and cultural process through which people express their identities and establish their place within society (Belz and Peattie, 2013). So, consumption is also affected by nature, geography, culture, psychology of people, circumstances, laws and politics (Peattie, 2010).

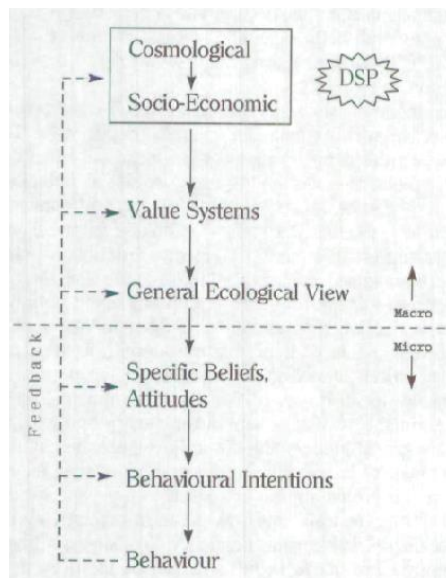


Figure 1: The Causal Model of Environmental Research (Stern et al., 1995)

According to Belz and Peattie (2013), similar to the general consumer behaviour decision making process, sustainable consumption process is explained in six stages:

Firstly, people start become aware of needs and wants, which include both basic human needs like food and clothing; and social belonging. The second stage is information search, in which consumers gain knowledge about products or services from different sources, like family or friends, advertising, on-pack information etc. These days, consumers are increasingly exposed to information about sustainability-related issues. Then, consumers evaluate alternatives before purchasing them. Sustainable-consumption oriented consumers generally differentiate sustainable goods and make comparisons between them and regular ones. Whether consumers are persuaded to change their purchasing behaviour and switch to more sustainable goods and services is considered as one of the key elements in sustainability marketing (Belz and Peattie, 2013). Most of the environmental impacts are generated during the usage of products or services, even more than the production or disposal phases (Belz and Peattie, 2013). After the usage, post-use is also important, which is rarely considered by mainstream marketing (Belz and Peattie, 2013). Yet, post-use stage is becoming more important, because of the role consumers play in determining sustainability impacts during the use and post-use stages, such as recycling.

However, past research has shown that there is a problem with turning environmental knowledge, strongly held environmental values and attitudes into pro-environmental behaviours because of the fact that social desirability bias lead people to over report pro-environmental attitudes (Peattie, 2010). So, although many people claim they are environmentally conscious and they care about environment, many studies have found that consumers have

difficulties in translating their environmental concerns into actions (Rettie et al., 2012). For example, the study conducted by the United Nations Environment Programme (2005) shows that although 40% of consumers claim to be interested in buying environmental friendly products, only 4% actually do so, which creates this large “*attitude-behaviour gap*” (Luchs et al., 2010).

Several explanations may be a reason for this gap: consumers themselves, habits, lifestyles, brand loyalties, uncertainties and so on (Rex and Baumann, 2006; Peattie, 2010). For example, willingness to pay extra for green products was less than predicted which results in the decrease of actual sales of green products reported by consumer surveys, which means when prices for sustainable products are higher, consumers are less likely to buy them and eventually consumers choose unsustainable products or services because of these extra costs (Rex and Baumann, 2006). Generally, to close this attitude-behaviour gap, people have to forgo convenience, costs or performance in their goods or services (Peattie, 2010).

Ajzen’s Theory of Planned Behaviour (Figure 2) may be helpful to understand this attitude-behaviour gap. According to the model, attitudes, subjective norms and perceived control determine intentions towards an act, which lead to a certain behaviour (Ajzen, 1991). According to the model, the central factor is individuals’ intentions to perform a certain behaviour. Influencing intention, perceived behavioural control, in other words self-efficacy, is described as “*people’s confidence in their ability to perform*” an act (Ajzen, 1991). Perceived behavioural control is affected by the perceived ease or difficulty of a certain behaviour and reveals past experience or expected obstacles (Ajzen, 1991). Other components of the model are attitude toward the behaviour, which actually means the degree to which an individual

has a favourable or unfavourable evaluation or appraisal of the behaviour in question, and subjective norm, which refers to social pressure for or against a behaviour (Ajzen, 1991). Beyond such factors, the theory of planned behaviour model also recognizes the impact of other variables like demographics, personality traits, religion or life values on a certain behaviour (Ajzen, 2015). According to Ajzen (2015), such variables are considered as background factors in the theory of planned behaviour and they are expected to affect behaviours indirectly on behavioural, normative and control beliefs, which are formed by expectancy, importance and probability, respectively. For example, behavioural beliefs depend on outcomes of certain behaviours of people, such as cutting sugar may result in weight loss. Normative beliefs are generally formed by being told what is important and what other people want us to do. Lastly, control beliefs are more about resources and obstacles that can facilitate a certain behaviour, such as skills, abilities, money and time. As Ajzen (2015) argued, religion and values coming from religion may be important factors affecting behaviours.

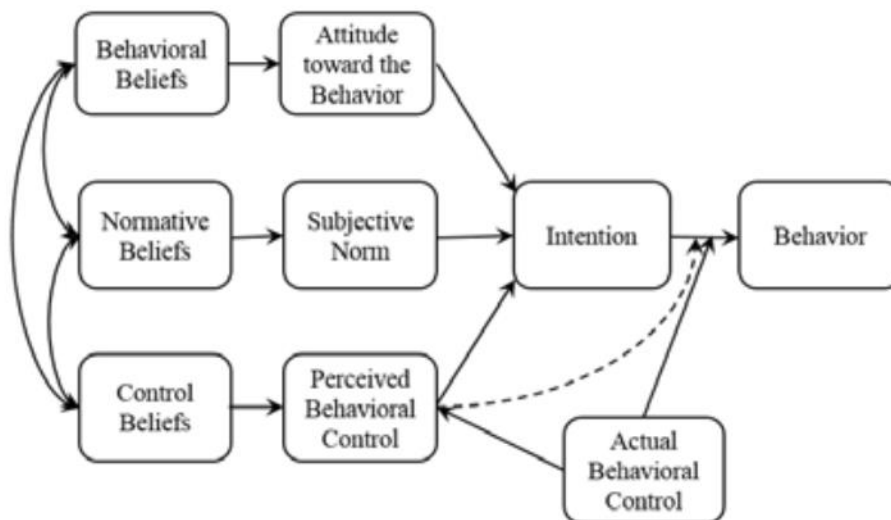


Figure 2: Ajzen's Theory of Planned Behaviour

As can be seen, consumption is a complex, diverse and context dependent process; thus, to have a better understanding of sustainable consumption and address this attitude-behaviour gap, studying various areas of marketing, understanding consumer wants, possible market opportunities and effects of promotional strategies are necessary (Rex and Baumann, 2006).

More specifically, sustainable consumption is strongly influenced by values, norms and habits (Peattie, 2010). Such consumption is explained by rational, psychological and sociological explanations (Belz and Peattie, 2013). Rational explanations focus on economic and performance factors of sustainable products or services, whereas psychological and sociological explanations studies values, attitudes and norms, which may be different in different geographies, cultures and even people (Belz and Peattie, 2013).

Similar to the explanations of Belz and Peattie (2013), Gilg et al. (2005) claim that three variables are influential in classifying the sustainable consumer, which also gives a clue for the question of what influences sustainable consumer behaviour. These three variables are socio-demographic and economic factors, psychological factors, and environmental values and concern. Research according to socio-demographic factors focus on features like age, sex, income or education and examines their relationship with environmentally friendly consumption. Research aiming at psychological factors looks for personal attitudes or personality traits which may have an influence on sustainable consumption. Lastly, there are investigations into environmental values and concern and sustainable consumption, examining values which may originate in culture (Gilg et al., 2005). These three variables will be explained respectively in the following section.

2.1. Socio-demographic and economic variables

Firstly, socio-demographic and economic variables are going to be examined. Starting from the stereotypical view about green consumers, how culture, social norms, gender, age and income levels affect sustainable consumption will be examined.

The stereotypical view still continues that says green consumers are young, female, educated, liberal and wealthy (Gilg et al., 2005). The influence of culture, shared meanings, social norms, routines and some tacit rules can be clearly seen on sustainable consumption attitudes and behaviours (Peattie, 2010). For example, some studies have showed that greenness and femininity are cognitively linked which creates the green-feminine stereotype that affect social judgments and self-perception among men and women (Brough et al., 2016). In other words, focusing on this issue, Brough et al. (2016) argued and demonstrated empirically that because of this social stereotyping men are less likely to engage in sustainable consumer behaviour. Blocker and Eckberg (1997) demonstrated that women are more environmentally conscious, especially in terms of green lifestyle, animal rights and protecting nature. Supporting Blocker and Eckberg, Gilg et al. (2005)'s study that focuses on sustainable lifestyles, also suggests that males are less environmentally active. The reason behind this may be because of commonly perceived gender roles which might be affected by the division of labour in households in terms of consumption of certain goods (Gilg et al., 2005). Moreover, according to Blocker and Eckberg (1997), having children affects women and men differently. The study conducted by Blocker and Eckberg (1997) demonstrate that being a parent makes women more nurturing and therefore more concerned about the environment, in traditional female roles, i.e. homemakers and childrearsers, whereas men are more concerned about economic growth than environmental issues. Therefore, it can be said that values are important

for sustainable consumer attitudes and behaviours, and needs to be taken into account.

However, despite the stereotype that young people consume more environmentally friendly, some studies shows that age has a positive impact on green consumption, such that as people age, they are more likely to save and “make do” (Gilg et al., 2005), because people become more sensitive to environmental related issues when they get older (Straughan and Roberts, 1999). So, it can be said that values related to environment may change over time because of different reasons, such as changing their lifestyles, perceptions or habits.

Sustainable lifestyles, consumers’ daily activities and habits are also defined by socio-demographic characteristics and values, and when behaviours are considered as an expression of lifestyle, such as voluntarily lower-consumption lifestyle or reduced meat consumption, they are sometimes revealed as communities (Peattie, 2010). These communities are founded on shared environmental values or shared religious beliefs, as they put forth their own sets of norms and influence the behaviours of community members (Peattie, 2010).

According to Gilg et al. (2005), income does not significantly affect whether one is environmentally conscious or not. However, different income levels do affect behaviours and total environmental impacts of households (Peattie, 2010). Thus, economic incentives, which may be financial rewards or penalties for specific behaviours, can be potentially effective on behaviour (Peattie, 2010). For example, in terms of sustainable consumer behaviours, governmental taxes or deposit-refund systems may be effective. Now, psychological factors that may affect sustainable consumption will be examined.

2.2. Psychological Factors

In this section, psychological factors that may influence consumption will be analysed. Firstly, the relationship between personality traits and sustainable consumption will be examined. Then, another psychological factor called perceived consumer effectiveness will be introduced. Moreover, why psychological factors are important for research on sustainable consumption will be explained.

There are different psychological factors affecting sustainable consumption, such as personality traits, perceived consumer effectiveness (PCE), self-efficacy, and the interaction of the effects of price, quality, brand loyalty and social responsibility. Fraj and Martinez (2006) claim that personality affects sustainable consumer attitudes and behaviours, and when they examined sustainable consumption with the Big-Five personality traits, they found that extroversion, agreeableness and conscientiousness are positively related to sustainable consumer behaviours. Another psychological factor, PCE, is defined as the extent to which consumers believe they can have a positive effect on the environment; so, a high level of PCE generally shows greater level of sustainable consumption patterns (Gilg et al, 2005; Straughan and Roberts, 1999). So, consumer behaviours related to sustainability are affected by individuals' sense of self-identities, their own beliefs on how to divide up responsibility for environment-related problems and on how their consumption choices are going to help environment related problems (Peattie, 2010). Based on PCE, consumers can be categorised as “the antihero”, who does not believe green consumerism can make a difference, “the environmental hero”, who embraces the positive impacts of pro-environmental consumption and “the anarchist”, who believes that pro-environmental consumption is just a reaction against today's consumerist culture (Peattie, 2010). Another psychological factor, self-efficacy, is defined

as a person's ability to take part in green consumption (Gilg et al., 2005). Past research has shown a positive relationship between self-efficacy and sustainable consumer behaviours (Schwepker and Cornwell, 1991), which also takes places in the Ajzen's Theory of Planned Behaviour as perceived behavioural control.

According to Straughan et al. (1999), psychological factors such as altruism or PCE are more useful to understand ecologically conscious consumer behaviours. The main reason behind that is the fact that demographic characteristics are by many other factors, such as economic factors. So, as mentioned above, such segmentations may result in inconsistencies in the results of several studies (e.g. Zimmer et al., 1994; Roberts, 1996; Samdahl and Robertson, 1989; MacDonald and Hara, 1994). For example, Zimmer et al. (1994) found that age is negatively correlated with environmental sensitivity and behaviour, whereas Roberts (1996) found a positive relationship. Another example is that while Samdahl and Robertson (1989) did not find a significant relationship between environmental sensitivity and sex, MacDonald and Hara (1994) found a significant relationship. So, these differences and inconsistencies in the results of the mentioned studies, show that instead of focusing on demographics, studies that reflect the PCE or other psychological factors are more useful than demographics. The last factor that is influential in classifying the sustainable consumer is environmental values and concern, which will be explained in the next section.

2.3. Environmental values and concern

This section starts with the definition of values and its importance. Next, some models that may be helpful to understand how values affect behaviours will be explained respectively in this section.

Values are defined as *“concepts or beliefs which pertain to desirable end states or behaviours, transcend specific situations, guide selection or evaluation of behaviour and events, and are ordered by relative importance.”* (Schwartz, 1992). They are considered as one of the most important factors affecting human behaviour by many psychologists, sociologists and anthropologists (Schwartz, 1992). For example, Steel (1996) found that environmental activism is linked to strongly held personal values in which one considers the natural environment to be of great importance in a person’s life. According to Schwartz (1992), values are categorised as self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, spirituality, benevolence and universalism, and these values are put on two social dimensions “altruistic-egoistic” and “conservative-open to change” (Figure 3). According to Stern’s Value-Belief-Norm Theory model (2000), people who are concerned about environmental related issues are more altruistic and open to change, which eventually influences environmental behaviour (Figure 4).

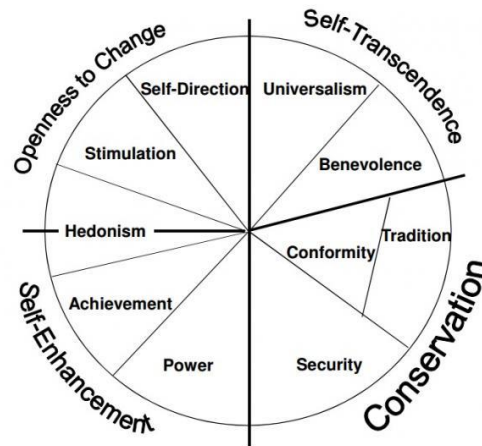


Figure 3: The Theory of Basic Human Values by Schwartz

Shared values, norms, rituals, beliefs and symbols in a society create cultures and such cultural values are important factors in determining the consumption behaviour of individuals (Mokhlis, 2009). Unlike other cultural factors like ethnicity or nationality, there is limited research that focuses on the role of religion in consumer behaviour, although the effect of religion can be clearly seen in births, marriages, family planning, eating habits or moral values of right and wrong (Mokhlis, 2009).

One of the main differences between culture and religion is that culture comes from a geographic location, while religion does not have any location, which makes it more convenient and applicable for marketers, regardless of location (Minton et al., 2015). Religion, in that sense, is an essential cultural factor, because it is considered as one of the most universal and influential social institution that affects the values, attitudes and behaviours (Mokhlis, 2009).

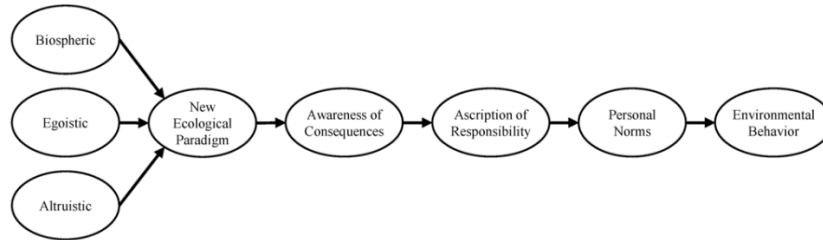


Figure 4: The Value-Belief-Norm Theory of Stern

The predictive power of attitudes, values and lifestyle variables is important in explaining sustainable consumer behaviours (Kalamas et al., 2014). There is a strong relationship between core values and consumer behaviours, but one of the main problems in past research was the lack of investigation of intrinsic motivators like consumers' core values, rooted in fundamental belief systems, with religion being one of the key determinants of core values (Minton et al., 2015). The values and norms that are emphasized by religions influence the whole society and thus, it is expected that a person's religion or religiosity may affect demand for green products, or individual green consumption (Iyer and Davari, 2014). Furthermore, Johnston (2013) argued that religious ideas were formative of sustainability, from resource allocation to development of countries, and therefore, he believes that sustainability holds the core values and deep beliefs coming from religions and sustainability movements may be affected by religion. Thus, understandings of religion may be an effective tool to investigate sustainability (Chidester, 2005; Minton et al., 2015).

In this section, sustainable consumer behaviour and the factors that may affect behaviours were explained. Different models like Ajzen's Theory of Planned Behaviour, the Theory of Basic Human Values by Schwartz and

the Value-Belief-Norm Theory by Stern were introduced to show how behaviours are affected and to explain what important factors may influence human behaviour. Generally, according to past research, environmental values and concern may be related to religious values and religiosity. Therefore, being an important factor that affects our values and eventually behaviours, religiosity needs to be taken into account, when seeking to understand sustainable consumption, which in past research is not examined by many researchers. So, in the next section of this thesis, religion, religiosity and sustainability related attitudes and behaviours are going to be examined in more detail.

3. RELIGION, RELIGIOSITY, AND THEIR EFFECT ON SUSTAINABLE CONSUMER ATTITUDES AND BEHAVIOURS

Religion has a long history of study in theology, sociology and psychology but it is only fairly recently that it has taken on an important role in marketing and consumer behaviour research. There are many ways of examining the concept of religion and since many years, many definitions have been made by researchers, philosophers and sociologists, going as far back as Hegel (19th century), Durkheim (1915) and continuing to the modern era such as Geertz (1966). Generally, three designations are shown to define religion: (1) individuals must respond to a supernatural power, (2) there should be a feeling present in the individual who feels that power, and (3) there should be ritual acts for the respect of such power (Wulff, 1997). McDaniel and Burnett (1990) defined religion as *“A belief in God accompanied by a commitment to follow principles believed to be set forth by God”*. Many definitions include society or a system, such as the definition of Johnson (2000), *“A social arrangement designed to provide a shared, collective way of dealing with the unknown and un-knowable aspects of human life, with the mysteries of life, death and the different dilemmas that arise in the process of making moral decisions.”*, or the definition of Arnould et al. (2004): *“A cultural subsystem that refers to a unified system of beliefs and practices relative to a sacred ultimate reality or deity.”* A widely accepted definition is provided by Geertz (1966): *“A system of symbols which acts to produce powerful, pervasive, and long-lasting moods and motivations in men by formulating conceptions of a general order of existence and clothing these conceptions with such an aura of factuality that the moods and*

motivations seem uniquely realistic.” Other researchers define religion not in terms of what is believed but how it is believed (Clarke and Byrne, 1993). For example, Fromm (1950) defines religion as “*any system of thought and action shared by a group which gives the individual a frame of orientation and an object of devotion.*” As can be seen, although the three designations of Wulff (1997) mentioned above can be seen in all of them, there are many different definitions. The reasons behind many definitions are conflicts and unclarity in the ordinary use of the term, the confused meanings coming from history and the obvious differences and aims in scholarly purposes for the definition of religion (Clarke and Byrne, 1993). These led Bowker (1976) to say, “*nobody seems to know what religion is.*” Having too many definitions and the absence of a generally accepted definition is one of the major problems for researchers (Guthrie et al., 1980), which led researchers to try and resolve these differences by analysing from two perspectives, religious commitment (i.e. religiosity) and religious affiliation (McDaniel and Burnett, 1990).

So far, in this section, religion is introduced according to many researchers and why it is difficult to define is explained. Generally, religious affiliation and religiosity have been used in consumer behaviour research. Now, religious affiliation will be explained and afterward religiosity will be discussed.

3.1. Religious Affiliation

Studying the differences among religious affiliations, which means the self-identified association of an individual with a religion, religions can be separated into two categories, which are Western religions (Christianity, Judaism and Islam) and Eastern religions (Buddhism, Hinduism and Taoism) (Minton et al., 2015). They both have different perspectives to the relationship between the environment and people. While believers of Western religions

suggest that God created nature and thus, God and people have a superior position to nature, Eastern religions follow a more pantheistic way and according to them, God is in and through everything, even in nature (Minton et al., 2015). Non-religious consumers are expected to be concerned about the environment because of the view that human life evolved out of natural elements, and because of the fact that being environmentally conscious is the only rational way to sustain life (Minton et al., 2015). For example, the results of a study by Hand and Crowe (2012) investigating the relationship between environmental views, religious affiliation and religiosity show that religiously non-affiliated people, such as atheists, are generally more environmentally oriented than religious people, i.e. Judeo-Christians.

The possibility that there are differences between people of different religious affiliations led researchers to investigate the relationship between consumer attitudes, behaviours and religious affiliations. For example, Minton et al. (2015) expected people who believe in Western religions to exhibit fewer sustainable consumption behaviours because of the belief that there is dominance over nature by humans. However, Hand and Crowe (2012) argue that acceptance of a dominance over nature orientation does not necessarily mean to less environmental attitudes and behaviours. Similarly, the differences between the beliefs of people who espouse Western and Eastern religions, i.e. their religious affiliation, are not necessarily the only influence on sustainable consumption attitudes and behaviours, because religion can be conceptualized as a unidimensional construct, with church membership or church attendance being the primary measure, which focuses on religiosity (Wilkes et al., 1986). This brings up the second way of examining religion.

3.2. Religiosity

Religiosity concerns the centrality of religion, which means the effect of religion on the individual's life in terms of adhering to religious role expectations (Kalamas et al., 2014). Another definition by McDaniel and Burnett (1990) says that religiosity is the "*degree to which an individual holds religious beliefs.*" The dimensions of religiosity are considered as faith, rituals, experiencing the presence of God, religious knowledge and community (Koenig and Bussing, 2010).

One of the most widely used approaches for examining religiosity separates it into two religiosity components (Allport and Ross, 1967), which are intrinsic (internal motivation) and extrinsic (socially driven). The terms are differentiated by Allport and Ross (1967) as extrinsically motivated people "use their religion" but intrinsically motivated people "live their religion". So, extrinsic religious people may pursue religious activities in order to achieve social goals, such as making friends or community gathering (Allport and Ross, 1967). Allport and Ross (1967) define extrinsic religion as "*a means of achieving self-serving ends, as a tool that promotes social support, comfort and self-esteem*", whereas intrinsic religion is defined as "*being an ultimate end in itself*", where intrinsic religious people are expected to have a deeper and more meaningful relationship with God. According to Iyer and Davari (2004), the motives for engaging sustainable consumer behaviour are different for both intrinsically and extrinsically religious consumers, yet both play different roles in terms of sustainable consumer behaviour. For example, Iyer and Davari (2004) propose that intrinsically religious people engage in activities and behaviours that provide benefit to the society without being affected by social norms, but extrinsically religious people participate in behaviours that show them in a good standing with religious groups, and they are affected by subjective norms of their social

groups. The study conducted by Vitell et al. (2005) also shows that individuals motivated by extrinsic religiosity are shown to have less religious commitment. Moreover, the same study by Vitell et al. (2005) demonstrates that intrinsic religiosity is shown to have a positive relationship with ethical beliefs, which is measured using the consumer ethics scale (CES) that includes items regarding copyrighted materials, recycling and environmental awareness and doing good (Vitell et al., 2005). Whereas, the results of the study demonstrate that extrinsic religiosity does not affect a person's perspectives regarding consumer ethics, such as in terms of recycling (Vitell et al., 2005).

As supported by many studies, mentioned above, researchers such as, Koenig and Bussing (2010) or Donahue (1985) note that extrinsic religiosity does not measure religiosity, as it is mentioned as a form of religiosity "for show" which is used as a means to some more important end such as financial success or social status. So, in this thesis, intrinsic religiosity will be considered as the relevant conceptualization, leaving aside extrinsic religiosity.

Understanding the level of religiosity of an individual is essential because religiosity directly affects values and attitudes and ultimately impacts behaviours (Kalamas et al., 2014). For years, past studies have shown that religiosity influences personal values, attitudes and behaviours, significantly. For example, a study by Rosenblith (1949) shows that people who are exposed to high religious influence are also higher in ethnic prejudice. Similarly, the scores on ethnocentrism and authoritarianism are significantly higher among highly religious people according to the study by Adorno et al. (1950), Gough (1951) and Rokeach (1960). Kirkpatrick (1949) illustrated that religious people are less humanitarian than non-religious people. Also, highly

religious people tend to be more conservative, traditional, with more stereotypes and restrictions affected by religiosity on buying patterns which means that the level of religiosity affects adoption of life-styles and views on life (McDaniel and Burnett, 1990; Petrescu, 2012).

According to Minton et al. (2015) the level of religiosity may play a role in sustainable consumption behaviours and attitudes. The main reason is that religious affiliation and religiosity influences altruistic values, which was shown to have a relationship with sustainable consumption behaviour. However, many studies have shown a negative relationship between religiosity and environmental concern or pro-environmental behaviours, (Hand and Van Liere, 1984; Eckberg and Blocker, 1989; Greeley, 1993) whereas some studies found no significant relation (Boyd, 1999). These inconsistencies may be because of different understandings and definitions of religion (Kalamas et al., 2014). For example, the findings of Greeley (1993) show that there is a negative relationship with belief in God and environmentally friendly spending. Similarly, Eckberg and Blocker (1996) also found a negative relationship between religiosity and environmentally friendly behaviours like recycling, taking part in organized pro-environmental activities or being willing to pay an economic price to protect nature. Whereas the results show a positive relationship with the belief of nature is sacred ($r = 0.46, p < .001$) (Eckberg and Blocker, 1996). Researchers like Woodrum and Wolkomir (1997), Martin and Bateman (2014) and Minton et al. (2015) on the other hand, found a positive relationship between religiosity and environmental concern, eco-centric attitudes and behaviours and eco-friendly purchase and disposal behaviours. The results of the study by Woodrum and Wolkomir (1997) demonstrates a positive relationship ($r = 0.116, p < .001$) between religious attendance, asked as “*How often do you attend religious services?*” in a 7-point Likert scale, and individual

environmental behaviour, which was measured on an additive scale and asked the frequency of behaviours like recycling, refusing to eat meat, and willingness to cut the standard of living. Martin and Bateman (2014) used a scale developed by (Thapa, 2010) for six environmental behaviours including recycling, donating, watching TV programs about the environment, switching products because of environmental issues and using recycled products, and used the Religious Commitment Inventory utilized by Worthington et al. (2003) to measure religiosity. The results demonstrated a positive relationship with religiosity for each behaviour ($r = 0.11$, $p < .05$). Minton et al. (2015) found that high religious Buddhists and high religious Christians engage more in eco-friendly purchase and disposal behaviours, such as recycling and purchasing energy efficient goods, than low religious Buddhists and low religious Christians (See Figure 5).

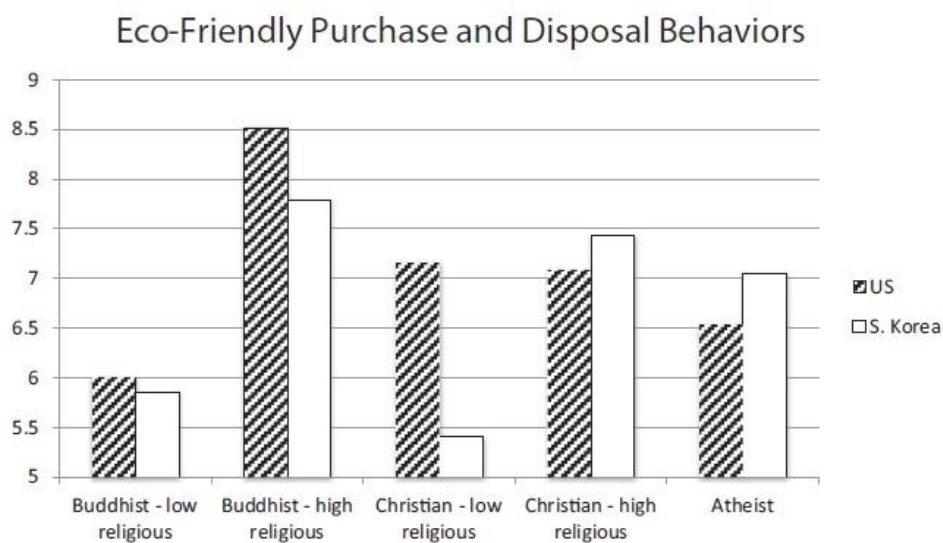


Figure 5: Eco-Friendly Purchase and Disposal Behaviours by religions (Minton et al., 2015)

According to Harper and Simkins (2008), this inconsistency in results is because of the multidimensional nature of both religiosity and sustainable behaviours. Moreover, intrinsic values of nature, i.e. seeing nature as sacred, or religious activities do not necessarily lead to sustainable consumer behaviours (Tomalin, 2009). For example, although people worship the polluted river of Ganges in India, there is little evidence that such religious practice motivates people to prevent any further pollution (Tomalin, 2009). Taylor (2013) argued that people's deepest moral values are inspired not only by religion but also by spirituality, and such values are expected to be intertwined with environmentalist concern and action. So, Tomalin (2009) claims that many ecological activists describe themselves as "spiritual" that is considering the Earth to be sacred.

In this section religion was defined, and the two main ways of conceptualizing religion were introduced, which are religious affiliation and religiosity. Using different examples coming from past research, both religious affiliation and religiosity were shown to be related to sustainable consumer attitudes and behaviours. However, we see many inconsistencies in the results, which may be because of the different understandings of religion, different scale usage or different samples. The lack of investigation on spirituality led us to study spirituality in the next section of the thesis. So, in the next section, spirituality and its difference between religiosity will be explained.

4. SPIRITUALITY AND ITS INFLUENCE ON SUSTAINABLE CONSUMER ATTITUDES AND BEHAVIOURS

Religion and religiosity were shown to have an impact on attitudes and behaviours of individuals, but past research show conflicting results. Past research suggests that a possible factor which help clarify these inconsistencies is the concept of spirituality. So, in this section, spirituality will be defined, the difference between religion and spirituality will be explained and why it may be an influential factor in sustainable attitudes and behaviours will be argued.

Like religiosity there are many different definitions in the previous research that addresses spirituality. Ball et al. (2001) defined spirituality as “*a connection to the eternal, for its own sake, not for power, status or material gain*”. In short, it is basically a strong connection to, or identity with, some transcendent reality, which can be a personal god, universal life-force, a unity of living things or spirits (Ball et al., 2001). Spirituality is categorized into three according to Hill et al. (2000):

- *A god oriented spirituality where thought and practice are premised in theologies,*
- *A world or earth oriented spirituality that stresses an individual's relationship with ecology or nature,*
- *A humanistic spirituality that stresses human achievement or potential.*

Generally, innerness and discovering of wholeness are critical attributes of spirituality (Dyson et al., 1997). Other components mentioned are a sense of connectedness, universality, prayer fulfilment, nonjudgmentality, existentiality and gratefulness (Piedmont, 1999).

Spiritual well-being is considered as neither synonymous, nor coterminous, with religiosity (Dyson et al., 1997). For example, religion can provide a platform for the expression of spirituality (Dyson et al., 1997) but it does not have to, necessarily. This means that a religious person can be spiritual or non-spiritual, likewise, a spiritual person can be religious or non-religious. So, regardless of religious affiliation or religiosity, one can be spiritual or non-spiritual (Taylor, 2013). The difference comes from the fact that religiosity is observance of the outward forms of a religious tradition, whereas spirituality searches a connection to a non-material reality which is perceived as a kind of perfection (Ball et al., 2001). In that sense, religious people participate with a group of people in a social institution rather than an individual search for meaning (Dyson et al., 1997).

Especially in Western societies, with the rise of secularism, there has been a disillusionment with religious institutions and thus, spirituality has begun to acquire more meanings separate from religion (Hill et al., 2000). Moreover, it has become a term that engages with green issues, with ideas of wholeness, creativity and interdependence and is less associated with hierarchies of gender, race or culture (King, 1996).

Today, many people in the world are calling themselves spiritual but not religious (Ball et al., 2001; Hill et al., 2000). In a study by Zinnbauer et al. (1997) the “spiritual but not religious” group was less likely to understand religiousness in a positive light, less likely to engage in traditional prayer or church attendance, and less likely to hold orthodox beliefs. Yet, this group

was more likely to be independent, more likely to hold non-traditional beliefs and more likely to differentiate religiousness and spirituality.

Taylor (2013) says that a new environmental movement has begun with spiritual thoughts, such as a deep sense of belonging to and connectedness in nature, seeing the earth and all living systems to be sacred and interconnected. According to this new environmental movement, or “the dark green religion”, all nature is intrinsically valuable apart from its usefulness to humans (Taylor, 2013). Taylor (1995) also argued that spirituality constituted this new movement, especially pantheistic and animistic values, which influence moral passions of many people. Giving a brief definition, animism refers to perceptions that natural entities, forces and nonhuman life forms might also have a soul, a spirit, a personhood or consciousness, which means that there is a relationship between nature and humans, whereas people that hold pantheistic values perceive the earth to be divine (Taylor, 2013).

Carroll (2004) argues that spirituality and deeply held spiritual belief are necessary to achieve real sustainability. According to him, environmental values may be found in both spirituality and religiosity, even more than scientific, economic or political motivations. He defines such values as a strong sense of place, a sense of connectedness with nature, honest humility in the face of the cosmos, an appreciation for the basic principles of ecology (especially the principle of everything is connected to everything else), an appreciation of wholeness and a sense of a creator. In that sense, it can be concluded that values related to sustainability should be found among people who have developed a deep spirituality (Carroll, 2004).

In this section, spirituality is defined, and some different understandings of spirituality are mentioned. Core components of spirituality

are given and the difference between religiosity is explained. Relying on the literature mentioned so far, in the next section of the thesis, the conceptual development and research hypotheses will be explained.

5. CONCEPTUAL DEVELOPMENT

This section will attempt to provide a conceptual basis for the hypotheses that will be proposed. Relying on research discussed in the previous sections, hypothesized relationships between religiosity, spirituality and sustainable consumer attitudes and behaviours will be justified.

As mentioned earlier, past research shows inconsistent results about the relationship between religiosity and sustainable consumer attitudes and behaviours (Hand and Van Liere, 1984; Eckberg and Blocker, 1989; Greeley, 1993; Boyd, 1999; Woodrum and Wolkomir, 1997; Martin and Bateman, 2014; Minton et al., 2015). The main topic being investigated here, the inconsistency may be explained because of the lack of investigation of spirituality in past research. So, understanding the relationship between spirituality and sustainable consumer attitudes and behaviours may be helpful in understanding the attitude-behaviour gap, because unlike religious affiliation and religiosity, the components of spirituality (i.e. connectedness, universality, prayer fulfilment, nonjudgmentality, existentiality and gratefulness) may be expected to be related to values related to sustainability. In this part of the thesis why spirituality may be an important influence on sustainable consumer attitudes and behaviours will be examined, and regarding this issue, hypotheses will be developed.

When values are considered, Ajzen's theory of planned behaviour and Stern's value-belief-norm theory are useful to understand how values and beliefs affect behaviour, ultimately. These theories are considered as useful for reflecting the general environmental values, beliefs and norms which determine specific pro-environmental behaviours (Kaiser et al., 2005), as they are used in past research. For example, a study conducted by López-Mosquera

and Sánchez (2012), investigated willingness to pay behaviour for an environmentally related decision by using theory of planned behaviour, and value-belief-norm theory. The results of the study demonstrate that according to value-belief-norm theory, biospheric values and altruistic values have a positive impact on the behaviour, and according to the theory of planned behaviour, perceived behavioural control and subjective norms have a positive impact on the behaviour (Lopez-Mosquera and Sanchez, 2012). Other research (e.g. Stern et al., 1999; Ojea et al., 2007) found that there is a positive relationship between environmentalism and altruistic values. Like many researchers, Saroglou et al. (2004) also says that religion is one of the determinants of values, and as Paloutzian and Park (2005), Blagowska and Saroglou (2011) and Midlarsky et al. (2012) argued that belief systems affect altruistic values positively. As Kalamas et al. (2014) suggests that religiosity directly affects values, it may be expected that results would show a positive relationship. However, some studies indicate a negative relationship between religiosity and sustainable consumer attitudes and behaviours, such as the outcomes of the research by Hand and Van Liere (1984), Eckberg and Blocker (1989), which are showing this inconsistency. Furthermore, when past research is examined, such as Greeley (1993), Eckberg and Blocker (1996), Woodrum and Wolkomir (1996) or when the other religiosity measures are analysed, such as The Religious Commitment Inventory-10 (RCI-10) or the Centrality of Religiosity Scale (CRS), we can see that such scales do not differentiate intrinsic and extrinsic religiosity, and include both intrinsic and extrinsic religiosity items, although Allport and Ross (1967), Koenig and Bussing (2010) or Donahue (1985), say that extrinsic religiosity may not show the real religiosity level. Also, the religiosity scales show no strict distinction between religiosity and spirituality, because of the different understandings of both religion and spirituality, which may result in

inconsistent results as well. So, based on these past research, because there are many inconsistent findings regarding the influence of religiosity on sustainable consumer attitudes and behaviours, the results cannot be clearly interpreted.

6. RESEARCH HYPOTHESES

In order to understand why there is inconsistency and what really affects sustainable consumer attitudes and behaviours, we separated research hypotheses section into two. Firstly, how religiosity and sustainable consumer attitudes (SCAs) and sustainable consumer behaviours (SCBs) are expected to be related will be explained. Then, how spirituality and SCAs and SCBs are expected to be related will be explained.

6.1. Religiosity and SCAs/SCBs

As mentioned before, when past studies are examined, we see different results regarding the relationship between religiosity and SCAs or SCBs. Different understandings of religiosity, which results in different scales, may explain why there is inconsistency in results of studies. Previous studies (Minton et al., 2015; Woodrum and Wolkomir, 1997; Hand and Van Liere, 1984; Greeley, 1993; Eckberg and Blocker, 1989) show how different conceptualizations of religiosity can be examined. For example, Hand and Van Liere (1984) or Woodrum and Wolkomir (1997) conceived it as extrinsic religiosity, while Eckberg and Blocker (1989) conceived it as importance of religion. The results of the study by Woodrum and Wolkomir (1997) demonstrate that religious attendance, which can be considered as an extrinsic religious activity, is positively related to individual environmental behaviours. However, as stated by Koenig and Bussing (2010) and by Donahue (1985) extrinsic religiosity may not measure a person's actual level of religiosity. Another result by Woodrum and Wolkomir (1997) demonstrates that fundamentalism is negatively related to individual environmental behaviours, which may show that intrinsic religiosity played a role in that. Moreover, especially according to the Western religions, the

belief of “*God created nature and thus, God and people have a superior position to nature*” may lead intrinsically religious people not to behave environmentally friendly. Finally, according to Stern (2000), altruism influences SCAs/SCBs (Figure 6). Regarding that, Saroglou (2013) says that spirituality pushes for an extended altruism beyond religiosity. In sum, it appears that the weight of evidence points to intrinsic religiosity actually being negatively related to environmentalism. Considering all of these, following hypotheses can be stated:

H1a: Intrinsic religiosity is negatively related to SCAs.

H1b: Intrinsic religiosity is negatively related to SCBs.

6.2. Spirituality and SCAs/SCBs

Taking Stern’s value-belief-norm theory as a model to explain, it is possible to explain why spirituality affects sustainable consumer attitudes and behaviours, eventually. According to the model (Figure 4), altruistic, biospheric and egoistic values can be considered precedents to sustainable consumer behaviour. As Carroll (2004) indicates according to the value-belief-norm theory, altruistic values are affected directly by religious beliefs but also may be affected by spirituality, as stated by Saroglou (2013). Previous research demonstrates that spirituality is positively related to altruism (Huber and MacDonald, 2012; Saroglou et al., 2005). Moreover, researchers like Kristeller and Johnson (2005) or Piliavin and Charng (1990) argued that self-transcendence is the core of altruistic values. Huber and MacDonald (2012) compared spirituality, religiosity and altruism in their study, and their results demonstrated that religiosity is less correlated with altruism, than spirituality does.

Relying on previous research we mentioned, another value-belief-norm theory is created, which shows what may affect altruistic values, which are intrinsic religiosity and spirituality (Figure 6). Basically, it can be said that spirituality affects altruistic values, therefore it should affect sustainable consumer attitudes and behaviours, eventually.

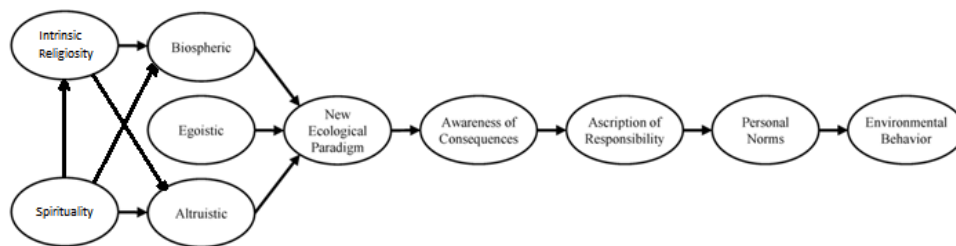


Figure 6. Advanced Value-Belief-Norm Theory - Behind the Values

Also, when examining some other studies which investigated the relationship between religiosity and sustainable consumer attitudes and behaviours, it can be said that because of many definitions of religion, the religiosity scales may include spirituality related items. For example, the results by Eckberg and Blocker (1996), show that there is a positive relationship between religiosity and the belief in nature as sacred ($r = 0.46$, $p < .001$), which includes spirituality related values like connectedness and universality. Thus, separating spirituality and religiosity in terms of scales, may yield more valid results.

As discussed previously, because of the components of spirituality such as innerness, discovering of wholeness, connectedness and universality, spirituality is expected to play one of the major factors for SCAs and SCBs. Considering these, as Carroll (2004) said sustainability should be found among people who have developed a deep sense of spirituality, which is in

line with what researchers found regarding the relationship between altruism and spirituality. Previous studies show that altruism is an important component of sustainability related attitudes, and also, sustainable and pro-environmental behaviours are considered as altruistic behaviours by many researchers (Ebreo et al., 1999; Hooper and Nielsen, 1991; Schultz, 2001; Corral-Verdugo et al., 2009). This means that people who have high altruistic values, would be more spiritual, and therefore they would have higher sustainable consumer attitudes and behaviours.

So, it can be expected that the higher one's spirituality is, the more likely one behaves and acts environmental friendly, regardless of the level of religiosity and religious affiliation. Therefore, it is possible to state the following hypotheses (Figure 7):

H2a: Spirituality is positively related to SCAs.

H2b: Spirituality is positively related to SCBs.

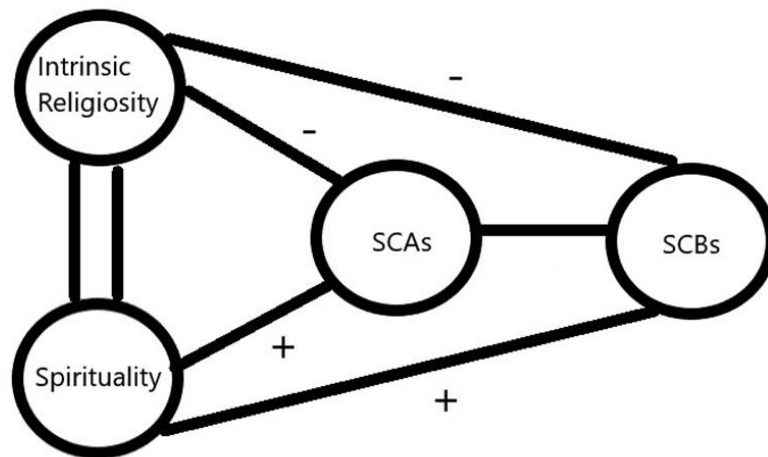


Figure 7: The Effect of Intrinsic Religiosity and Spirituality on SCAs and SCBs

The relationships between intrinsic religiosity, spirituality, sustainable consumer attitudes and sustainable consumer behaviours are going to be investigated using regression analysis in the following parts of the thesis. Now, in the methodology part, measurement approaches for sustainable consumer attitudes, behaviours, spirituality and religiosity will be analysed. Different scales will be investigated, and selection of the final choices of scales used for measurement will be explained.

7. METHODOLOGY

In this part, previous measures regarding religiosity, spirituality, sustainable consumer attitudes and behaviours are going to be analysed, and which measures are selected will be explained. This thesis uses four reliable and valid measures for sustainable behaviours and attitudes, religiosity and spirituality, which are based on self-reports in mostly Likert-scale type questionnaires, apart from demographic questions. The measures are going to be analysed as sub-topics, starting with religiosity.

7.1. Religiosity Measurement

For measuring religiosity, there are many scales used in past research and a few are selected. These measures used in past research are examined and their reliability, usage rate and scientific citations, ability to differentiate extrinsic and intrinsic religiosity, item numbers and whether scales can be used for different cultures or religions are used as a selection criterion. Among them, The I/E-R Scale (Allport and Ross, 1967; Gorsuch and McPherson, 1989), the Duke University Religion Index (DUREL) (Hafizi et al., 2013; Koenig and Büssing, 2010), The Religious Commitment Inventory-10 (RCI-10) (Worthington et al., 2012), the Centrality of Religiosity Scale (CRS) (Huber and Huber, 2012) and General Social Survey (Burt, 1984) are analysed respectively before selecting which one to use.

The first scale to be examined is by Allport and Ross (1967) which is created to measure intrinsic and extrinsic religiosity, which is revised after by Kirkpatrick (1988) and by Gorsuch and McPherson (1989). Again, extrinsic religiosity refers to “*a means of achieving self-serving ends, as a tool that promotes social support, comfort and self-esteem*”, and intrinsic religion refers to “*being an ultimate end in itself.*” (Allport and Ross, 1967). The

original scale by Allport and Ross (1967) consists of 20 items. With the improvements, extrinsic religiosity subscale is divided into two, “*personally oriented extrinsic religiosity*” and “*socially oriented extrinsic religiosity*” (Gorsuch and McPherson, 1989). Moreover, with the revised scale by Gorsuch and McPherson (1989) the number of items are decreased to 14 in total, out of which 8 items measure intrinsic religiosity. Gorsuch and McPherson (1989) combined some extrinsic religiosity items, to increase the scale reliability and to shorten the length of the questionnaire. However, still the extrinsic scales of the I/E-R Scale continued to have lower reliabilities (Gorsuch and McPherson, 1989). Gorsuch and McPherson (1989) suggested to use the revised I/E-R Scale, especially with the sufficient number or participants, in order to decrease the risk of low reliabilities of extrinsic religiosity subscales, as shown in two studies by Darvyri et al. (2014). Moreover, the revised I/E-R Scale is aiming to look at the relationship between extrinsic religiosity subscales that is generated, and intrinsic religiosity (Gorsuch and McPherson, 1989). Although the I/E-R Scale aim to measure religiosity by differentiating extrinsic religiosity and intrinsic religiosity, it has not been widely used (Koenig et al. 2001).

Worthington et al. (2012) constructed the RCI-10 scale, which has 10 items and focuses on the religious commitment level of an individuals by asking religious values, beliefs and practices (Worthington et al., 2003). Some sample items are “*I often read books and magazines about my faith*” and “*I spend time trying to grow in understanding of my faith.*” (Worthington et al., 2012). The RCI-10 index is mentioned as a useful index in global context, which can be used for different religious affiliations (Worthington et al., 2003).

The CRS scale by Huber and Huber (2012) is a measure for the centrality and importance of religious meanings in personality and widely used in studies like sociology of religion, psychology of religion and religious studies (Huber and Huber, 2012). Like the RCI-10 index, the CRS is also applicable for different religious affiliations and cultures (Huber and Huber, 2012). The CRS index consists of five dimensions, the intellectual dimension, ideology, public practice, private practice and religious experience and it is a 10-item scale (Huber and Huber, 2012). Sample items are “*How often do you experience situations in which you have the feeling that God or something divine is present?*” or “*How often do you pray?*”

A subscale of the General Social Survey (GSS) is also widely used by many researchers, such as Greeley (1993), Eckberg and Blocker (1996) and Woodrum and Wolkomir (1996) in order to measure religiosity. The GSS is a widely accepted survey and used both for data collection or raw data source. The main problem with the GSS is that collected data aim generally to measure sociological change over time in American society (gss.norc.org), and thus, it restricts researchers from using the GSS for intercultural or international studies. Also, when the items for religiosity are analysed, the GSS aims to measure “*Religious attitudes and behaviours*”, not the religiosity level. Moreover, these scales do not differentiate extrinsic and intrinsic religiosity clearly, which is an important issue as stated earlier (Allport and Ross, 1967).

The Duke University Religion Index (DUREL) scale is used that is valid and reliable. The DUREL scale is the revised version of 10-Item Hoge intrinsic religiosity scale, which was influenced by the 20-Item I/E-R Scale of Allport and Ross (Koenig and Büssing, 2010). Cronbach’s alpha for reliability of total score by different previous studies are between .73 and .91

(Koenig et al., 1997, Storch et al., 2004 and Lucchetti et al., 2012). It is useful for cross-cultural studies and different religions (Koenig and Bussing, 2010). The DUREL scale is designed to measure organizational religious activity (ORA), non-organizational religious activity (NORA) and intrinsic religiosity (IR) (Koenig and Bussing, 2010). The DUREL consists of five items, measuring organizational religious activity, non-organizational religious activity, and intrinsic religiosity in six and five-point Likert-type scales. According to this scale, organizational religious activity refers to public religious activities, like church or mosque attendance, or prayer groups, whereas non-organizational religious activity refers to private religious activities, like prayer or watching religious TV (Koenig and Bussing, 2010).

In the light of the selection criteria, reliability, applicability for cross-cultural studies, low item numbers, differentiating intrinsic and extrinsic religiosity, the DUREL scale is found to be the most suitable among the examined scales. Thus, it was for use in this thesis.

In the next sections, spirituality measurement will be explained, then we will explain how we measured sustainable consumer attitudes and behaviours, respectively.

Table 1: Religiosity measures reviewed

Date	Name of Instrument	Author(s)	Reliability	# item
1967	Intrinsic/Extrinsic Religious Orientation Scale (I-E/R)	Allport & Ross	0.83	14 - 20
1984	General Social Survey (GSS)	Burt	-	13
2010	The Duke University Religion Index (DUREL)	Koenig & Büssing	.73-.91	5
2012	The Religious Commitment Inventory - 10 (RCI-10)	Worthington et al.	0.93	10
2012	The Centrality of Religiosity Scale (CRS)	Huber & Huber	0.93	10

7.2. Spirituality Measurement

Finding a good measure for spirituality also poses difficulties because, similar to religion, there are many different understandings, definitions and measures. The main selection criteria regarding spirituality measurement is to see whether scales include the features of spirituality, such as connectedness, universality, innerness and discovering of wholeness (Dyson et al., 1997; Piedmont, 1999). Also, the number of items (fewer is better), reliability, ability to use for cross-cultural studies and being able to use for psychology discipline are the selection criteria.

The reviews of spirituality measures by Meezenbroek et al. (2010) and Delaney (2003) investigating different spirituality scales are helpful for this thesis to select the correct measure. Meezenbroek et al. (2010) and Delaney (2003) have investigated 15 different measures regarding spirituality that can be used in different fields (Table 1).

After reviewing these spirituality measures, which are widely used in previous research for different fields including theology, psychology, nursing and medicine, it can be said that most of the spirituality measures include religious or belief items and focus on “God oriented spirituality”. Such measures are not applicable for this research because in this thesis, religiosity and spirituality are differentiated, and religiosity level of people is going to be measured and investigated by using another measure, namely the DUREL scale. As mentioned earlier, there are many people who call themselves as “spiritual but not religious” (Taylor, 2013). Thus, a measure of one should be distinct from the other. As explained before, spirituality is neither synonymous, nor coterminous, with religiosity. So, in this thesis we focus on separating spirituality and religiosity, as we believe that such separation would give us a better perspective to differentiate how spirituality or

religiosity affects sustainable consumer attitudes and behaviours. This separation should give us a better ability to examine participants and categorize them, such as spiritual and religious, spiritual but not religious, religious but not spiritual. Thus, instead of using measures that include items related to God or beliefs, questionnaires including the main facets of spirituality, that is, universal experiences, connectedness to nature, compassion, gratitude or self-actualization are more useful in this research.

Furthermore, spirituality measures, focusing on religiosity too, are considered as not applicable for cross-cultural studies (Meezenbroek et al., 2010). However, it is important that a measure can be used for cross-cultural studies, particularly for this thesis. So, using such criteria for choosing a measurement for spirituality, Piedmont's (1999) Spiritual Transcendence Scale (STS) is believed to be the best fit for this thesis. First of all, Piedmont (1999) argues that spiritual transcendence is different from religiosity. So, the scale focuses on spirituality and includes the main facets of spirituality, such as connectedness, innerness or universality (Dyson et al., 1997; Piedmont, 1999). Moreover, the scale is useful for cross-cultural studies, and can be used for both Eastern and Western traditions (Piedmont, 1999), and it has been used as a benchmark for other spirituality scales, such as Prague Spirituality Scale by Rican and Janosova (2005).

Table 2: Spirituality measures reviewed

Date	Name of Instrument	Author(s)	Discipline	Reliability	# item
1983	Spiritual Well-Being Scale (SWB)	Ellison	Theology	0.89	20
1986	Spiritual Perspectives Scale (SPS)	Reed	Nursing	.93-95	10
1988	Spiritual Orientation Inventory (SOI)	Elkins	Psychology	.64-.97	85
1991	Self-Transcendence Scale (STS)	Reed	Nursing	0.52	15
1992	Spirituality Assessment Scale (SAS)	Howden	Nursing	0.91	28
1992	Spiritual Health Inventory (SHI)	Highfield	Nursing	.89-.92	32
1995	Spirituality Subscale of the Mental, Physical and Spiritual Well-being Scale (MPS)	Vella-Brodrick and Allen	Theology	.75-.95	10
1996	Index of Core Spiritual Experiences (INSPIRIT)	Kass	Medicine	0.9	19
1996	JAREL Spiritual Well-Being Scale (JSWB)	Hunglemann et al.	Nursing	0.81	24
1998	Spiritual Involvement and Beliefs Scale (SIBS)	Hatch et al.	Medicine	0.92	22
1999	Spiritual Well-Being Scale of the Functional Assessment of Chronic Illness Therapy (FACIT-Sp-12)	Brady et al.	Nursing	0.87	12
1999	Spiritual Transcendence Scale (STS)	Piedmont	Psychology	.65-.85	24
2003	Spiritual Well-Being Questionnaire (SWBQ)	Gomez and Fisher	Psychology	.76-.95	20
2005	Prague Spirituality Questionnaire (PSQ)	Rican and Janosova	Psychology	.66-.83	30
2006	WHOQOL Spirituality, Religion and Personal Beliefs (WHOQOL SRPB)	O'Connell et al.	Psychology	.71-.93	32

Piedmont's (1999) Spiritual Transcendence Scale (STS) consists of a three-factor structure, prayer fulfilment ($r = .85$), universality ($r = .85$) and connectedness ($r = .65$) and contains 24 items in total. Prayer fulfilment subscale focuses on a feeling of joy and contentment that results from prayer and/or meditation, universality focuses on a belief in the unity and purpose of life and connectedness focuses on a sense of personal responsibility and commitment to others, such as family members or community and measures by Piedmont (1999) as "*an experienced feeling of joy and contentment that results from prayer*", which may be understood similar to religiosity. Connectedness subscale is defined by Piedmont (1999) as "*a sense of personal responsibility to others that is both vertical, cross-generational commitments, and horizontal, commitments to others in my community*". Although connectedness subscale may sound like it may be useful to measure social sustainability related attitudes, such as workers in the third world countries, the items of connectedness subscale do not seem to relate to those issues. For example, the items in connectedness subscale are "*although dead, images of some of my relatives continue to influence my current life*" or "*I am concerned about those who will come after me in life*". So, we will focus only on the universality subscale of the STS.

In this thesis, measuring spirituality and religiosity separately is very essential, therefore, to examine spirituality, in this thesis, only universality subscale is used, as according to the definitions of Piedmont (1999), connectedness and prayer fulfilment does not concern this thesis. So, In this research "9-item universality" subscale of STS is used, which is defined as "*A belief in the unity and purpose of life; a feeling that all life is interconnected and a sense of a shared responsibility of one creature to another.*" (Piedmont, 1999). Items are used on a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree) (Piedmont and Leach, 2002).

7.3. Sustainable Consumer Attitudes Measurement

In the prior sections religiosity and spirituality measures were explained. Now we turn to explaining the measurement of sustainable consumer attitudes and behaviours. Firstly, how we intend to measure sustainable consumer attitudes will be explained in this section.

When past research is examined, it can be said that most of the measures of consumer sustainability were aiming at one specific pillar of sustainability, either social, economic or environment. So, they are limited to measure sustainability related consumer attitudes as they do not focus on all three pillars of sustainability. For example, the GREEN Scale by Haws et al. (2014) focuses only on green consumption; the Fair-Trade items scale by Tanner and Kast (2003) focuses only on fair trade related questions. In this thesis, when talking about sustainability, not only the environmental pillar of it are mentioned, but also social and economic. Moreover, the number of items in the scales examined were very high, such as United Nations Sustainable Development Scale (2009) having 15 items just for attitudes. Therefore, it was deemed necessary to create a scale, for this thesis, to be able to include items regarding all three pillars of sustainability, but with a goal of having a relatively small number of items.

In order to measure sustainable consumer attitudes (SCA) a scale with 9 items was created (Table 2). The items are inspired by and based on the previous scales that seek to measure sustainability attitudes, such as the GREEN Scale by Haws et al. (2014) ($\alpha = .89$), Fair Trade items by Tanner and Kast (2003) ($\alpha = .79$), United Nations Sustainable Development Scale (2009) ($\alpha = .77$), and Antil's Socially Responsible Consumption Behaviours Scale (1984) ($\alpha = .88$) and based on five-point Likert scales (1 = strongly disagree to 5 = strongly agree).

Table 3: SCA measures reviewed

Date	Name of the Instrument	Author(s)	Reliability	# of items
1984	Socially Responsible Consumption Behaviours Scale	Antil	0.88	40
2003	Fair Trade	Tanner & Kast	0.79	10
2009	Sustainable Development Scale	The United Nations	0.77	15
2014	The GREEN Scale	Haws et al.	0.89	6

Before using the scale, a pre-test was conducted among 80 participants (56% Female, 44% Male, average age = 23). Using exploratory factor analysis, principle component analysis was performed, and the first unrotated solution showed that there are two factors and there was a cross-loading on the item number Q5. Excluding item number Q5 resulted in decreasing to one factor and a unidimensional scale, with all items loading above 0.5 (Table 3). The reliability statistics of the scale with the excluded item show that Cronbach's Alpha is 0.82, which was deemed sufficient.

Table 4: SCA Scale Items

SCA Scale
Q1: It is very important to me that the people involved in growing the foods or producing the goods I buy are treated fairly.
Q2: I am concerned about wasting the resources of our planet.
Q3: I make a serious effort to consume less now in order to preserve our resources.
Q4: I believe that it's necessary to reduce consumption in order for future generations to have what they need.
Q5: I believe that factory workers in third-world countries should be able to earn a decent income from making the products I use. (EXCLUDED)
Q6: It is important to me that the products I use do not harm the environment.
Q7: I feel a sense of responsibility for workers in lower income countries that produce the things I buy.
Q8: It's important to me to decrease the amount of things I buy in order to minimize impact on the environment.
Q9: I would describe myself as environmentally responsible.

Table 5: Component Matrix for SCA Scale (Pre-Test)

First Round - Component Matrix (SCAscale)			Second Round - Component Matrix (SCAscale)	
	Factor 1	Factor 2		Factor 1
Q1	0.642	0.292	Q1	0.619
Q2	0.671	0.163	Q2	0.665
Q3	0.744	-0.468	Q3	0.777
Q4	0.702	-0.004	Q4	0.712
Q5 (Excluded)	0.622	0.59	Q6	0.697
Q6	0.7	0.001	Q7	0.523
Q7	0.547	0.352	Q8	0.791
Q8	0.771	-0.304	Q9	0.743
Q9	0.718	-0.377		

7.4. Sustainable Consumer Behaviour Measurement

Similar to the sustainable consumer attitudes measures in past research, measures of sustainable consumer behaviour were only focusing on one dimension of the sustainability pillars, such as only focusing on either environmental, social or economic related items. Therefore, again it was deemed necessary to develop a measure of sustainable consumer behaviours (SCBs) for this thesis. So, 10 items were created according to basic sustainability related behaviours and choosing similar items from past research, such as sustainable behaviour items by Webb et al. (2008), the items created by Minton (2014); Minton et al. (2015), Fair trade items by Tanner and Kast (2003), and items of sustainable fashion consumption behaviours by Song and Ko (2017) (Table 4). The scale is based on five-point Likert scales (1 = never to 5 = always). The items are constructed to measure behaviours related to recycling, food consumption, purchasing habits, reusing, transportation, consumption reduction and responsible consumption.

Table 6: SCB measures reviewed

Date	Name of the Instrument	Author(s)	Reliability	# of items
2003	Fair Trade Items	Tanner & Kast	0.79	10
2008	Sustainable Behaviour Items	Webb et al.	.72-.95	30
2014	The GREEN Scale	Haws et al.	0.89	6
2014 2015	Minton scales	Minton et al.	.76-.98	10
2017	Sustainable Fashion Consumption Behaviors	Song & Ko	-	9

Table 7: SCB Scale Items

SCB Scale
Q1: I recycle the materials I use (glass, paper or metal).
Q2: I make a special effort to buy products made from recycled materials.
Q3: In my diet I substitute vegetables for meat in order to reduce the environmental impact from meat production.
Q4: I buy environmentally friendly or sustainably sourced products even if they are more expensive.
Q5: I give clothes that I no longer wear to charities or to others who are in need.
Q6: I walk, ride a bike, car pool, or use public transportation to help reduce air pollution.
Q7: I reduce my consumption (use less, avoid buying products) in order to help the environment.
Q8: I limit my use of energy (such as electricity or natural gas) in order to reduce my impact on the environment.
Q9: When buying foods, I pay attention to labels that indicate people growing and working in food production are treated fairly (“Fair Trade” labels).
Q10: I reduce my water consumption for environmental reasons.

Using IBM SPSS Software, the scale reliabilities of sustainable consumer attitudes, sustainable consumer behaviours, intrinsic religiosity and spirituality were computed: SCAscale (alpha = .82), SCBscale (alpha = .79), IntrinsicReligiosity (alpha = .92) and SpiritualityScale (alpha = .89), respectively (Table 5). All for factors met or exceeded accepted standards for Cronbach's alpha (Nunnally, 1979).

Table 8: Scales, number of items and Cronbach's alphas

Scale	Number of items	Cronbach's Alpha
SCAscale	8	0.82
SCBscale	10	0.79
IntrinsicReligiosity	3	0.92
SpiritualityScale	9	0.89

8. RESULTS

After choosing measures, we will firstly show descriptive statistics of sample in Table 6, and examine the reliability of the collected data, then test hypotheses, in this section. Before the study was conducted, the survey was sent to the Human Subjects Ethics Committee of Middle East Technical University and approval was taken regarding ethical rules and regulations concerning human subjects. An online survey was conducted using Survey Monkey (surveymonkey.com), with the sample obtained from various Facebook groups in which people from different nationalities and cultures can be found. These Facebook groups include, AFS (American Field Service), Erasmus, AIESEC (Association Internationale des Etudiants en Sciences Economiques et Commerciales) and international student association groups of some universities, such as Middle East Technical University International Students Association. A total of 298 people from 59 different countries participated in the survey, with the top four participant countries being Germany (14.1%), United States (10.4%), Turkey (10.1%), and Italy (7.4%). The demographic characteristics of the sample show that 76.2% of the participants are female and 23.5% are male, with the average age of 26.2 years. Forty percent of the participants claim that they are atheists or agnostics, 36.2% of the participants are Christians, and 12.1% of the participants are Muslims. The percentage of Jewish, Buddhist and Hindu participants are 4% in total, and 7.67% of the participants say that they follow some kind of other religions. Participants' yearly incomes and their education level were also asked, and results show that half of the participants either graduated from college or completed graduate schools, whereas income levels of participants varied widely (21.67 % under \$15.000/year, 5% over

\$150.000/year). The demographic data can be seen in tables in the Appendix section of the thesis.

Table 9: Descriptive Statistics

Religious Affiliation	N		Spirituality	Intrinsic Religiosity	SCAs	SCBs
		Mean	34.19	8.33	36.33	34.76
Christian	108	Std. Dev	6.37	3.91	5.27	6.24
		Mean	31.33	8.33	33.60	37.00
Jewish	3	Std. Dev	5.03	5.03	3.05	9.64
		Mean	35.75	10.94	35.16	29.33
Muslim	36	Std. Dev	5.39	3.03	5.07	5.87
		Mean	34.25	7.25	38.5	36.00
Buddhist	4	Std. Dev	6.34	3.09	3.00	7.48
		Mean	38.00	10.00	40.40	40.80
Hindu	5	Std. Dev	6.48	2.64	3.20	4.76
		Mean	27.10	3.78	36.22	35.00
Atheist	119	Std. Dev	7.89	1.71	5.60	6.46
		Mean	33.00	7.34	37.08	36.04
Other	23	Std. Dev	4.80	3.47	4.91	5.32

We wanted to examine the validity of the data obtained. So, we examined relationships that were shown to exist in past research and compared our data to see if they are similar. Similar relationships in our data would give us confidence that the data is valid.

As mentioned before in socio-demographic and economic variables section of this thesis, gender difference is an effective indicator of sustainable consumer behaviours, and past research (e.g. Blocker and Eckberg, 1997; Gilg et al., 2005) demonstrate that females behave more environmentally

friendly. In order to examine whether our collected data is valid or not, a t-test analysis was conducted between genders.

The conducted independent-samples t-test between males (n=70) and females (n=227) demonstrates that there is a significant difference in the scores between males' sustainable consumer behaviours (M=32.23, SD=7.07) and females' sustainable consumer behaviours (M=35.08, SD=6.19) conditions; $t(295)=3.254$, $p < .001$ (Table 7). These results show that females behave more environmentally friendly than males, which is in line with previous researchers such as Blocker and Eckberg (1997) and Gilg et al. (2005), lending credibility to our data.

Table 10: Sample reliability t-test according to gender

	Male (n=70)		Female (n=227)		t-test
	Mean	Std. Dev.	Mean	Std. Dev.	
SCBscale	32.23	7.07	35.08	6.19	3.254**
**p < .001					

Another validity check is computed according to education and sustainable consumer behaviours. Previous research shows that education and sustainable consumer behaviours are positively related (Tanner and Kast, 2003; Samdahl and Robertson, 1989; Van Liere and Dunlap, 1980; Greeley, 1993; Casey and Scott, 2006; Fernandez-Manzanal et al., 2007). To see whether our data shows the same pattern as the previous research, a correlation test between education level of participants and sustainable consumer behaviours was done (Table 8). According to the correlation coefficient, it can be said that our data is valid, again. So, both tests show the validity of our data, as both of them are in line with previous research.

Table 11: Correlation Coefficients for Validity Check

Correlations	SCBscale	Education Level
SCBscale	1	0.129*
Education Level	0.129*	1
*=Correlation is significant at the 0.05 level		

In order to see whether there is a self-generated validity, a common method variance test is conducted. The results show that there is no bias. According to results, total variance for a single factor is 32.46% which shows that common method bias does not affect the data (variance for a single factor is below 0.5).

Using the selected scales, hypothesis testing was performed, which can be seen in the next section. Firstly, we will test whether intrinsic religiosity is negatively related to SCAs and SCBs, then we will test whether spirituality is related to SCAs and SCBs.

8.1. Test of Hypothesis 1a

Hypothesis 1a states that there is a negative relationship between intrinsic religiosity and SCAs. In order to test this, firstly, SCAscale is analysed using multiple linear regression by looking at the relationship between the variables. Having dependent variable as SCAscale, firstly, independent variables are chosen as gender, religion, annual family income, IntrinsicReligiosity, SpiritualityScale, education level, NORA (non-organizational religious activity) and ORA (organizational religious activity). Model summary, ANOVA and coefficients can be seen in the appendix section of the thesis (Appendix C) that shows the independent variables explain almost 14% of the variance in people's sustainable consumption

attitudes. Statistically, intrinsic religiosity, education level and SpiritualityScale play a significant role in the level of sustainable consumer attitudes. So, another multiple linear regression was run using statistically significant independent variables.

A multiple linear regression was calculated accordingly to predict the level of sustainable consumer attitudes based on the levels of participants' intrinsic religiosity, spirituality and education levels. A significant regression equation was found ($F(3,294)=16.399$, $p < .000$), with an adjusted R square of .135. Moreover, multicollinearity statistics for this result was checked, which shows the VIF (variance inflation factor) to be 1.574 for intrinsic religiosity, 1.572 for spirituality and 1.004 for education, which means there is no appreciable multicollinearity among factors (when $VIF < 5$, there is no significant effect of VIF) (Akinwande et al., 2015).

So, the results show that intrinsic religiosity ($\beta = -4.025$, $p < 0.05$) and sustainable consumption attitudes are negatively related (Table 9), which shows that hypothesis 1a is supported. So, we can say that there is a negative relationship between intrinsic religiosity and SCAs.

8.2. Test of Hypothesis 1b

Hypothesis 1b states that there is a negative relationship between intrinsic religiosity and SCBs. Another multiple linear regression analysis test is used to analyse the hypothesis 1b. Having SCBscale as a dependent variable, and gender, religion, annual family income, IntrinsicReligiosity, SpiritualityScale, education level, NORA, ORA as dependent variables, the relationship between intrinsic religiosity and SCBscale is analysed.

According to the analysis, four statistically significant independent variables (intrinsic religiosity, spirituality, education and gender) can be seen.

This shows that, unlike for sustainable consumer attitudes, gender also plays a significant role that influences people's sustainable consumer behaviours.

Accordingly, another multiple linear regression was run to predict the level of sustainable consumer behaviour based on the levels of people's intrinsic religiosity, spirituality, education levels and gender. A significant regression equation was found ($F(4,293)=7.515, p < .000$) with an adjusted R square of .081. As tested for the previous hypothesis, multicollinearity is again checked. The collinearity diagnostics demonstrate that there is no appreciable multicollinearity among factors, as all the VIFs are below 1.586 (VIF lower than 5 is acceptable) (Akinwande et al., 2015).

When the results are analysed, similar to sustainable consumption attitudes, for sustainable consumer behaviours there is also negative relationship between intrinsic religiosity ($\beta = -3.935, p < 0.05$), which demonstrates that hypothesis 1b is supported (Table 10).

8.3. Test of Hypothesis 2a

So, the results of multiple linear regression of testing hypothesis 1a and hypothesis 1b, showed us that the relationship between intrinsic religiosity and SCAs/SCBs is negative. Now, the relationship between spirituality and SCAs, and the relationship between spirituality and SCBs will be tested, respectively.

As stated in the hypotheses 2a, we expect spirituality to be related positively with SCAs. The same multiple linear regression in hypothesis 1a can be used to test hypothesis 2a, i.e. dependent variable is SCAscale, independent variables are education, SpiritualityScale, IntrinsicReligiosity, annual family income, religion, gender, NORA and ORA. Significant independent variables are intrinsic religiosity, education level and

SpiritualityScale, which gives the significant regression equation ($F(3,294)=16.399, p < .000$), with an adjusted R square of .135.

According to the results, the degree of spirituality of an individual plays an important role in participants' sustainable consumer attitudes ($\beta = 6.230, p < 0.05$), which shows that hypothesis 2a is supported (Table 9).

8.4. Test of Hypothesis 2b

According to the hypothesis 2b, we expect spirituality to be related positively with SCBs. Having SCBs as dependent variable, when the analysis is done (as in hypothesis 1b), education, spirituality, intrinsic religiosity and gender are shown to be statistically significant independent variables. The significant regression equation is ($F(4,293)=7.515, p < .000$) with an adjusted R square of .081.

The results show that spirituality is positively related to SCBs, as stated in hypothesis 2b ($\beta = 3.168, p < 0.05$) (Table 10). So, hypothesis 2b is also supported.

Table 12: Regression Coefficients - Dependent Variable: SCAscale

Variable	Regression Coefficient	Significance
Constant	19.983	< .001
IntrinsicReligiosity	-4.025	< .001
Spirituality Scale	6.230	< .001
Education Level	3.514	< .001

Notes: Adjusted R Square=.135, F=16.399, p < .001

Table 13: Regression Coefficients - Dependent Variable: SCBscale

Variable	Regression Coefficient	Significance
Constant	11.532	< .001
Education Level	2.585	< .01
Spirituality Scale	3.168	< .002
IntrinsicReligiosity	-3.935	< .001
Sex	2.506	< .013

Notes: Adjusted R Square=.081, F=7.515, p < .001

From the results of multiple regression analysis, it can be seen that spirituality has a positive relationship with sustainable consumer behaviours and attitudes, whereas intrinsic religiosity has negative effect, which shows that all of the hypotheses are supported.

When the bivariate correlations of those scales are analysed, SCAscale is significantly correlated with SCBscale (.644) and SpiritualityScale (.254), $p < .001$, whereas SCBscale is negatively correlated with intrinsic religiosity (-.146, $p < .05$) (Table 11).

Table 14: Pearson correlation coefficients of scales

Correlations	SCBscale	SCAscale	Int. Rel.	Spirituality
SCBscale	1			
SCAscale	0.664**	1		
Int. Rel.	-0.146*	-0.012	1	
Spirituality	0.54	0.254**	0.602**	1
**=Correlation is significant at the 0.01 level, *=Correlation is significant at the 0.05 level				

9. DISCUSSION

In the previous section, we tested our hypotheses using multiple regression analysis. Now, we will discuss how these findings fit with past research, the differences between past research and this thesis, and contributions of this research.

From the results of the hypothesis testing, firstly, we demonstrated the negative relationship between intrinsic religiosity and SCAs/SCBs. Although some past research (Woodrum and Wolkomir, 1997; Minton et al., 2015) found a positive relationship between religiosity and sustainable consumption attitudes and behaviours, here it was found to be negative. Such inconsistencies in results may be because of the different understandings of religion as Kalamas et al. (2014) mentioned. For example, Woodrum and Wolkomir (1997) found a positive relationship between religious attendance and individual behaviour, but a negative relationship between fundamentalism and individual environmentalist behaviours. First of all, the religious attendance, which is a part of extrinsic religiosity, may not be the best option to measure religiosity, as criticized by other researchers (Vitell et al., 2005; Koenig and Bussing, 2010; Donahue, 1985). In that sense, the positive relationship between religious attendance and individual environmentalist behaviours may have been attributable to other factors. Religious fundamentalism however, may include both intrinsic and extrinsic values. However, religious fundamentalism is asked in categories identified as *liberal, moderate or fundamentalist*, which does not give a wide choice to participants. Minton et al. (2015) focused on both religiosity and religious affiliations in their paper. Minton et al. (2015) measured religiosity with a one-item question “*Please indicate your degree of religious belief*”.

Although such religiosity measures are used in the past (Cohen, Siegel, and Rozin, 2003; Hossain and Onyango, 2004), use of single-item indicators limits the ability to interpret the construct and to ascertain its reliability. Using a scale which strictly differentiates extrinsic religiosity and intrinsic religiosity may have yielded different results. Besides these past studies, the results of our study, which show that intrinsic religiosity is negatively related to SCAs and SCBs, are in the same line with other research, which found negative relationships between religiosity and environmentally friendly behaviours. For example, the study of Greeley (1993), which was held in the United States, demonstrated that non-Christians act more environmentally friendly than Christians. Also, the results of the study by Eckberg and Blocker (1989) show that non-religious people in the United States are more environmental friendly than religious people. Also, Hand and Van Liere (1984), argued that because of the Western religious understanding, which holds that humans have mastery over nature, religious people tend to show less environmental friendly attitudes and behaviours. We think that separating spirituality from intrinsic religiosity in scales might have been more effective at delineating a clear effect, which may show that intrinsic religiosity and spirituality affect values of people (altruistic, egoistic, biospheric) differently.

Our results also show that spirituality has a positive influence both on sustainable consumer attitudes and on sustainable consumer behaviours. As past researchers like Carroll (2004) and Saroglou (2013) said spirituality may be influential to affect the value system of an individual. Altruism, for example, is affected by spirituality, which may result in sustainable consumer behaviours, ultimately, as in the model of Stern (2000). Moreover, many researchers tried to seek the relationship between altruism and sustainable consumer behaviours. Altruism can be considered as a way of living, that aims to produce positive impacts on the needs of other people (Corral-

Verdugo, 2009). According to Corral-Verdugo et al. (2009), altruism is one of the psychological components of pro-environmental behaviours and their study also demonstrated that altruism affects pro-sustainability orientation positively. Moreover, Schultz (2001) says that altruism is one of the fundamental components of motivation for environmental protection and used Stern's Value-Belief-Norm Theory in his research to understand the relationship between values (altruistic, biospheric and egoistic), which also shows that altruistic values and environmental concerns are positively related. To understand the motives behind recycling behaviours, Ebreo et al. (1999) used a term called "*environmental altruism*" to see the effect of altruism on recycling behaviours, which showed another positive relationship. So, it can be said that the effect of spirituality on altruistic values (Carroll, 2004; Saroglou, 2013) turns into, eventually, sustainable consumer behaviours.

In the line with the features of spirituality, such as universality, discovering of wholeness, connectedness and nonjudgmentality, the expectation of positive influence on sustainable consumer attitudes and behaviours is supported by our thesis. Moreover, the new environmentalist movement or "*the dark green religion*" (Taylor, 2013) postulates that spiritual people are more environmental friendly. So, we believe that the results of this thesis are in the same line with previous researchers, like Carroll or Saraoglou, who think that spirituality may influence sustainable consumer attitudes and behaviours.

Religious affiliation, as discussed before (Minton et al., 2015; Minton and Kahle, 2013; Hand and Crowe, 2012; El-Bassiony, 2014) may also play a role in terms of sustainable consumption. Although globalization has increased global interconnectedness, a globally-unified culture has not been created, and thus, different values and consumer lifestyles continue (El-

Bassiony, 2014). For example, El-Bassiony (2014) argues that marketers who belong to the Christian cultures have not been as successful as in their own countries as in the countries where Islam is the leading religion. When the impact of religious affiliation on sustainable consumer attitudes and behaviours is investigated, such as Minton et al. (2015), it may be expected that Western religious affiliation is negatively associated with SCAs and SCBs than other religious affiliations. The main reason can be given as the belief of Western religions, that is, God created nature and thus, God and people have superior position to nature, and the pantheistic view of the Eastern religions, i.e. God exists in and through all elements of the nature (Sarre, 1995). However, in this thesis, the comparison between religious affiliations was not conducted. Such comparison, according to our data, may not be valid, as there may be other background factors that can also affect sustainable consumer attitudes and behaviours, combined with the religious affiliations of participants. In some countries, recycling technologies may not exist, or costs of environmentally friendly goods may be too expensive. For example, the countries of Muslim participants are generally not developed, so they may not have the choice to behave sustainable, because of limited infrastructure, product availability, and other opportunities for green behaviours. However, participants from the EU countries, in which sustainable consumer behaviours are encouraged via EU rules, laws and obligations, and which has a more developed infrastructure supporting sustainable consumption, which means some governments may encourage sustainability policies. Moreover, GDP and income levels are generally more in developed countries than developing countries, so participants from developed countries are able to pay more for environmentally friendly products or sustainable products, such as Fair-Trade items. From this perspective, besides only focusing on religiosity and spirituality, countries of

participants are also an important variable, which creates an obstacle for us to anticipate the relationship of SCA and SCB with different religious affiliations. As one of the main goals of this thesis is to understand attitude-behaviour gap from an international perspective, the results of this thesis, i.e. spirituality is positively related to SCAs and SCBs, and intrinsic religiosity is negatively related to SCAs and SCBs, may be useful for discussion of dominant social paradigm and new environmental paradigm as well, which may be useful to understand attitude-behaviour gap in societies. This goal of the thesis leads us to the discussion of culture's dominant social paradigm and new environmental paradigm.

From a theoretical perspective, culture's dominant social paradigm (DSP) consists of the values, metaphysical beliefs, institutions or habits that collectively provide social lenses through which individuals and groups interpret their social world (Milbrath and Fisher, 1984). Park and Allaby (2013) define the current DSP as *"the view that humans are superior to all species, the Earth provides unlimited resources for humans and that progress is an inherent part of human history."* DSP is generally examined by dividing into two domains; socio-economic and cosmological. Being one of the domains pertaining to the DSP, cosmological domain questions the existence generally, like structure (atomism-holism), relation (domination-submission) and organisation (anthropocentric-ecocentric) of nature itself, and this domain provides assumptions how values, beliefs and behaviours develop (Kilbourne, 1998). Polonsky et al. (2014) argue that, when there is an underlying DSP values in a culture, environmental knowledge, promoting stronger environmental attitudes may not result in sustainable consumer behaviours. For example, some environmental friendly consumption behaviours may be affected by motivations without environmental concerns such as, one might have a vegetarian diet which is beneficial for the

environment, but may reflect religious conviction (Peattie, 2010). Thus, more research is needed how collective values can be evolved to raise awareness of the need to change the DSP (Polonsky et al., 2014). Although some researchers think that changing consumer behaviour relies on environmental knowledge (Hobson, 2003 and Eden et al., 2007), there is an inconsistency regarding whether environmental knowledge influences sustainable behaviour or not (Peattie, 2010). Improving consumer environmental knowledge and promoting stronger environmental attitudes and values may not really lead to behavioural change in a pro-environmentalist way (Peattie, 2010). However, it is mentioned that in practice, intuitive and emotional factors are more influential for behavioural changes (Peattie, 2010).

Against this anti-ecological DSP, Dunlap and Van Liere (1978) said that, new ideas and a new value based view have emerged and called this the “New Environmental Paradigm” or NEP, and defined as “*establishing values, perspectives and political, economic, and technological institutions, which reflect the principles of sustainable development*”. Stern (2000) sees this new phenomenon as development of some values in which conventional egoistic values, such as individualistic and materialistic consumer values, are balanced with social altruistic and oriented biospheric values. The Value-Belief-Norm theory of pro-environmental behaviour by Stern (2000) shows that biospheric, altruistic, and egoistic values are the fundamental steps that leads to NEP. Similar to NEP, the theory of post-materialism by Ronald Inglehart (1990) says that there is a shift from values including economic and physical security to non-material values, which may lead people to behave more environmentally friendly.

As an example of NEP, many informative statements and publications prepared by religious groups, can be shown. Those are prepared by religious

groups to motivate society to act more environmentally friendly, which aligns with a new term called “eco-theology”. Eco-theology is emerged in order to understand the relationship between religion and nature, especially on the issues like environmental concerns. (Harper and Simkins, 2008). One of the key elements of eco-theology claim that nature is full with spiritual values and has a sacramental meaning and being a part of nature, humans should protect nature as a moral obligation, and thus religious groups should include such ethic (Harper and Simkins, 2008). Thus, we see that the spiritual dimensions of religiosity are the doing force behind pro-environmental attitudes and behaviours, as this thesis suggests.

Many examples can be given respect to the eco-theology discourse. For example, Western religion leaders have been making statements and publications in order to encourage people for sustainable behaviours (Minton et al., 2015). In 1986, leaders from five of the world’s major religion leaders (Christianity, Buddhism, Islam, Hinduism and Judaism) made statements concerning the environmental nature of their religious traditions, called the Assisi Declarations (Tomalin, 2009). The declarations are important for being the first significant attempt by different religious traditions to come together and discuss the relationship between their teachings, practices and the environment (Tomalin, 2009). Specifically, the sacredness of nature and rediscovery of nature in order to solve the environmental crisis are argued (Tomalin, 2009). In the fall of 2004, the National Association of Evangelicals (NAE) produced a position statement about environmental degradation, global warming and tried to promote environmental sustainability in order to change the perception of God-given dominion over the world (Djupe and Gwiasda, 2010). Also, many other religious organizations such as the National Council of Churches, the World Council of Churches, the Coalition on the Environment and Jewish Life and the Islamic Foundation for Ecology

and Environmental Sciences have been working on to increase the attention on the environment (Harper and Simkins, 2008). Another example is that since 1980's religious books, such as Sider (1982) were published to lead to a simple life with less consumption. While such statements and publications may affect the motivations for sustainable consumer attitudes and behaviours of extrinsically religious people, they may also affect the motives for intrinsically religious people. For example, the statement by Schaeffer (1970) "*people have to respect nature because God made it*" aims at more intrinsic values than extrinsic ones. Although the results of our thesis show a negative relationship between intrinsic religiosity and sustainable consumer attitudes and behaviours, it may be expected in the future, as spirituality becomes a central focus of religion and more important than an extrinsic view of religion, with the motivations of the NEP or eco-theology attitude-behaviour gap may be closer.

Before going to the limitations and future work section, we would like to mention what possible contributions this thesis offers. First of all, the idea of spirituality and the examination of it with sustainable consumer attitudes and behaviours was introduced, which has not been done in past studies. The inconsistent results regarding religiosity and sustainable consumer attitudes and behaviours, and as argued by Carroll (2004) and Saroglou (2013), the results of this thesis show that spirituality is an effective factor in sustainable consumer attitudes and behaviours. Also, the results show that spirituality has a positive relationship with them, while intrinsic religiosity has negative regardless of individuals' religious affiliation, which is supported by an international and multi-cultural study.

Moreover, two different valid scales regarding sustainable consumer attitudes and behaviours, separately are created, which can be used in the

future works based on five-point Likert scales. The SCAscale consists of 8 items, which were inspired by past scales such as, the GREEN Scale by Haws et al. (2014), or the Fair-Trade items scale by Tanner and Kast (2003). The reliability statistics of the scale show that Cronbach's Alpha is 0.84, which was deemed sufficient, as mentioned before and the SCAscale focuses only on the attitudes unlike other scales in the literature, as many previous scales do not separate attitudes and behaviours. Another scale, which was created by us is SCBscale. SCBscale consists of 10 items and inspired by the items from past researchers, such as Webb et al. (2008), Minton et al. (2015), Tanner and Kast (2003) or Song and Ko (2017). The items are constructed to measure behaviours related to recycling, food consumption, purchasing habits, reusing, transportation, consumption reduction and responsible consumption. Also, SCBscale is reliable, whose Cronbach's Alpha is 0.79.

Lastly, understanding attitude-behaviour gap is essential for a sustainable world. Turning people's knowledge and attitudes into sustainable behaviours is a difficult but a must task for a better future. Therefore, as the first step, the reason behind this gap should be understood carefully for a better environment. Although past researchers have been trying to understand this gap by looking at the relationship between religiosity and sustainable consumer behaviours, there was a lack of spirituality and its effects in past literature. We believe, this thesis can be used to help understand the attitude-behaviour gap because the results demonstrate that spirituality affects both sustainable consumer attitudes and behaviours positively. So, more research on spirituality, spiritual values, altruism, and sustainable consumer attitudes and behaviours may be useful for understanding the attitude-behaviour gap in sustainability related research.

So far, in this section our results are discussed why spirituality is important is explained. Also, the importance of religious affiliations and participants' countries are explained. Two cultural theories (NEP and DSP) regarding environmentalism and religion are discussed, and lastly some contributions of this thesis are explained. Now, some limitations of this thesis, and some directions for future research will be explained.

10. LIMITATIONS AND FUTURE WORK

Before concluding the thesis, we will discuss several limitations, which can show a path for some possible future work.

Firstly, the sample characteristics of participants are a limitation for this thesis. Following the main principles of spirituality, such as universality, discovering of wholeness, connectedness and nonjudgmentality, this thesis aimed to have participants from different cultures, backgrounds and religious affiliations. However, participants' religious affiliations do not let this thesis to focus on the differences between Western and Eastern religions like Minton et al. (2015) as participants who believe in Eastern religions (Buddhists and Hinduists) are only 3%. Also, as mentioned in the discussion section of the thesis, comparing different religious affiliations was not reliable for this thesis. In order to get rid of the effect of different variables and to have a deeper understanding in comparing religious affiliations, it may be better to compare two countries, whose GDPs, income levels or environmental policies are close. Also, it may be better to look at one culture and multiple religious affiliations within it, if possible. In the future, such studies may show how participants' different religious affiliations may affect SCAs and SCBs, using conceptualization of religiosity and spirituality as in the same study.

Although we tried to collect data from different cultural backgrounds as much as possible, most of the participants were from Germany, United States of America, Turkey and Italy. Our data collection method, i.e. online survey, may not have reached to some participants who may not have an internet connection. This may be a reason why we did not get many participants who belong to Eastern religious affiliations. Moreover, our online

data collection method, using Facebook groups for example, may be another reason why our data from Eastern religious affiliations are too low compared to Western religious affiliations and atheists, as Facebook may not be the most popular social media tool in those countries. Aiming to more participants from Eastern religions, may be also useful for the future research.

The last limitation regarding our data is the fact that females participated in our survey more than males. This may be because of social media usage or the participant countries, but we believe this also shows more interest in sustainability related issues by females. Just like the fact that females behave more sustainable than males, demonstrated by many past research, female participants may have been more interested in participating in our survey because of the topic. In the future, female-male balance in results can be helpful for studies.

Another limitation is the availability of spirituality and sustainable consumer attitudes and behaviour scales. For spirituality, as mentioned before, there are many definitions and understandings in the literature. Some of the measures in the literature use spirituality as religiosity, whereas some of the measures separate those terms.

Similar to the spirituality scale, sustainable consumer attitudes and behaviours scales focuses on only one pillar of sustainability, which are either social, economic or environmental. However, we wanted to measure sustainability with its all pillars, which led us to create our own scale by examining past scales. While doing that, some items are not included to focus on the core sustainability measures. For example, items related to carbon footprint or fossil fuel consumption are not included in our SCAs and SCBs scales. In the future, we believe that such scales can be useful for researchers explaining sustainable consumption.

So far in this section, major limitations and some difficulties we encountered are mentioned, which may be useful for the research in the future. From this point on, we will conclude what has been done in this thesis.

11. CONCLUSION

After mentioning the major limitations, we have seen while preparing this thesis, we will now conclude what is done in this thesis. The introduction section of this thesis gives an overview discussion of sustainability and continues with the background of sustainable consumer behaviours, which examines why people may behave sustainably. Then, examining past research, religiosity and religious affiliation and their possible effects on sustainable consumer attitudes and behaviours are mentioned. Spirituality is separated from religion, and in conceptual development section, why spirituality may be an important and influential factor for understanding sustainable consumption is mentioned. All of these sections led us to say that spirituality is positively related to SCAs and SCBs, whereas intrinsic religiosity is negatively related to SCAs and SCBs. Selecting our sample and scales, mentioned in the methodology section, we tested our hypotheses, in which we demonstrated that our hypotheses are supported.

We believe that our results may be useful to better understand the attitude-behaviour gap which may be important for the future and for us having in the new environmental paradigm, something that many researchers have been aiming to understand. Without understanding consumers' values and perspectives of individuals, it is difficult to reach to a sustainable world. As religion is one of the most important actors in value development, both in cultural and individual level, many researchers have been focusing on it. Moreover, religion is mentioned as a useful data for many marketers because it does not have geographic bounds (Minton et al., 2015). However, so far, the relationship of religion with SCAs and SCBs has shown inconsistent results.

When spirituality and its features are investigated, it can be said that spirituality may be more useful to analyse than religiosity to understand sustainable consumer attitudes and behaviours, which is also mentioned as an important factor that affects sustainable consumer attitudes and behaviours.

In this thesis we analysed participants from different cultures, backgrounds and religions, to see whether spirituality affects sustainable consumer attitudes and behaviours by measuring intrinsic religiosity, spirituality, religious affiliations, sustainable consumer attitudes and behaviours are measured, using an online survey. The results of this thesis show a positive relationship between spirituality and sustainable consumer attitudes and behaviours. Although this thesis cannot explain attitude-behaviour gap by investigating these, this international and intercultural study can show the positive affect of spirituality on sustainable consumer attitudes and behaviours, which may be a more holistic way to investigate than religiosity. Therefore, we believe that this thesis may be useful for consumer researchers, who may be interested in understanding spirituality, religiosity and sustainability, and marketers who try to implement marketing strategies for sustainable goods or services, by understanding spirituality values, religious affiliations and religiosity levels.

12. APPENDICES

Appendix A – Demographics

Table A 1: Sample Data - Religious Affiliation Frequencies

Religion	Frequency	Percent
Christian	108	36.2
Jewish	3	1
Muslim	36	12.1
Buddhist	4	1.3
Hindu	5	1.7
Atheist	119	39.9
Other	23	7.7
Total	298	100

Table A 2: Sample Data - Annual Family Income Frequencies

Annual Family Income	Frequency	Percent
Under \$15000	64	21.5
Between \$15,000 and \$29,999	65	21.8
Between \$30,000 and \$49,999	58	19.5
Between \$50,000 and \$74,999	41	13.8
Between \$75,000 and \$99,999	31	10.4
Between \$100,000 and \$150,000	24	8.1
Over \$150,000	15	5
Total	298	100

Table A 3: Sample Data - Education Level Frequencies

Education Level	Frequency	Percent
High School	56	18.8
Bachelor 1st	22	7.4
Bachelor 2nd	30	10.1
Bachelor 3rd	28	9.4
Bachelor's Degree	76	25.5
Master's Degree	21	7
Masters and more	65	21.8
Total	298	100

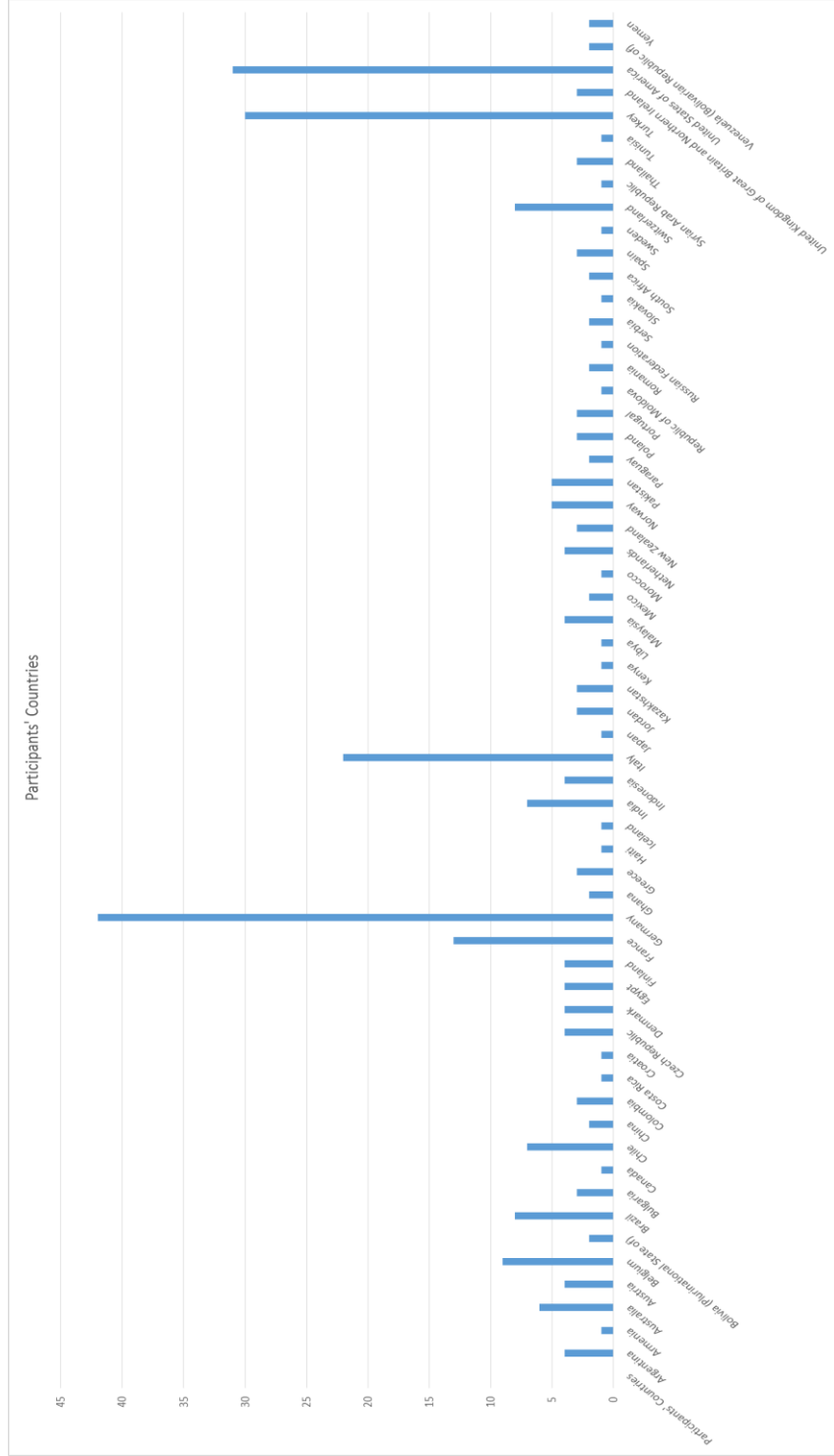


Figure A 1: Sample Data - Participants' Countries

Appendix B – t-test Results

Table B 1: Grouping Statistics for SCBscale according to participants' gender

SCBscale	N	Mean	Std. Dev.
Male	70	32.22	7.07
Female	227	35.07	6.19

Table B 2: Independent Samples Test – GV: Gender TV: SCBscale

	Levene's Test		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2tailed)	Mean difference	Std. Error difference
Equal variances assumed	2.02	0.15	-3.25	295.00	0.001	-2.85	0.87
Equal variances not assumed			-3.03	103.65	0.003	-2.85	0.94

Appendix C – Regression Outputs

Appendix C1 – Regression Outputs for:

DV: SCAscale

IVs: NORA, ORA, Income, Education, Gender, Religion, SpiritualityScale, IntrinsicReligiosity

Table C1 1: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.40	0.160	0.137	4.93

Table C1 2: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1344.51	8	168.06	6.90	0.00
Residual	7039.37	289	24.35		
Total	8383.88	297			

Table C1 3: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	25.04	2.2		11.38	0.00
IntrinsicReligiosity	-0.29	0.12	-0.21	-2.29	0.02
SpiritualityScale	0.30	0.04	0.44	6.42	0.00
EDUCA	0.48	0.13	0.19	3.53	0.00
Income	0.23	0.16	0.07	1.40	0.16
SEX	0.51	0.66	0.04	0.76	0.44
REL	0.12	0.14	0.05	0.85	0.39
ORA	-0.43	0.35	-0.11	-1.23	0.21
NORA	0.26	0.30	0.07	0.89	0.37

Appendix C2 – Regression Outputs for:

DV: SCAscale

IVs: Education, SpiritualityScale, IntrinsicReligiosity

Table C2 1: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.38	0.143	0.135	4.94

Table C2 2: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1201.85	3	400.61	16.04	0.00
Residual	7182.03	294	24.42		
Total	8383.88	297			

Table C2 3: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	27.56	1.38		19.98	0.00
IntrinsicReligiosity	-0.36	0.09	-0.273	-4.02	0.00
SpiritualityScale	0.29	0.047	0.422	6.23	0.00
EDUCA	0.47	0.135	0.19	3.51	0.00

Appendix C3 – Regression Outputs for:

DV: SCBscale

IVs: NORA, ORA, Income, Education, Gender, Religion, SpiritualityScale, IntrinsicReligiosity

Table C3 1: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.33	0.11	0.084	6.24

Table C3 2: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1379.18	8	172.39	4.40	0.00
Residual	11282.34	289	39.04		
Total	12661.53	297			

Table C3 3: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	24.28	2.78		8.72	0.00
EDUCA	0.47	0.17	0.15	2.76	0.00
SpiritualityScale	0.20	0.06	0.23	3.38	0.00
IntrinsicReligiosity	-0.50	0.16	-0.30	-3.12	0.00
Income	0.29	0.20	0.08	1.40	0.16
REL	0.09	0.1	0.03	0.54	0.58
SEX	2.02	0.84	0.13	2.39	0.01
NORA	0.58	0.38	0.13	1.53	0.12
ORA	-0.34	0.45	-0.07	-0.76	0.44

Appendix C4 – Regression Outputs for:

DV: SCBscale

IVs: Education, SpiritualityScale, IntrinsicReligiosity, Gender

Table C4 1: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.30	0.093	0.081	6.26

Table C4 2: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1178.06	4	294.51	7.5	0.00
Residual	11483.46	293	39.19		
Total	12661.53	297			

Table C4 3: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	26.04	2.25		11.53	0.00
EDUCA	0.44	0.17	0.14	2.58	0.01
SpiritualityScale	0.18	0.05	0.22	3.16	0.00
IntrinsicReligiosity	-0.45	0.11	-0.27	-3.93	0.00
SEX	2.09	0.83	0.14	2.50	0.01

Appendix D - Questionnaire

Questionnaire

This study is conducted by Middle East Technical University graduate student, Anil Berkin. The aim of the study is to examine participants' sustainability-related behaviors and attitudes among other values and beliefs. Your participation is very valuable for the research to be valid. Participation is completely voluntary, and you are free to withdraw at any time. Completing the questionnaire will take approximately 5 minutes. Your answers will be anonymous and individual results will not be shared with anyone, except the project investigators. If you have any questions or concerns, you can contact Anil Berkin via anil.berkin@metu.edu.tr.

1. Please indicate how frequently you engage in each of the following behaviours

1 = Strongly Disagree, 2 = Disagree, 3 = Neither, 4 = Agree, 5 = Strongly Agree

- It is very important to me that the people involved in growing the foods or producing the goods I buy are treated fairly.
- I am concerned about wasting the resources of our planet.
- I make a serious effort to consume less now in order to preserve our resources.
- I believe that it's necessary to reduce consumption in order for future generations to have what they need.
- It is important to me that the products I use do not harm the environment.
- I feel a sense of responsibility for workers in lower income countries that produce the things I buy.
- It's important to me to decrease the amount of things I buy in order to minimize impact on the environment.
- I would describe myself as environmentally responsible.

2. Please indicate how frequently you engage in each of the following behaviours

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always

- I recycle the materials I use (glass, paper or metal).
- I make a special effort to buy products made from recycled materials.
- In my diet I substitute vegetables for meat in order to reduce the environmental impact from meat production.
- I buy environmentally friendly or sustainably sourced products even if they are more expensive.
- I give clothes that I no longer wear to charities or to others who are in need.
- I walk, ride a bike, car pool, or use public transportation to help reduce air pollution.
- I reduce my consumption (use less, avoid buying products) in order to help the environment.
- I limit my use of energy (such as electricity or natural gas) in order to reduce my impact on the environment.
- When buying foods, I pay attention to labels that indicate people growing and working in food production are treated fairly (“Fair Trade” labels).
- I reduce my water consumption for environmental reasons.

3. How often do you attend church/mosque/synagogue or other religious meetings?

1 = Never, 2 = Once a year or less, 3 = A few times a year, 4 = A few times a month, 5 = Once a week, 6 = More than once a week

4. How often do you spend time in private religious activities, such as prayer meditation or any holy book study?

1 = Rarely or never, 2 = A few times a month, 3 = Once a week, 4 = Two or more times a week, 5 = Daily, 6 = More than once a day

5. Please indicate how frequently you engage in each of the following behaviours.

1 = Definitely not true, 2 = Tends not to be true, 3 = Unsure, 4 = Tends to be true, 5 = Definitely true

- In my life, I experience the presence of the Divine (i.e. God).
- My religious beliefs are what really lie behind my whole approach to life
- I try hard to carry my religion over into all other dealings in life

6. Please indicate your level of agreement with each of the statements below.

1 = Strongly Disagree, 2 = Disagree, 3 = Neither, 4 = Agree, 5 = Strongly Agree

- I feel that on a higher level all of us share a common bond.
- All life is interconnected.
- There is a higher plane of consciousness or spirituality that binds all people.
- Although individual people may be difficult, I feel an emotional bond with all of humanity.
- I believe that there is a larger meaning of life.
- I believe that death is a doorway to another plane of existence.
- I believe there is a larger plan to life.
- There is an order to the universe that transcends human thinking.
- I believe that on some level of my life is intimately tied to all of humankind.

7. What is your age?

8. What is your gender?

1 = Female, 2 = Male, 3 = Other (Specify)

9. What is your nationality?

10. What is your current religion, if any?

11. My total family income last year was?

12. What is the highest level of education you have completed?

Thank you for participating in the survey.

For SurveyCircle users (www.surveycircle.com): The Survey Code of this survey is: ZSZD-YMJH-YY13-7MT3

Appendix E – Tez Fotokopisi İzin Formu

TEZ FOTOKOPİSİ İZİN FORMU

PROGRAM

SEES	<input type="checkbox"/>
PSIR	<input type="checkbox"/>
ELT	<input type="checkbox"/>

YAZARIN

Soyadı: Berkin

Adı: Anıl

Bölümü: Sürdürülebilir Çevre ve Enerji Sistemleri

TEZİN ADI (İngilizce) : Cross-national Examination of Cultural Values, Belief Systems and Sustainable Consumer Attitudes and Behaviours

TEZİN TÜRÜ: Yüksek Lisans Doktora

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir.
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir.
3. Tezimden bir bir (1) yıl süreyle fotokopi alınmaz.

TEZİN KÜTÜPHANEYE TESLİM TARİHİ:

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