Zero Waste Shopping as a Consumer Behavior: The Case of North Cyprus (TRNC)

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ABSTRACT

Waste mismanagement has been in a rise since the era of civilization began. This increase has been due to the increase in population and standards of living in communities, rapid growth of the urban areas and economic boom. An estimated 547,000 tons of municipal waste was recorded in Cyprus in 2017, which was a 0.36% increase from 2016. Such statistics leads the consumers into performing actions aimed at protecting or preserving the environment such as recycling the products or repurchasing eco-labelled products. In line with the issue of global waste and consumers having a growing intention to for positive environmental actions, this has led to the concept of zero-waste lifestyle being introduced to address the problem.

The primary aim of this paper was to empirically establish which factors influence zero waste shopping in North Cyprus. This study investigated how factors of behavior influence zero-waste shopping. The was carried out using a quantitative research approach. The survey was conducted through the use of a questionnaire administered amongst 300 consumers. A convenience sampling approach was utilised in data collection process.

A path analysis using PLS-SEM was conducted to test the proposed hypothesis. The results of the analysis showed that three of the seven hypothesis were accepted. Attitude and moral norms were found to influence consumers' zero-waste shopping intention in TRNC; and intention was found to influence consumers' zero-waste shopping behavior in TRNC. On the other hand, subjective norms, perceived

behavioral control, self-identity and past behavior were rejected as factors that influence consumers' zero-waste shopping intention in TRNC.

Keywords: Waste, Zero-Waste, Zero-Waste Shopping, Consumer Behavior.

ÖZ

Atıkların kötü yönetimi sorunu, insanoğlunun modern yaşama geçmesi ile artmıştır. Bu artış, toplumlardaki nüfus ve yaşam standartlarının yükselmesi, kentsel alanların hızlı büyümesi ve ekonomik patlamadan kaynaklanmıştır. Bu tür istatistikler, tüketicileri ürünleri geri dönüştürmek veya eko etiketli ürünleri yeniden satın almak gibi çevreyi korumaya veya korumaya yönelik eylemler gerçekleştirmeye yönlendiriyor. Küresel atık sorunu ve tüketicilerin olumlu çevresel eylemlere yönelik artan niyetiyle paralel olarak, bu, sorunu çözmek için sıfır atık yaşam tarzı kavramının ortaya çıkmasına neden olmuştur.

Bu makalenin temel amacı, Kuzey Kıbrıs'ta sıfır atık satın alma davranışını hangi faktörlerin etkilediğini deneysel olarak belirlemektir. Bu çalışma ile, sıfır atık ürünlere yönelik satın almayı etkileyen faktörlerin hangi yönde etkiledikleri araştırılmıştır. Araştırmamız nicel araştırma yaklaşımı kullanılarak gerçekleştirilmiştir. Anket, 300 tüketici arasında uygulanan bir anket kullanılarak gerçekleştirilmiştir. Veri toplama sürecinde kolayda örnekleme yaklaşımı kullanılmıştır.

Çalışma için öngörülen hipotezleri test etmek amacı ile PLS-SEM kullanılarak iz analizi yapılmıştır. Analiz sonucunda öngörülen yedi hipotezden üç tanesi kabul edilmiştir. Tutum ve moral normları KKTC'de sıfır atık davranışı niyetini etkilediği; ve niyetin de tüketicinin sıfır atık davranışını etkilediği tesbit edilmiştir. Bunun yanında, Kuzey Kıbrıs Türk Cumhuriyetin'de öznel normlar, algılanan davranış kontrolu, öz kimlik ve önceki davranışların bireylerin sıfır atık davranış niyetini

etklimediği tesbit eidlmiştir. Bulgulara dayalı olarak desteklenen ve/veya reddedilen hipotezleri belirlemek için çoklu regresyon analizi yapılmıştır.

Anahtar Kelimeler: Atık, Sıfır Atık, Sıfır Atık Satınalma, Tüketici Davranışı.

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INTRODUCTION

1.1 Background

Since the beginning of the era of civilization and industrialization, waste mismanagement has been a global concern (Ferronato, & Torretta, 2019). Waste is considered in the modern society as the icon of ineffectiveness and misallocation of wealth and natural resources in a nation (Zaman & Lehmann, 2013). Waste generation is hence seen as the challenge which most societies face in the world. The World Bank (2018) estimates that by 2050, there will be a 70% increase in the global waste if no action is taken to prevent this. The latter goes on by stating that global waste is expected to have increase by a high 3.4 billion tons 30 years in the future. An estimated 547 thousand tons of municipal waste was recorded in South Cyprus in 2017, which was a 0.36% increase from the waste generated in 2016 (Nicolaides, 2017). In 2015, the figure of waste estimated by the CIA in the island – North and South – was 541 thousand tons (CIA, 2021). Waste limitation is hence key in both a global sense and for North Cyprus (Zaman et al., 2013).

According to researchers (Akkucuk, 2015; Song, Li & Zeng, 2015), waste figures have been on the rise as a result of the growth in population, rise in the standards of living in communities, rapid growth of the urban areas and the economic boom. The later then state that for this growing threat of waste generation to be slowed down and prevented, a concept of sustainability in consumption and living is needed. Song et al.

(2015) further state that there exist various kinds of waste including industrial wastes, food waste, biomedical waste, electronic waste, and packaging waste. The researchers keep on by mentioning that when it comes to consumers and shopping, food and packaging waste are the most relevant ones. For this reason, food and packaging waste are the preferred waste analyzed in the study.

Foukaras and Toma (2014) stipulate that individuals (i.e., consumers) have a growing interest towards pro-environmental behavior to waste. The researchers mention that such a behavior leads the consumers into performing actions that can protect and preserve the environment such as recycling the products or repurchasing eco-labelled products. In line with the issue of global waste and consumers having a growing intention to for positive environmental actions, this conflict has led to the concept of zero-waste lifestyle being introduced to address the problem (Phillips, Tudor, Bird, & Bates, 2011).

1.2 Problem Statement

Latif, Omar, Bidin and Awang (2012), state that in Northern Cyprus, there is an increase realization in the part of the consumers of the importance of environmental issues and a growing concern on the problem of waste. This has made them to be welcoming to the methods to solving the issue of waste and open to using pro-environmental products hence leading to the discussion of zero-waste shopping.

Various researchers (Marangon, Tempesta, Troiano, & Vecchiato, 2014) mentioned that, investigating the awareness, intention and behavior of consumers to food waste. However, there is currently only a limited amount of both conceptual and empirical

research to assess consumers' behaviors towards zero-waste shopping (Plumb, Downing, & Parry, 2013).

The problem statement for this research is that there is limited or no knowledge pertaining to the behavior of consumers with regards to zero-waste shopping in the Turkish Republic of Northern Cyprus (TRNC). This led to the problem question: What is the behavior of consumers with regards to zero-waste shopping in the case of TRNC?

1.3 Research Objectives

The objectives of this study include the primary, secondary and methodological objectives.

1.3.1 Primary Research Objective

This study's primary objective is to identify consumers' behavior towards zero-waste shopping in TRNC.

1.3.2 Secondary Research Objectives

To satisfy the primary objective of this study, the subsequent secondary objectives have been devised.

- To determine the factors that influence the consumer behavior towards zero-waste shopping in TRNC.
- To determine which are utmost important factors for consumer behavior towards zero-waste.
- To empirically investigate zero-waste shopping as a consumer behavior in TRNC.
- To discover the factors that support the application of the formulated contextual model, and

- To provide recommendation to the TRNC consumers on how to increase the zero-waste shopping behavior in the country.

1.3.3 Methodological Research Objectives

For the primary and secondary objectives mentioned above to be achieved, the following methodological objectives have been identified:

- To choose an appropriate research methodology and design that suits the study.
- To undertake theoretical investigations on the waste, consumer behavior and zero-waste.
- To develop a hypothesized model illustrating the relationship between the independent variables influencing zero-waste shopping behavior.
- To test the hypothesized model of the relationship between the independent variables (the behavioral factors) and dependent variable (zero-waste shopping behavior).
- To source primary data from respondents who have ever shopped in TRNC and to statistically analyze the data.

1.4 Contribution of the Study

This study aims at increasing the information and knowledge that is currently limited with regards to consumer behavior with regards to zero-waste shopping. Since consumers are key in ensuring environmental sustainability, this study provides opportunity to companies to add consumer behavior in their strategies towards sustainability to increase their effectiveness. Also, this study aims to inform firms or markets on what to be done to ensure the promotion practice and selling of sustainable products.

1.5 Hypotheses Developed

The following hypotheses were raised to determine if there exist empirical relationships between the intention determinants (attitude, subjective norms, perceived behavioral control, moral norms, self-identity, and past experience), intention and zero-waste behavior in North Cyprus.

- H_1: Attitude influences a consumer's zero-waste shopping intention in TRNC.
- H_2: Subjective Norms influences a consumer's zero-waste shopping intention in TRNC.
- H_3: Perceived Behavioural Control influences a consumer's zero-waste shopping intention in TRNC.
- H_4: Moral Norms influences a consumer's zero-waste shopping intention in TRNC.
- H_5: Self-identity influences a consumer's zero-waste shopping intention in TRNC.
- H_6: Past Experience influences a consumer's zero-waste shopping intention in TRNC.
- H_7: Intention influences an individual's zero-waste shopping behavior in TRNC.

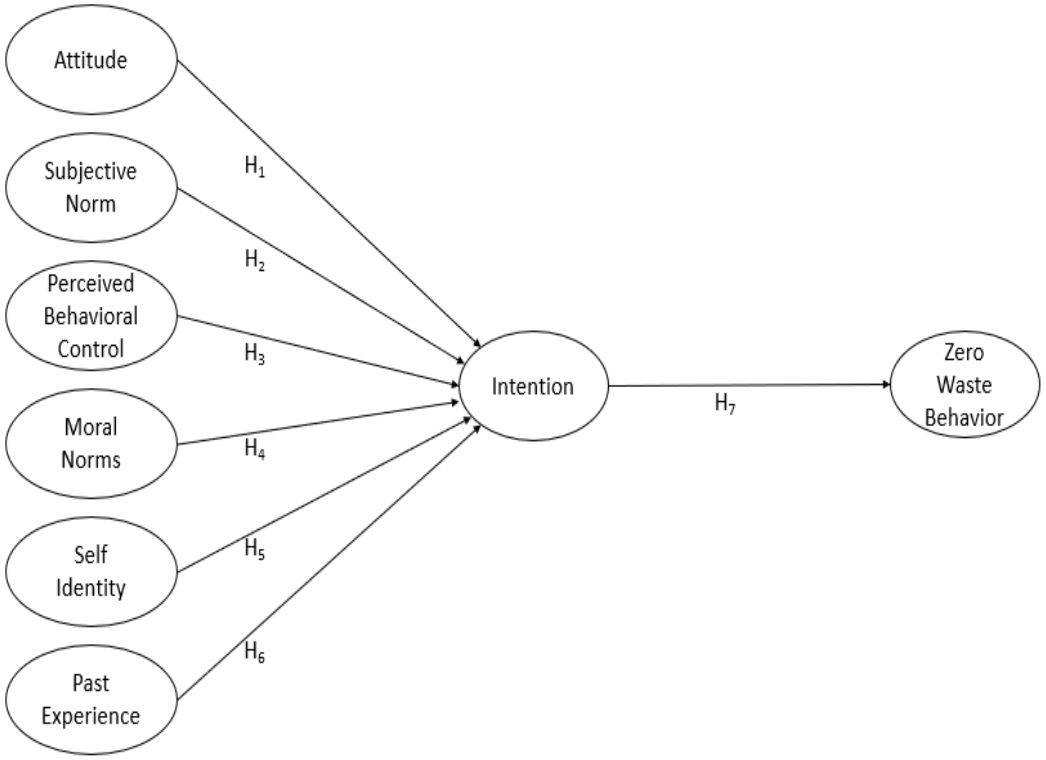


Figure 1.1: Proposed Hypothesized Model of the Study

1.6 Research Methodology

The research study has followed the quantitative research design. This design focused on acquiring data numerically. According to Collins and Hussey (2014), the advantages of working with numbers is that they have similar meaning irrespective of the person and descriptive and inferential statistics can be used when using numbers. On the other hand, in qualitative design, the data is represented in words. This hence justifies why quantitative research design is the most appropriate.

Before distributing the main questionnaire, a pilot study was performed on the questionnaire. Arain, Campbell, Cooper, and Lancaster (2010) define a pilot study as an initial study performed to ensure that there is no problem with regards to the language, design, and feasibility of the questionnaire. The pilot study in this research

was conducted among 20 potential respondents to determine if the survey was adequate and fit for a larger scale.

The sample size for the study was 300 respondents. These respondents were to be found in the TRNC to fit the description and aim of the study. The sampling methods utilised within this research were, a convenience sampling as the sample is conveniently located to the researcher and a snowball sampling. The respondents were reached using online surveys to get as many respondents as possible and reach the goal of 300 respondents.

The scales used for the questionnaire were taken from previous studies which proved to be reliable and hence adapted to fit the study. All the variables being tested had a five-point Likert scale with its anchor points being (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree and (5) Strongly Agree. Five items assessed Attitude, e.g., "Zero-waste shopping is a good idea". Four items assessed Subjective Norms, e.g., "Most people important to me think I should engage in zero-waste shopping". Four items also assessed Perceived Behavioural control, e.g., "I know how to practice zero-waste shopping". Four items assessed Moral Norms, e.g., "I feel an obligation to perform zero-waste shopping practices". Four items assess Self-identity, e.g., "I am the type of person who acts in a zero-waste way". Three items assessed Past Experience, e.g., "I have made zero-waste shopping practices a behaviour". Four items assessed Intention, e.g., "I intend to avoid waste in the near future". Five items assessed Zero-waste Shopping Behaviour, e.g., "I frequently reuse shopping bags".

For analysing data, two statistical computer packages were be used SPSS and SmartPLS 3. An Exploratory factor analysis (EFA) was used in establishing the validity of the instruments. Factor loadings of less than 0.5 were deleted in the EFA. Variables that loaded onto two or more instruments (cross-loaded) will also be left out of the analysis. The internal consistency was determined by calculating the Cronbach's alpha coefficients of the items. A Cronbach alpha cut-off point off 0.6 was used in the analysis. This is the case as George and Mallery (2003) identified a Cronbach coefficient of 0.6 as being acceptable.

In the process of data analysis, statistical data analysis methods such as: means, standard deviations, Pearson product-moment correlation coefficient and multiple regression were used. For this study, the Pearson *r* was used to measure the relationship between independent variables influencing zero-waste shopping behaviour in TRNC. The study applied a path analysis using PLS-SEM to identify the supported and rejected hypothesis.

Chapter 2

ZERO-WASTE AND THE THEORETICAL CONCEPTS OF BEHAVIOR

2.1 Introduction

In the preceding chapter (Chapter One), the topic, zero-waste shopping as consumer behavior; case of North Cyprus was introduced. This included the aim of the study, background information about the topic. The problem statement, the research objectives of the study, the research methodology, and the brief outline of the study were also established.

The purpose of this chapter is to understand how zero-waste can influence the behavior of consumers. In this chapter, an analysis of waste and the various types of wastes are analyzed. The zero-waste strategies are also discussed. Subsequently, the behavioral models which are identified with regards to consumers will be discussed. Thereof, the chapter will conclude with a summary.

2.2 Waste

Waste is defined by Basu (2009) as any product that regardless of what is being paid for it, the consumer will dispose of it in the future after use. Oelofse and Godfrey (2008) concur, stating that waste refers to any material in either a solid or liquid or gaseous state which is discarded because it is both unwanted and unvalued for the

owner. For the study, waste is regarded as any material or object of any nature, which is disposable regardless of if it is recycled or reused.

Ginige, Sparks and Formosa (2010) state that as per data collected from Eurostat, in 2002, countries in Europe produced approximately over 1.3 billion tons of waste. The estimated figure in waste was identified to be from various sectors including construction, municipal, manufacturing, water supply and energy production. By the end of 2012, the total amount of waste estimated in South Cyprus was 63000 tons (Zorpas, Voukkali, & Loizia, 2017).

Waste is often regarded as a sign of the misallocation of resources present in a society as well as that society's ability to be efficient. Numerous types of wastes exist but the most renowned and popular ones include industrial wastes, biomedical waste, electronic waste, food waste and packaging waste (Song, Li, & Zeng, 2015). Five types of wastes will be discussed below.

2.2.1 Industrial Waste

This refers to waste created due to activities and works carried out in factories, mills, and mines (Song et al., 2015). Amasuomo and Baird (2016) add that this waste is created from the raw material used in the process of producing a product. Industrial waste can be in the form of hazardous, non-hazardous, or industrial wastewater (The Energy and Resources Institute, 2014). An estimated 7.6 billion tons of industrial waste is said to be made yearly in the United States (Awuchi, Awuchi, Amagwula, & Igwe, 2020). Examples of such wastes include dirt and gravel, scrap lumber, chemicals, scrap metal, solvents, masonry and concrete and many others (Awuchi et al., 2020).

2.2.2 Biomedical Waste

This refers to waste created during the provision of healthcare from hospitals, clinics, nursing homes, health facilities and medical health laboratories or from research carried out by medical institutes (Pichtel, 2005; The Energy and resources Institute, 2014). The report goes on to state that 80% of the general biomedical waste produced is often not infectious and can be well managed if isolated while the remaining 20% is infectious and hazardous. Such waste is discharged through a sanitary sewer system, in its gaseous form or in its solid form (Garvin, 1995). Biomedical waste is dangerous for the environment as it leads to the spread of infectious diseases including HIV/AIDS, Hepatitis, malaria and many others (Shaida & Singla, 2019). According to Yaman (2020), by the end of 2018 in Turkey, 87,545 tons of medical wastes was collected from 1550 medical facilities. The researcher emphasizes that this figure was 4% more than what was collected in 2017.

2.2.3 Electronic Waste (E-Waste)

E-waste is broadly described as any electrical or electronic devices which are discarded, unusable, broken and are available in surplus (The Energy and Resources Institute, 2014). Literature (Song et al., 2015; The Energy and Resources Institute, 2014) state that throughout the last decade, e-waste has experienced the fastest growth in the waste stream. This speedy growth has been linked with the rapid growth in technology and innovation around the world. According to Baldé, Forti, Gray, Kuehr and Stegmann (2017), a shocking 44.7 million metric tons of electronic wastes was being produced by all the countries in the world in 2016, compared to the 42.5 million metric tons generated in the previous year 2015. Numerous equipment can be categorized as e-waste for example televisions, monitoring and control equipment, vacuum cleaners, sports equipment and many others (Vats, & Singh, 2014).

2.2.4 Food Waste

Food waste is defined as any food substance which is disposed of, or which cannot be used because it has lost its nutritious edible materials intended for human consumption. Food can be declared as waste in five different stages which include during the agricultural production phase, after harvesting and storing, during the processing stage, during the distribution stage and lastly during the consumption stage (Parfitt, Barthel, & McNaughton, 2010; Song et al., 2015). Examples of food wastes include fruits and vegetables, baked goods, dry food, snacks and condiments, prepared food and leftovers. Hoover and Moreno (2017) released a report of a research conducted in the joint cities of Nashville, Denver and New York and discovered that coffee, banana and chicken are the most wasted types of foods among these cities. The South African Department of Environmental Affairs (2018) stated that the country produces as much as 31 tons of food each year of which approximately 10 tons is lost each year.

2.2.5 Packaging Waste

This refers to any discarded products made of materials used primarily in containing, protecting, handling, delivering, and making the goods presentable (Song et al., 2015). Packaging wastes examples plastic papers, wood, metal, glass, plastic containers, shrink wrap plastics corrugated cardboard (Dixon-Hardy, & Curran, 2008; Statistics Explained, 2020). In 2017, the amount of packaging waste materials among the European Union (EU) nations increased by 3.0% resulting in a rise in the volume of packaging waste to 77.5 million tons (Statistics Explained, 2020). Ginige et al. (2010) state that the European Environment Agency has predicted an increase in packaging waste by 40% from the level it was at in 1990 to what it will be by end of 2020.

From the above, it can be seen that there are various types of wastes. Since the study focuses on consumers, food waste and packaging waste will be the main types of wastes considered. This is the case as food and packaging waste are often the main waste that consumers can associate themselves with especially when it comes to shopping scenarios.

2.3 Food Waste

In the sub-sections below, the causes and impact of food waste will be discussed.

2.3.1 Causes of Food Waste

Studies conducted by the Barilla Center for Food and Nutrition (BCFC, 2012) and the Food and Agriculture Organization of the United Nations (FAO, 2011), mention that in industrialized countries, food waste is created as a result of the over production. Farmers and food producers produce more than the amount of food demanded with the aim of ensuring that the agreed quantity demanded is supplied. This overproduction can also be as a result of the unpredictive nature of certain factors such as the weather or pest attacks. With more food being produced than demanded in this scenario, this leads to an increase in food waste.

Food waste also originates due to the demand for top appearance quality standards that consumers and supermarkets require pertaining fresh products. Supermarkets tend to reject some food stuff from the producers or farmers if their produce do not meet the required standards. Such required standards may concern the weight, the size, shape, and appearance of the produce. This scenario sometimes results in a large portion of the crops not leaving the farms (FAO, 2011).

Consumers often do not store their food in the proper storage means or places. Such consumers are ignorant of the instructions stated on the labels on how the food products can be safely stored to avoid the food from getting bad. The ignorance of the fact that storage conditions vary depending on the climate and temperature in a home for the food stuff leads to increase in food waste (BCFC, 2012).

In addition to the above, the BCFC (2012) mention that another cause of food waste can be that consumer's misinterpretation of the wording on the food label. Consumers most often are ignorant of the difference between the phrases "best if used by" and "use by". Such ignorance has led in consumers going for products with a longer remaining shelf life. This leads to food waste as the products on the shelf with a shorter life can still be edible before they reach the expiry date.

Another cause of food waste can be the fact that consumers have the notion that it is available in abundance, and they can afford to waste food. Many food outlets including retail stores and restaurants sell meals or food stuff at fixed prices to entice consumers to buy them. This creates an attitude of affordability to the consumers and results in them wasting food as they know they can get more at any time (FAO, 2011).

2.3.2 Impacts of Food Waste

The impacts of food waste can be environmental, economic, and social in nature. Each of these categories will be discussed.

An environmental impact of food waste is that it results in a waste of land. Song et al. (2015) state that when land is used in the production of food which becomes waste, the quality of the soil will be deteriorating. They add that such a situation will result

in the use of synthetic inputs later in the future which shall result in pollution and diminishing of arable land. According to the latter, in 2007, nearly 1.4 billion hectares of land were used for the production of unconsumed food. During the production of food, land is being used up in excess for the production of several of the final food produce (BCFC, 2012).

By throwing away food, an individual is essentially wasting a huge volume of freshwater that is being used in its (food) production. Wasting food therefore has an environmental impact on water as large volumes of water which could be used for other activities were used for food which is being wasted (BCFC, 2012; Song et al., 2015).

Food waste also increases the likelihood of the threat of global warming and climate change in the world. Wasted food that ends up being thrown away produce a large number of unwanted pollutants and gases. Such gases cause huge harm to the earth's atmosphere and in return lead to global warming and climate change (BCFC, 2012; Parameshwari, 2017; WWF, 2017).

The main economic impact of food waste is that it has led to the increase in the prices of food. As seen above, for food to be produced, natural resources and other agricultural products need to be used in the process. With the growing demand for food and the growing amount of food wasted, food becomes more expensive (FAO, 2011).

Nahman and De Lange (2013) mention that the social impact of food waste is that majority of the food discarded is actually still edible. This wasted food could still be used to feed the needy if it were distributed.

According to Marangon, Tempesta, Troiano and Vecchiato (2014), another social impact arising from food waste is that the increase in the price of food makes food less accessible for the bottom of the pyramid or underprivileged consumers. Thus, resulting in the increase of the already high number of undernourished individuals worldwide.

2.4 Packaging Waste

For the sake of the study, plastic waste which is an example of packaging waste will be the main form of waste considered. In the sub-sections below, the causes and impacts of packaging waste will be discussed.

2.4.1 Causes of Packaging Waste

The WWF (2019) state that the main cause of packaging waste is the price at which the packaging products (plastics) are sold. The report states that the market price of most of these plastics being used are quite low compared to the lifespan cost for nature and the environment. The costs that the packaging products have to society and nature are considered to be high as these costs are long lasting costs. The cheapness of these plastics results in its consumers being comfortable in buy as many as possible.

Furthermore, the fact that plastic products are created from the combination of numerous materials reduces the cost of production. This situation results in the creation of plastics that cannot be easily recycled hence increasing the room for packaging waste in the world. This is the case as such plastics can neither be reused or recycled

making them to be use approximately once or twice and then be discarded (WWF, 2019).

WWF (2019) emphasize that the total amount of plastics created by companies also leads to packaging wastes. Companies produce so many plastics each day and with the growing global population coupled with the low price for the plastics, consumers can purchase many plastics and discard at will.

2.4.2 Impacts of Packaging Waste

The impacts of packaging waste will be discussed looking at the environmental, economic and social effects.

The main impact of packaging waste is the fact that it creates plastic packaging waste pollution for the environment. Such a situation is the effect of the huge tons of plastic wastes that go to the garbage dump and break down. This has a major waste disposal impact in the dump (Song et al., 2015).

According to a report by the United Nations Environment Programme (UNEP, 2018), packaging waste reflected in plastic bag litter can result in the increased spread of pandemics in such areas. The report explains that such litter blocks sewage systems and as a result, attract mosquitoes and other pests. These pests can increase the risk of the transmission of vector borne diseases like malaria.

In addition to the above environmental impacts, packaging waste can result in wildlife entanglements. This entanglement in packaging, specifically plastic waste usually leads to injury and death of affected animals. Research goes on to state that an

estimated amount of one thousand marine turtles die each year as a result of being entangled in plastic waste (WWF, 2019).

Packaging waste presents an economic impact to the various industries such as the tourism, fishing and shipping industries of a country. Countries that rely on these industries for economic stability and increase in their GDP have to deal with the issue of packaging. These industries have difficulties as even though the packaging materials are recyclable for use, it is usually at a financial cost for the country (UNEP, 2018).

Furthermore, packaging waste has a future economic impact as reflected in the future cost of removing the waste. The future cost of removing packaging waste is estimated and expected to be higher than the cost of avoiding people from littering today (UNEP, 2018). The report states that per year in Europe an estimated €630 million is spent in cleaning the shores and beaches. With such high figures and the increasing packaging waste globally, it is fair to say that the prediction given by the report is valid if nothing is done.

The social impact of packaging waste is that it will lead to the welfare loss of certain infrastructures. Welfare loss in this instance looks at the fact that the packaging waste will reduce the beauty of an area. A park or touristic site which is contaminated with packaging waste will make the area unattractive to civilians and visitors (UNEP, 2018).

Another social impact of packaging waste is that it leads to soil and water contamination. This is the case as micro and nano plastics that are released from both

clothes when being washed and from cosmetics respectively accumulate in wastewater systems. The wastewater treatment process removes the plastic particles and they become mud which is being used often as fertilizer. Using these as fertilizer ends up causing several microplastics to end up in the soil (WWF, 2019).

From the above sections on the causes and impacts of both food and packaging waste, it is clear that these wastes are quite detrimental for living conditions. This harm incurred as a result of waste has resulted in countries and companies implementing zero-waste as a means to minimize the effect of waste. The term zero-waste will be discussed next, identifying the strategies implemented during the process.

2.5 The Concept of Zero-waste

A couple of years back, waste management was not considered important for a society hence leading to the topic receiving little or no attention unlike other sectors like water or energy. However, in recent years, as a result of the growing impacts that waste has had on society, human beings have driven more towards sustainability (Song et al., 2015). Lehmann (2010) mention that waste avoidance should be a priority for people who aim at reducing the carbon emission, followed by recycling, reusing and then incineration. Zero-waste is the suggested concept to be used as an approach for avoiding waste creation and hence addressing the global issue of increasing waste (Phillips, Tudor, Bird, & Bates, 2011).

Literature by Son et al. (2015) state that zero-waste was first coined in 1973 by Dr. Paul Palmer when speaking of the act of recovering resources from chemicals. Zero-waste is then defined as the process where waste is avoided through the use of various practices to enable the successful recovery of its resources (Veleva, Bodkin, &

Todorova, 2017; Zero-waste International Alliance ZWIA, 2018). The concept of zero-waste is based on encouraging a circular economy where the used materials as well as the materials which individuals do not need become raw materials for a new product (Alfred, 2016). The principal goal of the zero-waste concept is hence to stop the needless creation waste and make sure that waste is reused or recycled.

The problem of waste had been a problem for a long time but recently, the introduction of zero-waste has made waste to be seen from a promising perspective (Lehmann, 2010; Zaman, 2014). This is because rather than having the usual image and opinion of waste as something which has to be disposed of; the concept of zero-waste identifies waste as a valuable resource (Connett, 2007; Lehmann, 2010; Liyanage, Waidyasekara, & Mallawaarachchi, 2019). Waste should hence be recouped, assembled, sorted, handled and developed. Zaman (2014) clarifies that by performing zero-waste activities ensures that the products discarded can be recovered and made available for use again, hence increasing the lifespan of the product. This concept of zero-waste therefore removes the end-of-life phase of most products and ensures that the resources of the products are used in the best means possible with little or no environmental effects (Liyanage et al., 2019; Zaman, 2014).

According to various researchers (Hashim, Xi, & Sien, 2018; Lehmann, 2010) zero-waste can be easily implemented in the daily lives of people by ensuring that waste is not even created. They add that avoiding the consumption of wasteful products, increasing the recycling levels, assessing the resources coming from wastes and changing the attitudes and behaviors individuals have will help in the implementation of zero-waste.

With regard to individual consumers, zero-waste can become part of their lifestyle through zero-waste shopping. Guarnay (2018), states that zero-waste shopping has to do with the eradication of plastics used for packaging, the purchase of products which are locally produced, or the purchase of products really needed to avoid the creation of unwanted waste. Consumers who promote zero-waste usually when going shopping go prepared, taking along alternative and reusable packaging options such as glass containers, material shopping bags and trolley bags (Good, 2015). Advocates of zero-waste practices also purchase made from waste products that are often durable compared to the disposable products (Pujol-Mazzini, 2017).

2.6 Zero-waste Strategy through the Circular Economy

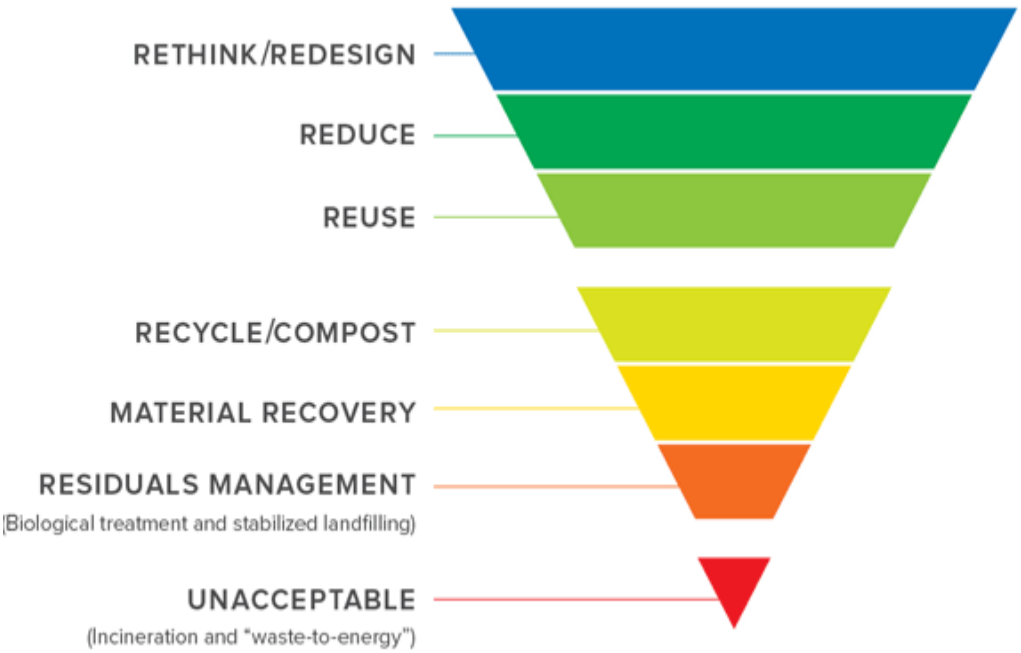
From the definitions provided in the previous section, it can be seen that zero-waste creates a shift in a country from being a linear to a circular economy. A linear economy is defined as one where the natural resources are being converted into waste and thrown away in the landfill after use. This type of economy does not promote such natural resources to be used to the best of their potential and fully before being thrown away (Nizar, Munir, Irvan, & Amir, 2018). Andrews (2015) states that the linear economy can be drawn back to the eighteenth century during the industrial revolution where a take-make-use-dispose model of consumption was upheld. This economy can therefore be deemed unreliable for the process of preventing waste.

The circular economy model is a reliable model which on the other hand aims to design unwanted waste so that it can be treated and used again, enable more value to be tapped from the resources (Hamid, Skinder, & Bhat, 2020; Esposito, 2019). The circular economy is hence a viable economic method to make use of and reprocess products

and other materials time and again, thus promoting zero-waste (Bocken, de Pauw, Bakker, & van der Grinten, 2016; Song et al., 2015).

With the urgent need to move away from the linear economy which does not take waste prevention into account, the circular economy will encourage the idea or waste prevention and waste eradication and also lead to a sustainable environment (Ghisellini, Cialani, & Ulgiati, 2016).

The ZWIA (2015) came up with a hierarchy table to indicate and rank the best and worst practices related to zero-waste. These practices can be seen as the strategies which can be used in zero-waste. This hierarchy is portrayed in Figure 2.1 illustrated below.



(Source: Zero Waste International Alliance 2018)

Figure 2.1: The Zero-Waste Hierarchy

In the sub sections below, each of the steps illustrated in Figure 2.1 will be briefly discussed.

2.6.1 Unacceptable

The ZWIA (2018) as can be seen in the figure, places the practices which should not be considered when performing zero-waste and name them as being unacceptable strategies. The practices which are mainly considered unacceptable here are the act on incinerating and transforming waste to energy. The alliance states that methods that promote the harmful dumping of waste from the damaged products that can be recycled should be discouraged. They also postulate that practices such as energy systems which require the creation of wastes should not be acceptable.

2.6.2 Residuals Management

The next strategy from the bottom in zero-waste according to ZWIA (2018) is residual management which entails the various methods that individuals or companies can use in managing the issue of waste. The strategy can be done by identifying the waste materials and using the acquired information to avoid waste creation. The strategy also encourages that the resources from waste should be preserved and not thrown or discarded. In this strategy, ZWIA (2018) also mentions that responsible management of the waste should also be taken by containing and containing any toxic waste products.

2.6.3 Material Recovery

Material recovery here deals with the companies or individuals ensuring that they maximize the waste materials from the dumps. The wastes should be separated according to glasses, plastics and any other domain during the extensive source separation period (ZWIA, 2018).

2.6.4 Recycle/ Compost

Under the recycling strategy for zero-waste, ZWIA (2018) mention that it is important that the waste materials are put back in their materials cycle. Furthermore, in the recycling strategy, the aim should be to maintain diversion methods that will ensure that the waste materials are used to the best of its capabilities. In the process of encouraging zero-waste the alliance also encourages that composting should be given priority emphasizing that such a process can be done either at home or on site.

2.6.5 Reuse

With reuse as a strategy, individuals or company should ensure that they maximize use waste materials or products. This can be done by ensuring that the product is well maintained, repaired and/or redecorated. Done so will enable the products to retain its usefulness, value and perform the function. The alliance goes further to state that in light of reusing as a zero-waste strategy, the products can also be maintained so as to serve alternative purposes (ZWIA, 2018).

2.6.6 Reduce

ZWIA (2018) states that waste can be reduced by planning the purchase and consumption of perishables so as to avoid them from getting spoiled and not being consumed. The alliance also states that individuals as well as companies should minimize the use of toxic materials. They state that to reduce waste, it is important that products made from materials that enable smooth recycling should be selected. Implementing sustainable purchasing techniques are also encouraged as a means of reducing waste and promoting zero-waste (ZWIA, 2018).

2.6.7 Rethink/ Redesign

According to the ZWIA (2018), rethink and redesign is considered to be the best zero-waste strategy as seen with it being at the very top of Figure 2.1. The alliance states

that it is necessary in this strategy that individuals design and purchase recyclable, reusable as well as non-toxic materials so that they can be used for long. In the process of redesigning, it is also important that incentives are provided for the cyclical use of materials. The alliance lastly encourages that individuals and companies should educate themselves and discourage systems that lead to unnecessary consumption (ZWIA, 2018).

From the above strategies it can be seen that zero-waste is a practical approach which needs individuals and companies to either reduce, reuse, recycle or redesign the way waste is being used. In the literature on zero-waste, the literature established that zero-waste shopping will be effective and a success depending on various factors. These the degree of waste prevention, the level of recycling, the valuation of the resources originated from waste and lastly the behavior change. Having touched on all the strategies, in the following section, behavior shall be analyzed.

2.7 Theory of Behavior

Behavior is described by Bergner (2011) as the situation where an individual tries to bring about a state of affairs with the aim of either maintaining the current state or changing it. Levitis and Freund (2009), provide a biological definition for behavior as the internally coordinated responses (actions or inaction) of whole living organisms (individuals or groups) to internal and/or external stimuli, excluding responses more easily understood as developmental changes. From these, behavior can be defined as the action(s) performed by an individual, motivated or in the face of certain situations.

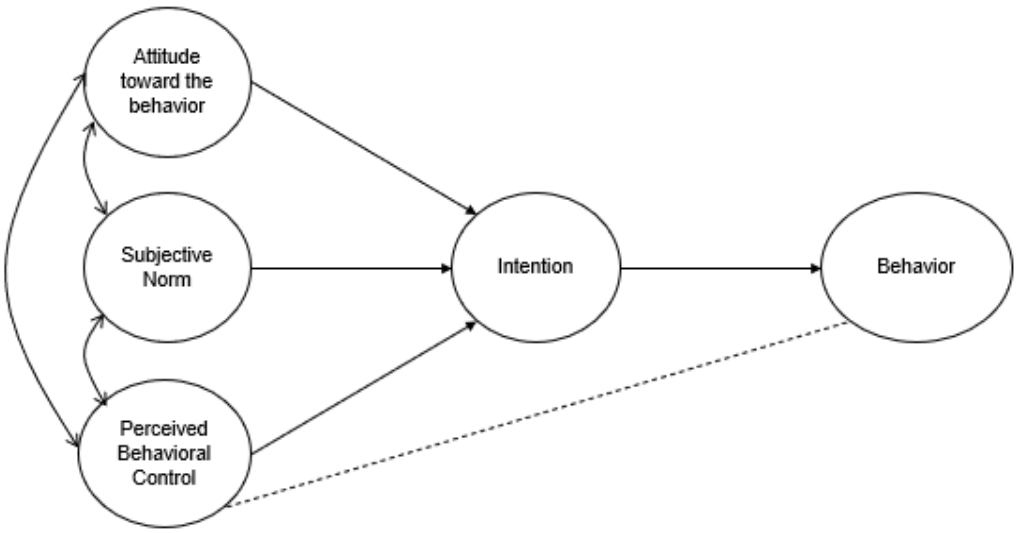
Throughout the years several theories have been brought up to understand the behavior of human beings. These theories include the theory of planned behavior developed by

Icek Ajzen in 1985, the theory of interpersonal behavior developed by Harry C. Triandis in 1977, the theory of reasoned action developed by Ajzen and Fishbein in 1980 and the model of altruistic behavior developed by Schwartz in 1977 (Khan, Ahmed, Najmi, & Younus, 2019).

For the purpose of this study, the theory of planned behavior and the theory of interpersonal behavior will be discussed. The theory of planned behavior will be discussed because previous studies (Davis, & Morgan 2008; Strydom, 2018; Xu, Ling, Lu, & Shen, 2017) state that it is one of the most supported and used theories in determining the factors influencing individual recycling behavior. The theory of interpersonal behavior will be discussed because apart from the theory being used in determining human behavior regarding waste management, most of the factors found in other theories are included in this theory (Sung, Cooper, & Kettley, 2019).

2.7.1 The Theory of Planned Behavior (TPB)

Khan et al. (2019) identify the TPB as a framework used in detecting the factors that affect the behavior of human beings with regards to a certain situation. The framework takes attitude, subjective norms, and perceived behavioral control as accurate determinants for human behavior. According to Ajzen (1991) the TPB is an extended version of the theory of reasoned action which was made of only attitude and subjective norms. Ajzen (1991) further mentions that person's intention is a critical factor for behavior in the theory. The TPB relies on the assumption that individuals behave rationally, thus are aware about the implication of their actions when they perform them. Due to the reliability of the theory, it has been applied to a range of different fields like leisure preference, investment decisions and others (Tonglet, Phillips, & Read, 2004). Figure 2.2 below depicts the TPB.



(Source: Adapted from Ajzen, 1991:182)

Figure 2.2: Ajzen's Theory of Planned Behavior

Each of the factors illustrated in Figure 2.2 above will be discussed below providing information on their relation to behavior.

2.7.1.1 Intention

In the TPB framework, intentions are perceived as indications of the degree of desire by people to try or the effort that people plan to invest, to carry out a particular behavior. The general rule with regards to intention states that the stronger the intention to engage in a behavior, the more likely should be its performance (Ajzen, 1991). The theory holds that, an individual's intentions to engage in a particular behavior is the proximal determinant of his or her behavior. In turn, behavioral intentions are predicted by three main components namely attitudes towards the behavior, subjective norms and perceived behavioral control.

2.7.1.2 Attitude toward a Behavior

Ajzen and Fishbein (1980) describes attitude as the consistent behavior which is present in an individual. It takes into account the opinions, emotions, and views that

an individual has about the specific behavior (Ostrom, & Upshaw, 1968). Such attitude depending on the individual and his or her views on the embodiments listed, can either be positive or negative towards a particular behavior (Khan et al., 2019). By using all the expected outcomes of a particular act, the attitude can be determined, and this can be weighted by determining how much the individual wants the outcome to be obtained (Kalafatis, Pollard, East, Tsogas, & Pollard, 1999).

2.7.1.3 Subjective Norm

This refers to the societal pressures which an individual feels, making him or her to partake or not in a certain behavior (Ajzen, 1991). This factor is based on the normative belief. Here, the behavior which the person has depends on what important people expect of him or her. This is the case as the expectations of such important people such as friends and family create pressure on the individual to behave in a particular way (Khan et al., 2019).

2.7.1.4 Perceived Behavioral Control

This is described by Khan et al. (2019) as the level of command an individual has on his or her own behavior. This factor can be seen as the opposite of subjective norm which looks at the influence of other on an individual. According to Ajzen (1991), this factor is influenced by the self-efficacy and the resources and opportunities available to the individual. The TPB also holds that using the perceived behavioral control and intention together can determine the resulting behavior (Ajzen, 1991). This theory is held based on two hypothesis which include

- With a steady intention, the determination used to make a course of behavior productive will increase based in the perceived behavioral control.
- A realistic perceived behavioral control can be used to determine the degree of success for an attempted behavior.

As a general rule, the more favorable the attitude and subjective norm with respect to engaging in the behavior, and the greater the perceived control, the more likely it is that a person will form an intention to perform the behavior in question (Ajzen, 2015). In other words, if an individual has a clear attitude towards a certain behavior, if there is enough peer-pressure and if they have faith in themselves to execute the behavior, then their intention to perform that behavior ought to be strong (Russell, Young, Unsworth, & Robinson, 2017). Therefore, the TPB model consist of attitude, subjective norms, and perceived behavioral control that influence intention, and intention affects the performance of behavior.

Despite having come up with the TPB model above, Ajzen (1980) also encouraged researchers to add other conditional factors as these will increase the analytical power of the model. Based on this, three potentially relevant factors which can enhance the TPB model in predicting intention in an environment related domain include: moral norms, self-identity and past behavior.

Moral norms refer to the way an individual's perception about a behavior is used, determining if it is morally correct or incorrect (Ajzen, 1991). Chen et al. (2020) mention that moral norms are moral values which are strongly internalized; hence a strong moral value will influence and discipline an individual's application of self, regarding his/her behavior.

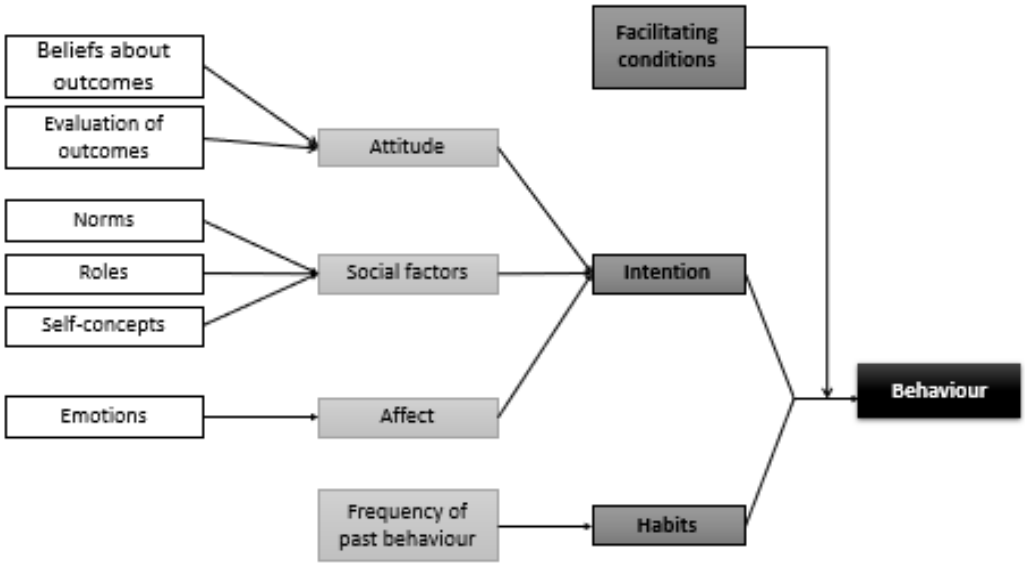
Self-identity is defined by Conner and McMillan (1999) as the prominent element of an individual that connects him/her to a specific behavior, and which can be seen as the point to which carrying out that behavior becomes key concept of that individual.

Yazdanpanah et al. (2015) add that self-identity is a label used by people to describe themselves and importantly used to influence intention. This construct is often used to determine how an individual sees him/herself based on the willingness to perform a behavior (Graham-Rowe et al., 2015).

Past behavior (experience) refers to a previous act or habit that motivates an individual and gives an urge for reperforming or redoing the action in future (Liao et al., 2018; Xu et al., 2017). Furthermore, Liao et al. (2018) mention that an individual who learns from his/her previous actions will be able to make decisions regarding such matters. Also, past behavior is deemed by the latter as a component which affects an individual's pro-environmental intention and behavior.

2.7.2 The Theory of Interpersonal Behavior (TIB)

The TIB model developed by Triandis in 1977 postulates that there are three determinants that hinder or facilitate behavior which include intention, strength of habits and the facilitating conditions. Triandis went further to establish three factors of behavioral intention: social factors, affects and the perceived consequences of the behavior's value. (Salonen, & Helne, 2012; Sung et al., 2019). Chatterton (2011) emphasizes that the TIB model helps in illustrating the relationship of intention, habits and facilitating conditions in contributing to what is seen as behavior. Research states that the TIB is a reliable model in determining and understanding human behavior as it is based on variables that provide significant results about behavior (Abdulrahman, Kamaruddin, & Othman, 2018). Figure 2.3 below depicts an illustration of the TIB in a structural diagram.



(Source: Adapted from Sung et al., 2019:4)

Figure 2.3: Triandis' Theory of Interpersonal Behavior Model

A brief discussion of these determinants of behavior illustrated in Figure 2.3 will be provided below.

2.7.2.1 Intention

Intention represents the decision-making process of an individual which helps him or her decide what he or she wants to do (Chatterton, 2011). The TIB of intention according to Gagnon, Godin, Gagné, Fortin, Lamonthe, Reinharz and Cloutier (2003) result from the attitudinal, normative and identity beliefs of the individual. Intention is made up of three key elements: attitudes held by the individuals; social factors based on how the individual visualizes him or herself and the actions performed in relation to the society; and affect (Sung et al., 2019).

Attitude in the model looks at the attitude an individual demonstrates for a behavior. The attitude of the individual is based on the beliefs about the end goal as well as the outcomes of assessing the behavior. The belief concerning the outcomes looks at things such as the desirability based on the benefits that the behavior has for the

individual and others around him. The evaluation of the outcomes looks at things such as the likelihood of success and the worthiness of the benefits (Chartterton, 2011). Salonen et al. (2012) mention that an individual would likely change behavior if he or she is sure and can rely on the benefits of the new behavior to be greater than the harmful effects in the present and future.

Social factors, predict intention as it identify and explains the way individuals see the place they occupy in the society as well as the way they perceive other people. It includes norms, roles, and self-concepts. Social norms identify rules about what is sociable acceptable or not. Roles refer to behaviors that an individual deems to be proper for people occupying a particular position in a group. Social concept refers to the identity of a person based on the goals deemed appropriate to pursue. Social concept is an important factor in determining if an action performed to encourage a particular behavior will or will not backfire. (Chartterton, 2011; Salonen et al., 2012; Sung et al., 2019).

Affect is described by Chartterton (2011) as a psychological term that refers to the experience of feeling or emotion. He goes on to state that affect is based on the mood the person is at the time of deciding or the unquestionable set of values that the person upholds. Affect is seen as the factor of intention which has limited conscious input in affecting the decision made by an individual. The emotional responses in a decision-making process here are regarded to be different from the rational method of analyzing the consequences (Salonen et al., 2012).

2.7.2.2 Habits

Habits refer to the routine behavioral patterns identified in an individual without him or she having to go through the process of intention formation (Chartterton, 2011). Verplanken and Holland (2002) state that habits have a relatively stable pattern of behavior and are carried out with no considerations as a result of the repetitiveness of the actions or processes. Habits as a result of its stable behavioral pattern is usually measures based on the frequency of past behaviors. This is the case as it is thought that repetitive behaviors become habits based on how automatic the responses to certain situation or issues are (Chartterton, 2011; Russell et al., 2017).

2.7.2.3 Facilitating Conditions

Literature emphasizes that upon the interaction of the intention and the habit in determining the behavior which will be attempted, the facilitating condition will be the factor to permit the behavior to be enacted. Facilitating condition is a term that refers to any internal or external factors that permit or hinder a person from changing his or her intentions and habits into an enacted behavior (Chartetton, 2011). Researchers (Gagnon et al., 2003; Sung et al., 2019) add that the determinant can be seen as an objective factor and a moderator for the effects that intentions and habits have, and in making a behavior to be done easily.

Triandis' TIB framework therefore postulates the importance of intention, habits and facilitating conditions in reaching a particular behavior. The framework also mentions that the intention and habits need to interact to determine the behavior, but this behavior will only be enacted depending on the facilitating conditions.

2.8 Conclusion

The next chapter will provide a conceptual framework which will be created for the study based on the literature. The chapter will integrate and use what previous scholars defined and determine as a springboard in developing the hypotheses which will be used in the study.

Chapter 3

HYPOTHESIZED MODEL ON ZERO-WASTE SHOPPING AS A CONSUMER BEHAVIOR: EVIDENCE FROM NORTH CYPRUS

3.1 Introduction

The concept of zero-waste shopping and behavioral theories were discussed in Chapter Two. In this chapter, a contrast is made between the TPB and the TIB discussed in the previous chapter. This chapter will provide a constructed conceptual framework and research hypothesis of the variables to be used in the study.

3.2 Contrasting the Theory of Planned Behavior and the Theory of Interpersonal Behavior

The first difference between the theory of planned behavior and the theory of interpersonal behavior relates to the key determinants of behavior. The TPB stipulates the key determinant of behavior is the intention the individual has towards partaking in an act (Ajzen, 1991). The TIB on the other hand, holds that the behavior an individual possesses based on three factors which include intention, facilitating conditions and the individual's habits (Triandis, 1977). The TPB therefore emphasis that behavior directly comes from intentions while the TIB contradicts that habits and facilitating conditions are functions that intervene between intention and behavior.

In addition, the TIB takes into consideration positions, self-image and social agreements which are not considered in the TPB (Triandis, 1977). Ajzen's TPB postulates that the influence of the factors stated above is felt and present in the attitude towards the behavior (Ajzen, 1991). Such a difference is upheld by Woon and Pee (2004) who state that the TIB model has all the factors found in the TPB model and additional factors. The researchers state that this trait of the TIB helps in strengthening the model's predictive power.

The TIB model also takes affect towards behavior as a separate factor that influences intention (Triandis, 1977). Contrary to the TIB, the TPB results as the sum of the perceived behavioral consequences multiplied by the value attached to these consequences.

Furthermore, the TPB differs from the TIB in the type of process which is used in them. The TPB sees behavior to be as a result of a solely deliberative process, while the TIB sees behavior otherwise. The TIB sees behavior as a process which is more predictive than deliberative due to the inclusion of habit as a determinant of behavior (Darnton, 2008).

Darnton (2008), also states that eminent difference between the TPB and TIB can be seen in the types of factors present to both theories. In the TPB, external factors are being ignored as determinants or factors that influence behavior. The researcher goes on to states that most often model use control to depict external factors. The TPB model has perceived behavioral control as a factor but the researcher states that this

factor is an internal measure of actual level of control. Facilitating conditions on the other hand found in the TIB model is a more external factor.

Although both the TPB and the TIB are used in determining the behavior which an individual has based on use of various respective determinants, Ajzen's TPB stands out from Triandis' TIB as more factors can be included when using the TPB. According to Ajzen, to increase the predictive power of the model in identifying the factors that influence the recycling behavior of individuals, other conditional factors can be added to it.

In the section which follows, the conceptual framework and research hypotheses are constructed.

3.3 Construction of Conceptual Framework and Research Hypotheses

Each of the variables in the TPB and additional predictor variables will be incorporated in the framework, and they will be analyzed to identify the relationship that exist between the variables and waste behavior. The addition of other variables is as a result of the literature provided in the previous section. This will help in the construction of the various hypotheses for the constructed model.

3.3.1 Attitude

In a previous study conducted by Tonglet et al. (2004), attitude is strongly related with recycling and the food waste avoidance intention. In addition, researchers (Ajzen, 1991; Yazdanpanah, & Forouzani, 2015) identified attitude as the strongest predictor of recycling and food waste, hence an individual's intention for a zero-waste society will be based on his or her attitude. According to Xu, Ling, Lu and Shen (2017), an

individual with a high and favorable view of his/her moral responsibilities is more likely to be thoughtful of his or her actions and this can strengthen their attitude in being environmentally-friendly. The later states that there exists a strong correlation between an individual's attitude and intention on waste avoidance. From the discussion, the hypothesis is proposed:

Hypothesis 1 (H_1). Attitude positively influences a consumer's zero-waste shopping intention in TRNC.

3.3.2 Subjective Norms

Based on a study carried out by researchers (Karim Ghani, Rusli, Biak, & Idris, 2013), subjective norm is positively associated to a person's waste avoidance intention. This is said to be because such an individual is influenced by someone close to him/her to carry out the act rather than initiating a zero-waste act on their own. Tonglet et al. (2004) add that an individual who finds him/herself in a collectivist society, who is guided by the examples and prospects that other important people have of him/her with regard to an action, will affect his/her intention and change the behavior accordingly. From the discussion, the study proposes the following hypothesis:

Hypothesis 2 (H_2). Subjective norm positively influences a consumer's zero-waste shopping intention in TRNC.

3.3.3 Perceived Behavioral Control

The literature also noted that the factor, perceived behavioral control, can be a direct determinant of behavior and of intention. A study carried out by Wan, Shen and Yu (2014) stated that perceived behavioral control of an individual is positively associated to his/her recycling intention and behavior. According to Xu et al. (2017), if an

individual has a strong perception of control, he/she will perform a zero-waste behavior such as waste separation. From the discussion, the hypothesis is proposed.

Hypothesis 3 (H_3): Perceived behavioral control positively influences a consumer's zero-waste shopping intention in TRNC.

3.3.4 Moral Norms

Moral norms can be defined as a situation where an individual feels morally obliged to carry out or refuse to carry out a certain action (Ajzen, 1991). The latter goes on to state that such moral norms are expected to influence intentions when used in line with the other main determinant of intention used in the TPB. Chen and Lee (2020) add when moral norm is applied in behavioral studies, it usually provides results that prove that it influences the intention for the behavior observed. From the discussion, the hypothesis is proposed.

Hypothesis 4 (H_4): Moral Norm positively influences a consumer's zero-waste shopping intention in TRNC.

3.3.5 Self-Identity

This refers to the label or attribute that a person uses to describe him or herself based on various aspects such as their physical attributes, preferences, values, habitual behavior, personal traits and personal narratives (Gatersleben, Murtagh, & Abrahamse, 2014). Various researchers (Qasim, Yan, Guo, & Saeed, 2019; Yazdanpanah et al., 2015) goes on to state that self-identity is an important issue that urges an individual to either protect or leave a situation from occurring. The latter postulates that self-identity is expected to have an important influence on intention. From the discussion, the hypothesis is proposed.

Hypothesis 5 (H_5): Self-identity positively influences a consumer's zero-waste shopping intention in TRNC.

3.3.6 Past Experience

Past experience, also regarded as past behavior refers to an action which was performed in the past and provides an individual with the urge to have an intention of carrying out that action again (Xu et al., 2017). The self-cognitive theory states that an individual could get more knowledge and make the necessary choices by looking back at his or her initial performances. Furthermore, past experience is verified to influence the pro environmental intention of an individual's actions such as zero-waste shopping (Liao, Zhao, Zhang, & Chen, 2018; Xu et al., 2017). Hence an individual who has past experience with regards to zero-waste shopping will have a greater intention to repeatedly carry out such action. The following hypothesis is proposed accordingly:

Hypothesis 6 (H_6): Past experience positively influences a consumer's zero-waste shopping intention in TRNC.

3.3.7 Intention

Intention is defined in the previous chapter as the indication of how much an individual tries or the amount of effort utilized to ensure that a particular behavior is carried out (Ajzen, 1991). According to various researchers (Graham-Rowe, Jessop, & Sparks, 2015; Xu et al., 2017), the TPB proposes that intention is the most immediate foundation for a behavior. They go on to state that intention has a direct relationship with behavior, as a stronger intention to for a behavior to be performed will increase the likelihood that it is actually done. The strength of the intention is predicted to come from the effects of the variables used to predict it. In the case of the TPB these variables include attitude, subjective norms and perceived behavioral control. Other variables

(moral norms, self-identity and past experience) will be included to determine the strength of intention to impact the behavior. From the discussion following hypothesis can be proposed.

Hypothesis 7 (H_7): Intention positively influences a consumer's zero-waste shopping behavior in TRNC.

Based on the hypotheses formulated above, the hypothesized model which supports this study is depicted in Figure 3.1.

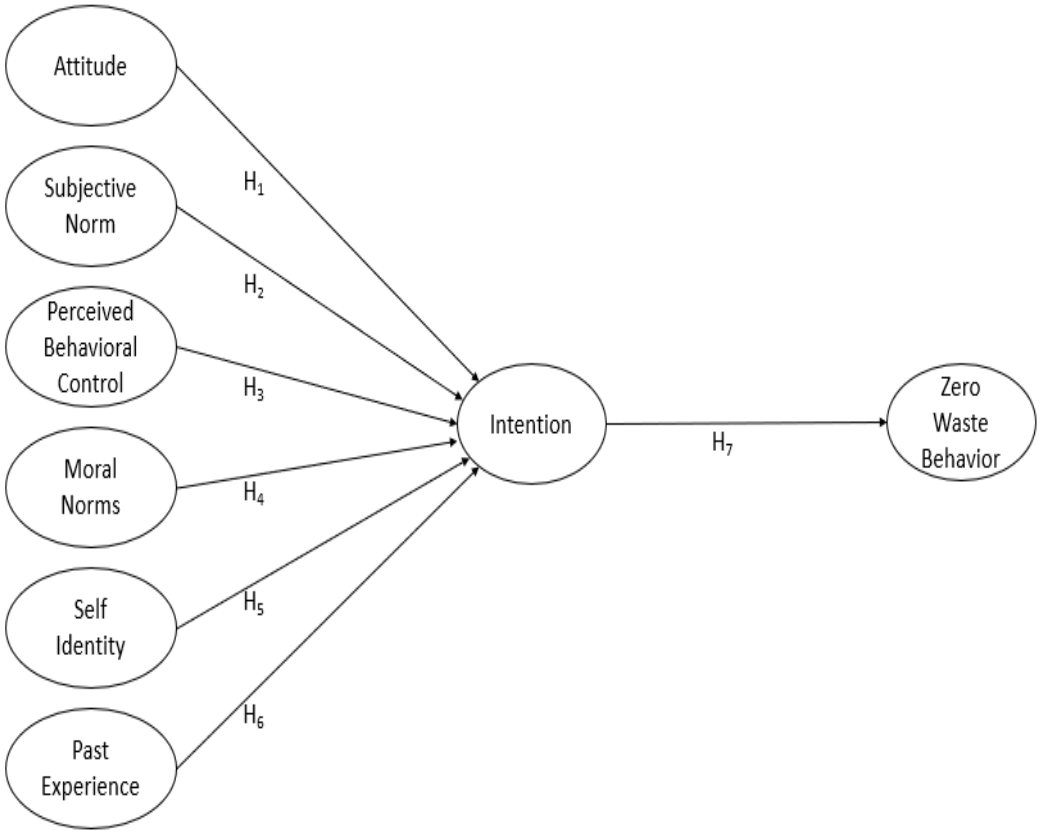


Figure 3.1: Proposed Hypothesized Model in the Study

Constructed on the literature review, the following hypotheses were raised to determine if there exist empirical relationships between the intention determinants

(attitude, subjective norms, perceived behavioral control, moral norms, self-identity, and past experience), intention and zero-waste shopping behavior in North Cyprus as indicated in Figure 3.1.

- H_1: Attitude positively influences a consumer's zero-waste shopping intention in TRNC.
- H_2: Subjective Norms positively influences a consumer's zero-waste shopping intention in TRNC.
- H_3: Perceived Behavioral Control positively influences a consumer's zero-waste shopping intention in TRNC.
- H_4: Moral Norms positively influences a consumer's zero-waste shopping intention in TRNC.
- H_5: Self-identity positively influences a consumer's zero-waste shopping intention in TRNC.
- H_6: Past Experience positively influences a consumer's zero-waste shopping intention in TRNC.
- H_7: Intention positively influences a consumer's zero-waste shopping behavior in TRNC.

3.4 Summary

The theory of planned behavior and the theory of interpersonal behavior were compared to determine which theory fits the study. From the decision, the hypothesized model for the study was developed above, identifying the variables that influence zero-waste shopping behavior. The model consists of two sets of hypotheses. The first set of hypotheses in this model deals with the relationship between behavioral factors (attitude, subjective norms, perceived behavioral control, moral norms, self-

identity and past behavior) and intention. The link concerning intention and the zero-waste shopping behavior forms the second set of hypotheses for the model.

The next chapter discusses and provides information on the research design and the methodology to be used in the study.

Chapter 4

RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

In the previous chapter, a comparison of the TPB and the TIB was done. The chapter developed a hypothesized model which will be used in the study.

Chapter Four will highlight the approach, design and methodology and establish a decision on what approach, method and design will be applied for the study to attain the primary aim of conducting the study. A discussion on the population, the sample frame and the sample, as well as the sampling technique utilized will be provided. The chapter will further provide information as to what measuring instrument will be used, how it will be developed and subsequently administered. The chapter shall finish by taking a stand on what method shall be used in analyzing the data captured.

4.2 Research Approach

This refers to the blueprint that determines the plans and process used by the researcher in carrying out the research (Creswell, 2014). A research is identified by various researchers (Collis, & Hussey, 2014; Zikmund, Babin, Carr, & Griffin, 2013) as a well-defined method used in the gathering and analyzing information with the goal of being knowledgeable and obtaining the truth concerning a particular event or situation. Creswell (2014) further mentions that research can either follow a qualitative approach, quantitative approach or a mixed approach (both qualitative and quantitative).

The three major research approaches mentioned above will be discussed and a decision on which approach is used in the study will be provided in the section which follows.

4.2.1 Qualitative Research Approach

A qualitative research is one where the objectives of the study are being met by using techniques which enable the researcher to interpret information without the use of any numerical methods (Zikmund et al., 2013). Researchers (Joubish, Khurram, Ahmed, Fatima, & Haider, 2011) concur and add that the approach is based on individualities which cannot be quantified in a mathematical way like beliefs, meanings, attributes and symbols. Yilmaz (2013) emphasizes that with this approach, information is collected on variables over a period of time to acquire insights pertaining the research problem but without the use of any statistical methods. Furthermore, researchers who use the qualitative research approach try to understand and apprehend a social phenomenon by contextualizing, understanding and interpreting the perspective of the participants for that situation (Szyjka, 2012). When the qualitative research approach is used, the data produces are almost often texts, visual images, or narratives (Tewksbury, 2009).

Interpretivists often use this approach in getting data (Collis et al., 2014). Interpretivism refers to a research paradigm which deals with getting describing and interpretating social phenomena in words based on the qualitative analysis that the researcher carried out (Gravetter, & Forzano 2012). Examples of qualitative data collection methods include observations, participation and individual interviews, and focus groups.

4.2.2 Quantitative Research Approach

This refers to an approach which uses numerical data to explain a situation that is being analyzed using statistical methods (Yilmaz, 2013). Struwig and Stead (2013) add that this approach is carried out through a valid data acquisition processes from a well selected sample which represents the population. The latter also state that this approach is often used when researchers want to test a theory with the main aim of testing a concept for the link between variables and generalize results. Therefore, a researcher who uses this approach aims at establishing a general law of behavior and uses the information collected from the study to either support or reject the pre-determined theory (McLeod, 2017). Struwig et al., (2013) supports quantitative research approach stating that this approach is capable of making correct predictions and generalized finding from samples about a population.

A quantitative research is often deemed as being positivist. Positivism is a research paradigm (framework) that combines a deductive approach with a precise measurement of quantitative data so researchers can identify the casual law to help predict human behavior (Struwig et al., 2013). Data can be collected using this approach using surveys, questionnaires and observations (McLeod, 2019).

The next section provides a comparison between the two research approaches.

4.2.3 Comparing Qualitative and Quantitative Research Approach

Table 4.1 outlines the various differences between the qualitative- and quantitative research approach.

Table 4.1: Qualitative Research Approach vs Quantitative Research Approach

Qualitative Research Approach	**Quantitative Research Approach**
Research can be flexible.	Research is well structured.
Data is subjective with detailed examination of written and spoken words.	Data is objective, precise, numeric and reliable.
It aims at developing a new theory.	It is guided by means of a developed theory.
Data collection and analysis are simultaneously done.	Statistical data analysis takes place after the data is collected.
Purpose is to understand the interpretations and perceptions of participants.	Seeks to identify the cause and effect of human behavior.
Value bond as they have an impact and should be understood and considered during the research.	Values can be controlled using the appreciated methodological methods.
Results are trustworthy since the design and obtaining real in-depth data is the priority.	Results are consistent and reasonable as focus is on the design with the aim of getting similar findings.

Source: Adapted from Struwig & Stead (2013); Bryman & Bell (2011)

Table 4.1 compares the two types of research approaches. One of the most important differences is that the qualitative research approach deals with subjective data with lots of written and spoken words. Quantitative research approach on the contrary is numeric, hence making the results to be expressed as numerical values.

4.2.4 Selection of Research Approach to use in Study

From the above, it can be seen that research can be done using a quantitative research approach. This is the case as the study tests a theory of behavior to identify if they are affected by the idea of zero-waste shopping.

4.3 Research Design

Research design refers to a framework that determines the way information is acquired and examined for the purpose of a specific research topic (Adams, Khan, Raeside, & White, 2007). Selecting the suitable research design is a vital decision in the research process (Abutabenjeh, & Jaradat, 2018). There exist three research design typologies, namely, exploratory, descriptive and casual research (Babbie, & Mouton, 2001).

Saunders, Lewis and Thornhill (2016) state that exploratory research is the one in which an open question is asked with the aim of discovering what is occurring and acquire in depth knowledge about the topic of interest. Exploratory research deals with explaining vague problems and getting a clear understanding of the problem (Zikmund, Babin, Carr, & Griffin, 2009). Exploratory research questions are likely to begin with the - what or how - questions. This type of research can be carried out through the use of various research methods including a search of the literature, conducting focus groups interviews or detailed individual interviews (Saunders et al., 2016). The later goes on to state that this type of research comes in handy when the researcher wishes to make clear his or her understanding pertaining to an issue, problem or a phenomenon.

Descriptive research refers to a research design that aims at gaining an accurate description of a person, event, or a phenomenon (Saunders et al., 2016; Zikmund et

al., 2009). This research design allows the research to describe the investigated event, person of phenomenon (Jennings, 2010). According to researchers (Burns, & Bush, 2014; Saunders et al., 2016), a descriptive research varies from an exploratory research as the former aims at answering the - who, what, when, where, and how - questions. Burns et al., (2014) further mention that such a research can either be a cross sectional or a longitudinal study. The researchers state that cross sectional studies measure the units from a sample of the population at only one point in time. A longitudinal study is done in an extended time period, and it is a beneficial as it can be used in spotting changes as the study goes on (Coldcrest, & Herbst, 2004). According to Zikmund et al. (2013), a survey or a questionnaire can be used when it comes to carrying out a descriptive research.

A casual research refers to a research that is performed with the aim of identifying the cause-and-effect relationship that exist between a set of variables. This type of research is carried out through the use of experiments (Zikmund et al., 2013). An experiment is a casual research study type where a researcher uses different independent variables to identify the influence they have on the dependent variable (Burns et al., 2014).

Exploratory and descriptive research designs were utilized for the study. The exploratory research design was used as the study aimed to identify which elements of behavior influence the zero-waste consumer behavior in North Cyprus. The study was descriptive as it described the elements which influence zero-waste intention and behavior.

4.4 Population and Sampling

A population can be defined as a group of individuals, items or information which is being used for research. In research, having a clear definition of the population of interest is necessary as it helps in controlling the number of deductions following the investigation of the study (Horn, 2012; Denscombe, 2014). Population helps in representing the people, units or any other thing which can have a particular property or a common trait (Surbhi, 2017). For the study, the population was all individuals involved in shopping in markets. It is however deemed impossible to perform a study on the entire population and hence for this reason, sampling the population is the next step (Taylor, 2018).

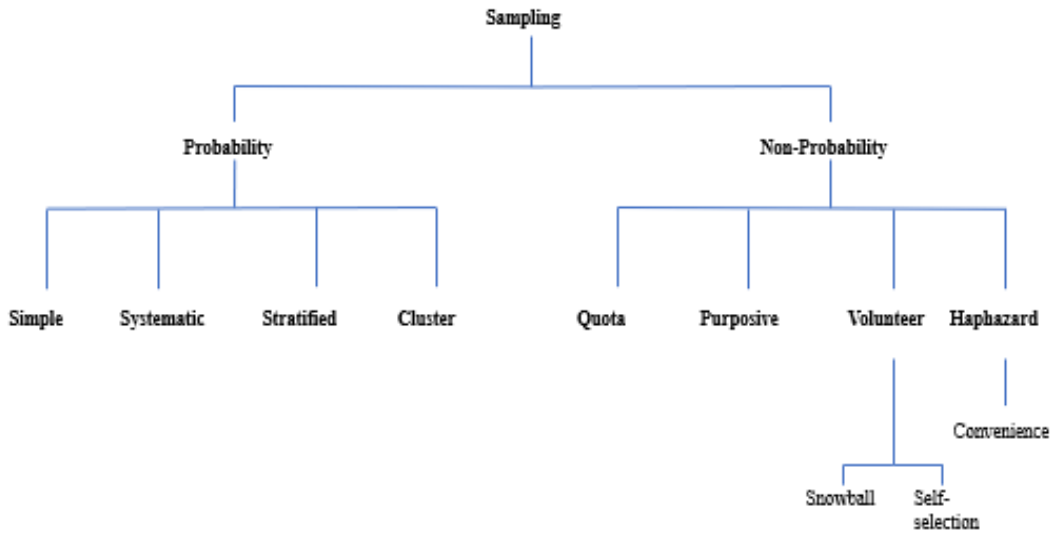
Sampling is regarded as a technique which provides researchers with the possibility to reduce the amount of data they need to get and take special attention to only data from a particular group rather than getting from all the population (Saunders et al., 2016). The researchers go on to state that this technique permits that a generalization be made from the sample data acquired. Collis et al., (2014) mention that a proper selection of the sample plays a fundamental role when conducting a quantitative study.

A sample frame defined as the complete list from where the members of the populations are derived (Horn, 2012; Saunders et al., 2007b). Alternately, sampling frame is a is a record of each unit in the population from which a sample can be selected by the researchers (Bryman, Bell, Hirschohn, Dos Santos, Du Toit, Masenge, Van Aardt, & Wagner, 2014). This study hence did not have a sample frame as there did not exist a list of all those who have visited markets in TRNC. The sample included

individuals who had been to markets and shops in TRNC and had taken part in shopping of any kind there.

4.4.1 Sampling Techniques

There are two main types of sampling techniques, namely probability and non-probability sampling (Struwig et al., 2013; Saunders et al., 2016; Taherdoost, 2016). Figure 4.1 shows the available different sampling techniques.



Source: Adapted from Saunders, Lewis and Thornhill (2016:276)

Figure 4.1: Various Sampling Techniques

The different sampling techniques Figure 4.1 above will be reviewed in the following sections starting with the probability sampling techniques.

4.4.1.1 Probability Sampling

With probability sampling, there is a well-known and equal percentage for the probability of a case to be selected from a target population. (Taherdoost, 2016; Saunders et al., 2016). Saunders et al. (2016) go on to state that such a technique is frequently connected with surveys and experimental research methods. As per Jennings (2010) probability sampling is advantageous because if an adequate sample

is available and the sample frame is complete, then the sample will be unbiased and fully represent the population. From Figure 4.1 it can be seen that there are four methods of probability sampling. These methods will be briefly discussed below.

4.4.1.1.1 Simple Random Sampling

Simple random sampling refers to a sampling where each person that makes up a population possesses the same possibility to be selected or being part of a sample (Alvi, 2016; Zikmund et al., 2009). Researchers (Aaker, Day, & Kumar, 2007; Foley, 2018) stipulate that with this type of sampling, a list of the population is created from which a random selection of the subjects is done. For simple random sampling to be done, Saunders et al. (2016) stipulate that; each case in the sampling frame should numbered with a unique number and the cases should be selected using random numbers till the sample size is attained.

4.4.1.1.2 Systematic Random Sampling

This is a sampling technique whereby a sample is carefully chosen from the sampling frame at a regular period (Saunders et al., 2016). Acharya, Prakash and Nigam (2013) mention that with this sampling technique, a random starting point is defined, and each nth case or element is selected thereof. This method of sampling is used when the population is homogenous (Alvi, 2016). Saunders et al., (2016) further mention that despite the advantageous nature of this sampling method, it is not suitable if the sampling frame is not reordered or stratified.

4.4.1.1.3 Stratified Random Sampling

Stratified random sampling is an adapted type of random sampling where a sample is divided into a number of groups based on the number of attributes used for the sample (Greener, 2008; Saunders et al., 2016; Struwig et al., 2013). According to Saunders et al. (2016), this method of sampling ensures that each of the relevant strata have equal

representation in the sample. The stratified random sampling method is also useful in ensuring that the population is reflected by the sample based on the characteristics of each subset (Zikmund et al., 2009).

4.4.1.1.4 Cluster Sampling

With cluster sampling, the target population is divided into discrete groups (clusters) before they are being sampled. Here, the sampling frame consist of a complete list of clusters instead of a complete list of individual elements in the population (Jennings, 2010; Saunders et al., 2016). Kothari (2004) mentions that areas sampling is handy when there is no list of the population for the researcher. Area sampling is a cluster sample which has the geographical area as the main sampling unit.

4.4.1.2 Non-probability Sampling

Also known as Judgment or Non-random sampling, non-probability sampling is a sampling technique where there is uncertainty regarding the chance for every element of population to be selected (Struwig et al., 2013). This hence means that there is an unknown probability of a case being selected from a population here. Aaker et al. (2007) mention that this sampling technique is best used when; pretesting a questionnaire, during the exploratory stages of the study and when the population is homogeneous. Non-probability is sampling is regarded as the most suitable sampling technique as it is quicker to execute (Wiid, & Diggines, 2009). This convenience has increased the sampling techniques popularity and use especially in market research. From Figure 4.1 the types of non-probability sampling techniques include quota-, purposive-, volunteer- and haphazard sampling (Saunders et al., 2016).

4.4.1.2.1 Quota Sampling

According to Struwig et al. (2013), quota sampling is a non-probability sampling method where there exist some prearranged characteristics that the researchers require

for the sample and are used in selecting the elements from the population. They argue that these prearranged characteristics is done with aim of ensuring equality in the spreading of such traits between the sample and the population. Saunders et al. (2016) mention that this sampling method is advantageous as it is less quickly and can be easily set up. Furthermore, quota sampling is used when there is a large population target.

4.4.1.2.2 Purposive Sampling

A purposive (judgmental) sampling is a sampling method where the researcher needs to make a judgment and select the best case which will enable him/her to answer the research question and meet the objectives (Saunders et al., 2016). This sampling method is frequently used when working with a sample sizes like in case study research where the researcher can decide and select the cases deemed informative.

4.4.1.2.3 Volunteer Sampling

From Figure 4.1, there are two (snowball and self-selection) techniques to volunteer sampling technique. Snowball sampling is a sampling technique where the participants freely volunteer to partake in the research instead of being selected (Saunders et al., 2016). Furthermore, Taherdoost (2016) and Struwig et al. (2013) mention that with the snowball sampling technique, the researcher approaches one participant and uses information acquired from the participant as a means to approach other participants. Self-selection sampling on the other hand is a volunteer sampling technique where the participants are required to identify if they wish to be part of the study (Saunders et al., 2016).

4.4.1.2.4 Haphazard Sampling

Haphazard or convenience sampling is a sampling technique where there exists no obvious link between the principle of the organization and the research question when

selecting the sample. Here, the cases are selected based on the availability to acquire for the sample (Saunders et al., 2016; Singh, 2018). Convenience sampling is used when the participants are selected based also on the readiness (Struwig et al., 2013).

4.4.2 Sampling Techniques Adopted in the Study

The sampling technique used for this study is a non-probability sampling technique. Based on the literature above, the combination of the convenience sampling and snowball sampling will be used in the study. The convenience sampling is beneficial as large numbers of the questionnaire can be quickly completed in an economical means (Zikmund et al., 2009). In using the convenience sampling method, a link of the questionnaire was sent to classmates, friends and family and requested them to follow it and fill the questionnaire. The snowball sampling method was also used, where the convenient sample were asked to share the link with their own classmates, friends and family.

4.4.3 Determination of the Sample Size

When conducting a qualitative research, it important that emphases be placed on the selection of a sample size as this will help the researcher in drawing conclusions regarding the population based on what the results show (Kumar, 2011). Daniel (2011) supports this premise by stating that generally when a research needs a rigorous research design, it is justifiable to have a large sample size. The latter also states that a large sample size will be helpful in satisfying the research objective. As per Gravetter and Forzano (2012), when a research has a large sample size, it is likely that there will be similarity in the responses for that specified sample and population.

Daniel (2011) provides a guideline of the various sample sizes estimates which can be used if a researcher applies a non-probability sampling technique. According to the

latter's guideline list when a non-probability sampling technique is used in market research or product testing, the sample size for such a study ranges from 200 to 2500 participants. Furthermore, to establish the sample size, the ratio of observation to independent variable should be used as a guide to finding this (Bartlett, Kotrlik, & Higgins, 2001). Based on this, the sample size of this study will be about 180 (30 items x 6 observations). Given the above recommendations, a sample size of 300 respondents was deemed acceptable for the study.

4.5 Research Instrument

A research instrument refers to a means used in the acquiring or collection of data or information used in answering the research question (Wilkinson, & Birmingham, 2003). According to Collis et al. (2014), several means can be used in collecting either qualitative or quantitative data from a sample including in-depth interviews, focus groups, surveys, observations, content analysis and experiments. An in-depth interview is a qualitative research instrument used in the data collection process where the interviewer (researcher) questions an individual with aim of getting that individual's personal view of a situation (Saunders et al., 2016). A focus group is a qualitative research instrument where a selected participants share a unique situation guided by a group leader (Collis et al., 2014). An observation is another qualitative instrument that deals with the researcher observing the actions or behavioral traits of a number of participants (Saunders et al., 2016). Content analysis in contrast is a quantitative research instrument which converts qualitative data to a numerical form for use in the research.

A survey (questionnaire) is the most frequently used quantitative research instrument when it comes to gathering data or information regarding a population. Wilkinson et

al. (2003) state add that this is due to the cheapness and effectiveness of the survey when it comes to getting numerous amounts of data. Surveys are also useful as they can be used privately and publicly data collection process (Ajayi, 2017). Mrug (2010) define a survey as a data collection technique whereby individuals provide answers to questions regarding their attitudes, feelings, manners or points of views.

Collis et al. (2014) mention that there are various methods through which a survey can be administered to participants for the collection of data including internet and postal self-completion questionnaires, self-administered questionnaires, mobile and in-person interviews. Data was collected for this study by implementing the internet and postal self-completion questionnaire and the self-administered questionnaire. These two methods were applied to identify the influence of independent variables (attitude, subjective norms, perceived behavioral control, moral norms, self-identity, past experience and intention) affect the dependent variable (zero-waste shopping behavior).

The items found in this study's questionnaire are sourced from existing measuring instruments obtained from previous and similar research. These items have been adjusted based on the topic to fit the study's objectives.

4.5.1 Format of Questionnaire

The questionnaire will comprise of two parts, namely Part 1 and Part 2. Part 1 (Scaled Questions) consisted of a number of questions which focused on the factors that influence the zero-waste shopping behavior of customers in TRNC. These factors as discussed in the previous chapter include: attitude, subjective norms, perceived behavioral control, moral norms, self-identity, past experience and intention. Zero-

waste shopping behavior, the dependent variable was also be tested in Part 1 to identify where consumers stand regarding this. Each of the variables in Part 1 shall possessed a maximum of five items related to the study.

In Part 1, the "5-point Likert Scale" was used as a determinant and measure of the views of the respondents about zero-waste shopping being a consumer behavior in TRNC. The "5-point Likert Scale" range from 1-5, with 1 implying that the respondent "strongly disagrees", 2 meaning "disagree", 3 implying that the respondent is "neutral", 4 shall mean that the respondent "agree" and 5 meaning that the respondent "strongly agree". Appendix A provides a copy of the questionnaire of the thesis.

Part 2 of the questionnaire focused on the demographic information of the respondents. This included gathering information on the respondent's citizenship, age, gender, education level, income level, occupation status, frequency of shopping and the zero-waste activity practiced. The layout of the questionnaire is summarized in Table 4.2.

Table 4.2: Questionnaire Layout

Parts	**Factors**	**Number of items**
1	Attitude	5
	Subjective norms	5
	Perceived behavioral control	4
	Moral norms	4
	Self-identity,	3
	Past experience	3
	Intention	4

	Zero-waste shopping behavior	5
2	Citizenship	1
	Gender	1
	Age	1
	Occupation status	1
	Education	1
	Frequency of shopping	1
	The three R's of Waste hierarchy	1

Table 4.2 provides the layout of the questionnaire used in acquiring the data for the study. The scaled items used in measuring the consumer behavior regarding zero-waste shopping are shown in Table 4.3.

Table 4.3: Scaled Items

	Questions	**References**
ATT	**Attitude**	
ATT1	Zero-waste shopping is a good idea.	Adapted from Ajzen (2002); Arvola et al. (2008); Liao, Zhai, Zhang and Chen (2018).
ATT2	Zero-waste shopping is beneficial.	
ATT3	Zero-waste shopping is important.	
ATT4	Zero-waste shopping is favorable.	
ATT5	Zero-waste shopping is hygienic.	
SUN	**Subjective Norms**	
SUN1	My family thinks that practicing zero-waste shopping is a good thing to do.	Adapted from Ajzen (2002); Liao et al. (2018).

SUN2	Most of my friends think that practicing zero-waste shopping is a good thing to do.	
SUN3	Most people important to me think I should engage in zero-waste shopping.	
SUN4	Most people who are important to me would approve of my zero-waste shopping behavior.	
SUN5	My neighbors expect me to carry out zero-waste shopping practices.	
PERC	**Perceived Behavioral Control**	
PERC1	I know how to practice zero-waste shopping.	Adapted from Khan et al. (2019); Liao et al. (2018); Tonglet et al. (2004).
PERC2	Carrying out zero-waste shopping is convenient.	
PERC3	I have plenty of opportunities to practice zero-waste shopping.	
PERC4	It is mostly up to me whether or not to perform zero-waste shopping.	
MON	**Moral Norms**	
MON1	I feel I should not waste anything if it is reusable for shopping.	Adapted from De Groot, & Steg (2009); Yazdanpanah et al. (2015).
MON2	I feel an obligation to perform zero-waste shopping practices.	
MON3	Not carrying out zero-waste shopping practices goes against my principles.	
MON4	I would feel guilty if I did not carry out zero-waste shopping practices.	

SEI	**Self-Identity**	
SEI1	I think of myself as a practitioner of zero-waste shopping.	Adapted from Qasim, Yan, Guo, Saeed, & Ashraf (2018); Whitmarsh, & O'Neil (2010); Yazdanpanah, & Forouzani (2015).
SEI2	Undertaking zero-waste shopping practices is an important part of who I am.	
SEI3	I make significant changes in my lifestyle for zero-waste shopping.	
SEI4	I am the type of person who acts in a zero-waste way.	
PAE	**Past Experience**	
PAE1	I have carried out zero-waste shopping practices in the 4 weeks.	Adapted from Liao et al. (2018).
PAE2	I have been performing zero-waste shopping practices in the past 4 weeks.	
PAE3	I have made zero-waste shopping practices a behavior.	
INT	**Intention**	
INT1	I intend to avoid waste in the near future.	Adapted from Ajzen (2002); Wan et al. (2014); Yazdanpanah et al. (2015).
INT2	I am willing to participate in the zero-waste shopping measures in the near future.	
INT3	I plan to carry out zero-waste shopping practices if rules are placed for such in the country.	
INT4	I will practice zero-waste shopping measures every time I have waste.	
ZW	**Zero-waste Shopping Behavior**	

ZW1	I frequently reuse shopping bags.	Zaman, & Lehmann (2013)
ZW2	I purchase environmentally friendly products.	
ZW3	I make use of recycling products to encourage zero-waste.	
ZW4	I make sure I search for second-hand items.	
ZW5	I shop at retail facilities that promote innovative techniques for zero-waste.	

Prior to the distribution of questionnaire to the stated sample, a pilot study was carried out to test the questionnaire and its items.

4.5.2 Pretesting of the Questionnaire

A questionnaire prior to distribution to the sample for the collection of data should be pretested. Various researchers (Welman, Kruger, & Mitchell, 2005; Zikmund et al., 2013) define a pilot study as a study done on a small scale aimed at collecting data from respondents parallel to the respondents to be used for the full study. A pilot study is useful as it helps in determining if the questionnaire is well phrased, if the questions are relevant to the objectives and ensure that there are no flaws in the questionnaire (Welman et al., 2005)

The pilot study was performed among twenty respondents through an online self-administered questionnaire. The goal of the pilot study was to acquire feedback from the respondents about the questionnaire - if the questions were logical and competent for distribution. The critiques and comments which were gotten were used in

improving and making the questionnaire understandable where legitimate concerns were raised.

4.6 Questionnaire Administration

As previously stated, the data was collected through the distribution of the questionnaire online. The questionnaire was sent as an online survey to consumers who have taken part in any shopping practices in TRNC. A software program Google Drive (https://docs.google.com/forms/) that provides various web-based business and office tools was used by the researcher in the creation of this online survey.

Two methods were used in distributing the questionnaires. The questionnaire was circulated by the researcher to friends, classmates and families who were in TRNC by sending them a message which contained the link to the online survey. These friends, families and classmates in turn forwarded the link of the questionnaire to their friends, families and classmates.

The data collection process started on the 3rd of January 2021 and went on right till the 17th of April 2021. 300 responses were gotten from the distribution of the questionnaires online.

4.7 Ethical Considerations

Ethics refers to a number of decisions and choices which are seen as being either acceptable of non-acceptable and that influence the behaviors, decisions and standards of an individual (Greener, 2008). Ethical considerations are key in ensuring that the researcher does not perform unethical actions. Such actions may include failing to preserve the identity of the respondents, failing to acknowledge or recognize another author's work, creating inexistent data. (Struwig et al., 2013).

The study had to follow the clearly established ethics principles. The researcher also acquired an ethical clearance form from the EMU Ethics Committee and ensured that the research ethics were upheld. The consent form was acquired, and the respondents were informed that their voluntary consent in participating in the filling questionnaire. The researcher also made sure that the objective of the survey and study was mentioned on the cover letter of both the online and the in-person questionnaire.

After collecting and capturing the data obtained from the survey, the data analysis follows. The process used in data analyzing is discussed in the section that follows.

4.8 Data Analysis

Various researchers (Bryman et al., 2011; Grant, 2018) describe data analysis as the process of putting information from a survey in order, evaluating the data using both analytical and statistical tools and presenting the data in a comprehensible way. For the study, the data generated from the online survey was exported and was analyzed on the SPSS (Statistical Package for the Social Science) and Smart PLS software. SPSS was used in capturing the primary data and calculating both descriptive and inferential statistics. The Smart PLS software was used in testing the hypothesis for the study.

4.8.1 Descriptive Statistics

According to Kenton (2018), descriptive statistics are used in making a summarized conclusion of the data obtained so that meaningful insight might be acquired regarding the population or sample. Aaker et al. (2007) mention that this statistics was often connected to frequency distribution which summarizes that data into frequency tables. The latter go on to state that descriptive statistics is a data analysis technique that is used in reducing the data into an average or a single figure. This statistics is conducted

through the use of primary techniques including analyses of the mean, median, mode and standard deviation as well as frequency distributions (Wiid, & Diggines, 2009).

4.8.2 Inferential Statistics

Collis et al. (2014) defines inferential statistics as the analysis method where the quantitative data acquired is used in taking a stand concerning the population. When performing inferential statistics, the researcher can generalize and make predictions based on the results obtained (Singpurwalla, 2013). Below, the inferential statistics used in the present study are elaborated.

4.8.2.1 One Way Analysis of Variance (ANOVA)

This method deals with comparing the mean scores of two or more groups where the independent variables have different levels (Mishra, Singh, Pandey, Mishra, & Pandey, 2019; Pallant, 2011). Furthermore, a one-way ANOVA is conducted to compare the variance between the different groups through the use of the *F* ratio. The null hypothesis is rejected when the *F* test is significant.

4.8.2.2 Pearson Correlation Coefficient

The Pearson Correlation Coefficient (Pearson *r*) is an inferential statistic applied in determining the linear relationship (if present) in two variables. These statistics are useful as they also help in establishing the type of relationship that exist among the variables (Chee, 2015; Pallant, 2011). Pearson *r* coefficient varies from -1 to +1, where a -1 refers to a perfectly negative relationship and +1 indicates a perfectly positive relationship. A coefficient of zero (0) indicates that there is no relationship between the variables (Pallant, 2011; Saunders et al., 2016; Struwig et al., 2013). The Pearson *r* was used in the study to define the correlation among the behavioral factors and zero-waste shopping.

Cohen (1988) came up with seminal guidelines used in interpreting the Pearson *r* as summarized in Table 4.4.

Table 4.4: Pearson *r* interpretation guideline

***r* values**	**Interpretation of coefficient**
0.10 – 0.29	Small
0.30 – 0.49	Moderate
≥ 0.50	Large

Source: Cohen (1988)

The measures presented in Table 4.4 were used when analyzing the Pearson *r* for the study. The importance of these measures is that they help indicate the depth of the correlation between the variables.

4.8.2.3 *T*-Test

Various researcher (Saunder et al., 2016; Pallant, 2011) define the *t*-test as a test used in comparing the values on some continuous variables for two or on two occasions. There are two types of *t*-tests, including the independent sample *t*-test and the paired sample *t*-test. Pallant (2011) mentions that independent sample *t*-test is used when comparing the mean of two varying groups of people or conditions while the paired sample *t*-test is used in comparing the means for the same group of people under two varying conditions. For this study, the independent sample *t*-test will be used.

4.8.2.4 Path Analysis

Path analysis is regarded in research as an extension of multiple regression. Stage, Carter and Nora (2010) define path analysis as a model used to depict the influence of a group of variables on another variable. The researchers further state that the aim of this inferential statistical technique is to "provide the estimates of the magnitude and

significance of the hypothesized casual connections among sets of variables displayed using a path diagram". In the study as seen in Figure 3.1, a path diagram was used in the construction of the hypothesis. The figure looks at the first sets of independent variables (attitude, subjective norms, perceived behavioral control, moral norms, self-identity and past experience) effects on intention and zero-waste shopping behavior. However, the effect of these first line of variables on zero-waste shopping behavior is based on the influence of the second variable – intention on zero-waste shopping behavior. The path analysis was tested through the use of the SmartPLS 3. SmartPLS 3 identifies the relationship that exist among the variables (Ringle, Wende, & Becker, 2015).

4.9 Summary

The chapter identified the research method and design which will be implemented in the study. A quantitative study was decided to be the best research method for the study. This study was going to be done with the use of a questionnaire which prior to distribution was tested by conducting a pilot study on the sample to ensure the questionnaire was ready for distribution. The official questionnaire was to be distributed among respondents who fit the requirement for the study. The questions and the format of the study was also discussed in this chapter. The chapter lastly discussed the various test that shall be conducted when the data is collected from the questionnaires.

In the next chapter, the data from the questionnaires will be presented to help in making a decision about the study.

Chapter 5

EMPIRICAL RESEARCH FINDINGS

5.1 Introduction

In Chapter Four, the research methodology and design used in the study was identified. The previous chapter also elaborated on the statistical techniques and measures which would be used in the study to analyze the results from the empirical data acquired. This chapter will provide and discuss the findings or results acquired from the empirical research carried out on the 300 responses. These results will be presented using tables and discussions.

The findings include the frequency data of the respondents. This will be followed by normality statistics results for the variables, looking at their skewness and kurtosis. A construct validity and reliability will be provided on the results conducted on PLS. Bivariate correlations will be presented to indicate the factors of behavior that influence intention and subsequently if intention influences zero waste shopping in TRNC. The results of the tested hypothesis for the study are also provided. A post-hoc analysis is also performed looking specifically at the T-test and One Way ANOVA.

5.2 Demographic Analysis

The results of the questions found on part two of the questionnaire (Appendix A) will be provided. Table 5.1 displays the demographic results of the 300 respondents.

Table 5.1: Demographic Results of Respondents

Variable	Levels	Number (N)	Percentage
Citizenship	Turkish Cypriot	76	25.3
	Foreign Citizen	224	74.7
Gender	Female	163	54.3
	Male	137	45.7
Age Group	18-25 Years	172	57.3
	26-33 Years	59	19.7
	34-41 Years	35	11.7
	42-50 Years	26	8.7
	50+	8	2.7
Income Level	0-999 TL	60	20.0
	1000-1999 TL	69	23.0
	2000-2999 TL	56	18.7
	3000-3999 TL	50	16.7
	4000-4999 TL	31	10.3
	5000 TL and above	34	11.3
Marital Status	Married	64	21.3
	Single	236	78.7
Occupation Status	Full-time employed	63	21.0
	Part-time employed	31	10.3
	Self-employed	38	12.7
	Student	165	55.0
	Unemployed but not student	3	1.0
	Retired	0	0
Education	High school diploma	52	17.3
	Secondary school	16	5.3
	University level	127	42.3
	Postgraduate level	105	35.0
Frequency of Shopping	Once a month	43	14.3
	Twice a month	55	18.3
	Three times a month	76	25.3
	Once a week	78	26.0
	Every second day	30	10.0
	Everyday	18	6.0

As it can be seen in Table 5.1, it was evident that most of the respondents were Foreign Citizens (74.7%) residing in TRNC while 25.3% were Turkish Cypriots. The sample comprised 54.3% (N= 163) of females and 45.7% (N= 137) of males.

The most dominant age group among the respondents were those between the age of 18 to 25 years (57.3%, N= 172), followed by the age group of 26-33 years (19.7%, N= 59) and the age group of 34-41 years (11.7%, N= 35). Few respondents were between the age of 42-50 years (8.7%, N= 26) and the least age group was for a respondent who are 50 (2.7%, N= 8)

With regards to the income level, 23.0% (N= 69) of the respondents said they had an income level between the 1000 and 1999 Turkish Lira (TL), 20.0% (N= 60) of the respondents said they had an income level of between 0 and 999 TL, 18.7% (N= 56) said they have an income level of between 2000 and 2999 TL while 16.7% (N= 50) said they receive between 3000 and 3999 TL. 10.3% of the other respondents said the respondents said they had an income level of between 4000 and 4999 TL and the least respondents (11.3%, N= 34) said they had an income level of 5000 TL and above.

As per Table 5.1, a great number and percentage of the respondents (78.7%, N= 236) were single while only 21.3% (N= 64) were married. Furthermore, 55.0% of the respondents (N= 165) were students, 21.0% (N= 63) were full-time employed workers, 10.3% (N= 31) are part-time employed workers, 12.7% (N= 38) were self-employed and the rest of the respondents (1.0%, N=3) were unemployed but not students. There were no retired people among the respondents.

17.3% (N= 52) respondents have completed their high school diploma, 5.3% (N= 16) of the respondents have completed secondary school. The most completed education level among the respondents was university level with 42.3% (N= 127), and postgraduate level being the second highest (35.0%, N= 105).

Finally, as per the results, 25.3% of the respondents go shopping three times a month, 26.0% go once a week, 18.3% go twice a month while 14.3% of the respondents go once a month. 10.0% of the respondents go every second day and 6.0% go shopping every day.

5.3 Normality

The test for normality was performed on the variables and the results of the test will be illustrated using the results from both the skewness and kurtosis statistics.

Table 5.2: Skewness and Kurtosis Statistics

	Skewness	**Kurtosis**
Attitude	-1.367	1.751
Subjective Norms	-.444	-.116
Perceived Behavioral Control	-.542	-.506
Moral Norms	-.521	-.091
Self-identity	-.574	-.386
Past Experience	-.731	-.175
Intention	-1.029	.753
Zero Waste Shopping Behavior	-.443	-.420

Table 5.2 illustrated that all the variables were negatively skewed with their figures being negative. Furthermore, Attitude and Intention out of all the other variables had a positive kurtosis meaning that their distribution were rather centered. The other variables had a negative kurtosis (below 0) meaning that their distributions are relatively flat.

5.4 Construct Validity and Reliability

The validity and reliability of the variables were determined by conducting a factor analysis using SmartPLS3. The factor loadings and the average variance extracted (AVE) were used in determined the convergent validity. Factor loadings within 0.61 and 1.00 or greater than 0.5 were considered suitable for the study (Dijkstra &

Henseller, 2015; Mustakallio, Autio & Zahra, 2002) while the AVE value should be greater than 0.50 to be considered suitable for testing convergent validity (Hair, Black, Babin, Anderson, & Tatham, 2006; Henseller, Ringe & Sinkovics, 2009). Hair et al. (2006) further mention that factor loadings lower than 0.5 should be dropped from the data set.

Henseller et al. (2009) state that the Cronbach alpha and composite reliability are used for internal consistency as they measure reliability depending on the relationship between the observed item variables. The Cronbach alpha and the composite reliability coefficient were determined using the proposed threshold of 0.6 and above as being acceptable for reliability (George & Mallery, 2003; Hair et al., 2006; Hair, Hult, Ringle & Sarstedt, 2014). According to Dijkstra et al. (2015), the rho_A coefficient is also an important reliability measure because it estimates reliability consistently with a threshold of 0.6 being considered acceptable.

From Table 5.3, the Cronbach alpha and the composite reliability coefficients of all the variables were high and good as they ranged between 0.62 and 0.92. The rho_A scores for all the constructs were above the 0.6 threshold which was acceptable for the study. These results provided enough evidence of reliability in all the constructs.

As shown in Table 5.3, the factor loadings showed that there were various constructs with factor loadings of 0.61 and above. Any construct that loaded onto more than one or had a factor loading lower than the threshold were eliminated as per previous literature. The AVE coefficients of the constructs all were above the threshold (between 0.54 to 0.79) and hence acceptable for the study.

Table 5.3: Confirmatory Factor Analysis Results

Construct	Item	Factor Loading	Average Variance Extracted	Composite Reliability	Cronbach α	rho_A
Attitude	ATT1	0.775	0.620	0.867	0.797	0.806
	ATT2	0.782				
	ATT3	0.823				
	ATT4	0.767				
	ATT5	-				
Intention	INT1	0.782	0.662	0.854	0.743	0.759
	INT2	0.878				
	INT3	0.777				
	INT4	-				
Moral Norms	MON1	0.644	0.573	0.842	0.748	0.752
	MON2	0.785				
	MON3	0.792				
	MON4	0.798				
Past Experience	PAE1	0.907	0.795	0.921	0.871	0.873
	PAE2	0.913				
	PAE3	0.854				
Perceived Behavioral Control	PERC1	0.868	0.725	0.841	0.622	0.626
	PERC2	0.835				
	PERC3	-				
	PERC4	-				
Self-Identity	SEI1	0.822	0.736	0.918	0.881	0.889
	SEI2	0.884				
	SEI3	0.850				
	SEI4	0.874				
Subjective Norms	SUN1	0.783	0.653	0.883	0.823	0.825
	SUN2	0.815				
	SUN3	0.840				
	SUN4	0.794				
	SUN5	-				
Zero Waste Shopping	ZW1	0.664	0.541	0.854	0.787	0.790
	ZW2	0.797				
	ZW3	0.780				
	ZW4	0.729				
	ZW5	0.699				

Note: (-) = Dropped from CFA

With regards to determining the discriminant validity, three criterions were used in the process based on the results presented in Tables 5.4 and 5.5. The first criterion for discriminant validity was that the factor loadings for the assigned construct had to be higher than the loadings of all the other constructs (Hair et al., 2014). The second criterion was making a comparison between the square root of the AVE with the correlations for each constructs and ensuring that the square root of AVE was greater than the correlation between the variables (Fornell & Larcker, 1981). The other measure of discriminant validity was ensuring that all the HTMT values do not pass the suggested threshold of 0.90 (Henseller, Ringle & Sarstedt, 2015; Gold, Malhotra & Segars, 2001). All the criterions mentioned above were used and were met. Therefore, the results (Table 5.4 and 5.5) proved that there was no reason for concern pertaining to discriminant validity.

Table 5.4: Descriptive Statistics and Correlations

	M	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1ATT	4.377	.630	**0.787**							
2INT	4.360	.655	0.611	**0.813**						
3MON	3.840	.760	0.494	0.576	**0.757**					
4PAE	3.680	1.008	0.419	0.493	0.659	**0.892**				
5PERC	3.773	.991	0.338	0.365	0.522	0.487	**0.851**			
6SEI	3.598	.942	0.403	0.513	0.729	0.769	0.589	**0.858**		
7SUN	3.865	.781	0.410	0.454	0.553	0.449	0.475	0.562	**0.808**	
8ZW	3.691	.868	0.414	0.477	0.646	0.607	0.488	0.693	0.459	**0.736**

Note: Diagonal values in bold are square root of the AVEs; M= mean, SD= standard deviation, ATT= Attitude, INT= Intention, MON= Moral Norms, PAE= Past Experience, PERC= Perceived Behavioral Control SEI= Self Identity, SUN= Subjective Norms, ZW= Zero Waste Shopping Behavior.
All correlations are significant at $p < .01$.

Table 5.5: HTMT Ratio

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1ATT								
2INT	0.778							
3MON	0.630	0.772						

4PAE	0.496	0.604	0.811				
5PERC	0.473	0.529	0.771	0.658			
6SEI	0.472	0.620	0.894	0.871	0.799		
7SUN	0.498	0.573	0.705	0524	0.661	0.652	
8ZW	0.507	0.611	0.843	0.739	0.701	0.839	0.568

Note: ATT= Attitude, INT= Intention, MON= Moral Norms, PAE= Past Experience, PERC= Perceived Behavioral Control SEI= Self Identity, SUN= Subjective Norms, ZW= Zero Waste Shopping Behavior.

5.5 Structural Model

The structured model was estimated to determine the coefficient of determination (R^2), the effect size (f^2), and the adjusted R^2. The *t*-statistic and its *p*-value were obtained using a bias corrected confidence interval of 95% and an accelerated bootstrap of 2000 resamples. As per the result on Table 5.6 below, the R^2 of INT and ZW were 0.492 and 0.227, respectively. With an R^2 of 0.492, the variables – attitude, moral norms, past experience, perceived behavioral control, self-identity and subjective norms- explained 49.2% of the variance in intention. Intention subsequently explained 22.7% variance in zero waste shopping behavior.

Pertaining to the effect size of the various variables on INT, there was a medium effect by ATT (0.227), while there were small effects by MON (0.037), PAE (0.005), PERC (0.001), SEI (0.005) and SUN (0.010) on INT. There was a medium to strong size effect of INT on ZW (0.294). The Variance Inflation Factors (VIF) was used in determining the estimated inflation in the variance of the coefficients as a result of inflation (Senaviratna, & Cooray, 2019; Shrestha, 2020). According to Shrestha (2020), a VIF value lesser than 5 (VIF<5) shows that there is a moderate correlation between the variables. The latter mentions that VIF values greater than 5 often indicate the presence of multicollinearity in the regression model. The results on Table 5.6 show that there was no multicollinearity in results as all the VIFs were lesser than 5.

Table 5.6: Structured Model Results

Construct	R^2	Adj. R^2	f^2	VIF
ATT			0.227	1.401
MON			0.037	2.580
PAE			0.005	2.624
PERC			0.001	1.637
SEI			0.005	3.542
SUN			0.010	1.664
INT	0.492	0.481	0.294	1.000
ZW	0.227	0.225	-	

ATT= Attitude, INT= Intention, MON= Moral Norms, PAE= Past Experience, PERC= Perceived Behavioral Control SEI= Self Identity, SUN= Subjective Norms, ZW= Zero Waste Shopping Behavior.

5.6 Test of Hypothesis

Hypothesis 1 proposes that ATT positively influences a consumer's zero waste shopping INT. The results showed that ATT significantly influenced INT (β= 0.402, *p*= 0.000), thus giving enough evidence to support H1.

Hypothesis 2 proposes that SUN positively influences a consumer's zero waste shopping INT. The results showed that SUN did not significantly influence INT (β= 0.091, *p*= 0.087) and the BCa does contain zero, thus not giving sufficient evidence to support H2.

Hypothesis 3 proposes that PERC positively influences a consumer's zero waste shopping INT. The results showed that PERC did not significantly influence INT (β= -0.021, *p*= 0.713), thus not giving enough evidence to support H3.

Hypothesis 4 proposes that MON positively influences a consumer's zero waste shopping INT. The results showed that MON significantly influenced INT (β= 0.219, *p*= 0.001), thus giving enough evidence to support H4.

Hypothesis 5 proposes that SEI positively influences a consumer's zero waste shopping INT. The results showed that SEI did not significantly influence INT (β= 0.092, *p*= 0.282), thus not giving enough evidence to support H5.

Hypothesis 6 proposes that PAE positively influences a consumer's zero waste shopping INT. The results showed that PAE did not significantly influence INT (β= 0.080, *p*= 0.201), thus not giving enough evidence to support H6.

Hypothesis 7 proposes that INT positively influences a consumer's ZW. The results showed that INT significantly influenced ZW (β= 0.477, *p*= 0.000) and the BCa did not contain zero, thus giving sufficient evidence to support H7.

Table 5.7: Hypothesis test results

	β	**t**	***p*-values**	**BCa**	
				LL	UL
ATT-INT	0.402 ***	7.131	0.000	0.292	0.510
SUN-INT	0.091	1.714	0.087	-0.017	0.192
PERC-INT	-0.021	0.368	0.713	-0.130	0.097
MON-INT	0.219 **	3.189	0.001	0.081	0.352
SEI-INT	0.092	1.075	0.282	-0.078	0.256
PAE-INT	0.080	1.278	0.201	-0.041	0.202
INT-ZW	0.477 ***	9.749	0.000	0.379	0.568

*p< .05; **p< .01; ***p< .001; BCa= bias corrected accelerated; LL= lower limit; UL= upper limit; ATT= Attention, INT= Intention, MON= Moral Norms, PAE= Past Experience, PERC= Perceived Behavioral Control SEI= Self Identity, SUN= Subjective Norms, ZW= Zero Waste Shopping Behavior.

From Table 5.7, it was observed that there was a statistical relationship at *p*= 0.001 and *p*= 0.05 between the variables (attitude and moral norms) and intention. These variables hence were positively associated to consumers' zero waste shopping intention in the case of TRNC. Furthermore, a statistical relationship was also observed at *p*= 0.001 between intention and zero waste shopping behavior in TRNC. Therefore,

H_1, H_4 and H_7 were supported. Since the *p* values for the relationships between the variables -past experience, perceived behavioral control, self-identity and subjective norms- and intention were each greater than 0.05, hypotheses H_2, H_3, H_5 and H_6 were not supported. The results suggested that past experience, perceived behavioral control, self-identity and subjective norms did not positively influence consumers' zero waste intention in TRNC. The results were not to say that the variables of the unsupported hypothesis were not considered in zero waste shopping intention in TRNC, but that the respondents did not regard these as that important.

5.7 Post Hoc Analysis

In this section, the results of the *T*-test and the One-way Anova will be presented.

5.7.1 *T*-Test

In the study, the independent sample *t*-test is conducted by using the variables (independent and dependent) as the test variables and testing on gender and marital status as two grouping variables, as shown by Tables 5.8 and 5.9 below respectively.

Table 5.8: T-Test Results of Variables and Gender

Variables	**Groups**	***M***	***SD***	***t***	***p***
Attitude	Female	4.489	.563	3.381	**.001**
	Male	4.243	.68		
Subjective Norms	Female	3.937	.734	1.732	.084
	Male	3.779	.829		
Perceived Behavioral Control	Female	3.81	.92	.695	.488
	Male	3.73	1.071		
Moral Norms	Female	3.936	.707	2.368	**.019**
	Male	3.726	.807		
Self-Identity	Female	3.709	.887	2.226	**.027**
	Male	3.467	.991		
Past Experience	Female	3.828	.968	2.809	**.005**
	Male	3.504	1.03		
Intention	Female	4.474	.582	3.301	**.001**
	Male	4.224	.711		
Zero Waste Shopping	Female	3.871	.776	3.967	**.000**
	Male	3.476	.924		

Note: ΣN = 300

From Table 5.8 above there was no significant difference in the mean scores of subjective norms (*t* [298] = 1.732, *p*= .084) and perceived behavioral control (*t* [298] = .695, p= .488) - for females and males.

There was however a significant difference in the mean scores of attitude for females (M= 4.489, SD= .563) and males (M= 4.243, SD= .68) in general: (*t* [298] = 3.381, *p*= .001). The magnitude of the difference in the means (means difference= .24656, 95% CI: .103 to .390). There also existed a mean difference in the scores of moral norms for females (M= 3.936, SD= .707) and males (M= 3.726, SD= .807) in general: (*t* [272.813] = 2.368, *p*= .019). The magnitude of the difference in the means (means difference= .20931, 95% CI: .035 to .383). Self-identity also portrayed a significant mean difference in the mean scores for females (M= 3.709, SD= .887) and males (M= 3.467, SD= .991) in general: (*t* [298] = 2.226, *p*= .027). The magnitude of the difference in the means (means difference= .24144, 95% CI: .097 to .552). The results also showed that there was a significant difference in the mean scores of past experience for females (M= 3.828, SD= .968) and males (M= 3.504, SD= 1.03) in general: (*t* [298] = 2.809, *p*= .005). The magnitude of the difference in the means (means difference= .32457, 95% CI: .097 to .552).

From the results above, there was a significant difference in the mean scores of intention for females (M= 4.474, SD= .582) and males (M= 4.224, SD= .711) in general: (*t* [298] = 3.358, *p*= .001). The magnitude of the differences in the means (mean differences= 0.25059, 95% CI: .104 to .397). The results also showed that there was a significant difference in the mean scores of zero waste shopping behavior for

females (M= 3.871, SD= .776) and males (M= 3.476, SD= .924) in general: (*t* [266.350] = 3.967, *p*= .000). The magnitude of the differences in the means (mean differences= .39525, 95% CI: .102 to .557).

Table 5.9: T-test Results of Variables and Marital Status

Variables	**Groups**	***M***	***SD***	***t***	***p***
Attitude	Married	4.361	.644	-.815	.416
	Single	4.434	.578		
Subjective Norms	Married	3.832	.759	-1.426	.155
	Single	3.988	.853		
Perceived Behavioral Control	Married	3.712	1.007	-2.075	**.039**
	Single	4.000	.900		
Moral Norms	Married	3.990	.674	-1.968	.052
	Single	3.799	.778		
Self-Identity	Married	3.832	.87	-2.253	**.025**
	Single	3.535	.953		
Past Experience	Married	3.99	.84	-3.155	**.002**
	Single	3.596	1.035		
Intention	Married	4.340	.678	-.996	.320
	Single	4.432	.559		
Zero Waste Shopping	Married	3.875	.823	-1.924	.055
	Single	3.641	.874		

Note: ΣN = 300

From Table 5.9 above there was no significant difference in the mean scores of attitude (*t* [298] = -.815, *p*= .416), subjective norms (t [298] = -1.426, p= .155), moral norms (*t* [112.783] = -1.968, *p*= .052), intention (*t* [298] = -.996, *p*= .320) and zero waste shopping behavior (*t* [298] = -1.924, *p*= .055) - for married and single respondents.

From the results above, there was a significant difference in the mean scores of perceived behavioral control for females (M= 3.712, SD= 1.007) and males (M= 4.000, SD= .900) in general: (*t* [298] = -2.075, *p*= .039). The magnitude of the differences in the means (mean differences= -2.8814, 95% CI: -.561 to -.015). There was also a

significant difference in the mean scores of self-identity for married respondents (M= 3.832, SD= .87) and single respondents (M= 3.535, SD= .953) in general: (*t* [298] = -2.253, *p*= .025). The magnitude of the difference in the means (means difference= -.29707, 95% CI: -.557 to -.038). There also existed a mean difference in the scores of past experience for married respondents (M= 3.99, SD= .84) and single respondents (M= 3.6, SD= 1.035) in general: (*t* [272.813] = -3.155, *p*= .002). The magnitude of the difference in the means (means difference= -.39354, 95% CI: -.641 to -.147).

5.7.2 One Way Analysis of Variance (ANOVA)

The ANOVA results of all the grouping variables will be presented based on the dependent and independent variables as seen in the tables below.

Table 5.10: ANOVA Results for Attitude

Variables	**Groups**	***M***	***SD***	***F***	***p***
Age Group	18-25 Years	4.326	.663	1.433	.225
	26-33 Years	4.386	.613		
	34-41 Years	4.450	.65		
	42-50 Years	4.548	.458		
	50+ Years	4.531	.248		
Income Level	0-999 TL	4.371	.495	1.489	.193
	1000-1999 TL	4.467	.624		
	2000-2999 TL	4.201	.716		
	3000-3999 TL	4.340	.646		
	4000-4999 TL	4.436	.766		
	5000 TL and above	4.493	.509		
Occupation Status	Full-time employed	4.441	.578	1.135	.340
	Part-time employed	4.266	.819		
	Self-employed	4.217	.71		
	Student	4.411	.590		
	Unemployed but not student	4.333	.382		
Education Level	High school diploma	4.578	.285	.657	.579
	Postgraduate level	4.365	.605		
	Secondary School	4.347	.625		

	University Level	4.388	.685		
Frequency of Shopping	Every second day	4.250	.685	.372	.868
	Everyday	4.333	.728		
	Once a month	4.372	.565		
	Once a week	4.369	.619		
	Three times a month	4.421	.667		
	Twice a month	4.414	.594		

From the results on Table 5.10, there was no significant difference in the attitude between the various groups for the variables - age group, occupation status, income level, education level and frequency of shopping.

Table 5.11: ANOVA Results for Subjective Norms

Variables	**Groups**	***M***	***SD***	***F***	***p***
Age Group	18-25 Years	3.773	.769	2.770	**.028**
	26-33 Years	3.860	.851		
	34-41 Years	3.986	.820		
	42-49 Years	4.144	.58		
	50+ Years	4.438	.477		
Income Level	0-999 TL	3.742	.751	1.409	.221
	1000-1999 TL	3.902	.771		
	2000-2999 TL	3.799	.778		
	3000-3999 TL	3.775	.905		
	4000-4999 TL	4.057	.654		
	5000 TL and above	4.074	.745		
Occupation Status	Full-time employed	4.068	.757	1.767	.135
	Part-time employed	3.782	.843		
	Self-employed	3.697	.831		
	Student	3.836	.764		
	Unemployed but not student	4.167	.144		
Education Level	High school diploma	3.922	.617	.516	.672
	Postgraduate level	3.846	.745		
	Secondary School	3.921	.769		
	University Level	3.798	.838		
	Every second day	3.908	.671	.118	.988

Frequency of Shopping	Everyday	3.833	1.061
	Once a month	3.831	.874
	Once a week	3.833	.749
	Three times a month	3.911	.768
	Twice a month	3.859	.751

The results displayed on Table 5.11 indicates that there was no significant difference in subjective norms for income level, occupation status, education level and frequency of shopping. There was however a significant difference in the subjective norms between the age groups where the highest mean was the "50+ Years" group and the lowest mean was the "18-25 Years" group.

Table 5.12: ANOVA Results for Perceived Behavioral Control

Variables	**Groups**	***M***	***SD***	***F***	***p***
Age Group	18-25 Years	3.637	.99	5.006	**.001**
	26-33 Years	3.771	1.112		
	34-41 Years	4.014	.772		
	42-50 Years	4.077	.845		
	50+ Years	4.688	.530		
Income Level	0-999 TL	3.542	1.106	2.109	.064
	1000-1999 TL	3.754	.957		
	2000-2999 TL	3.679	.927		
	3000-3999 TL	3.780	1.006		
	4000-4999 TL	4.129	.826		
	5000 TL and above	4.044	.98		
Occupation Status	Full-time employed	3.881	.958	.857	.490
	Part-time employed	3.790	.981		
	Self-employed	3.961	1.036		
	Student	3.685	.999		
	Unemployed but not student	3.833	.764		
Education Level	High school diploma	3.656	1.012	1.243	.294
	Postgraduate level	3.548	1.121		
	Secondary School	3.831	.947		

	University Level	3.833	.967		
Frequency of Shopping	Every second day	3.600	1.199	.745	.590
	Everyday	4.139	.819		
	Once a month	3.698	1.129		
	Once a week	3.763	.918		
	Three times a month	3.776	.936		
	Twice a month	3.818	.988		

From the results displayed on Table 5.12, there was no significant difference in the Perceived Behavioral Control for income level, occupation status, education level and frequency of shopping. There was however a significant difference in the Perceived Behavioral Norms between the age groups where the highest mean was the "50+ Years" group and the lowest mean was the "18-25 Years" group.

Table 5.13: ANOVA Results of Moral Norms

Variables	**Groups**	***M***	***SD***	***F***	***p***
Age Group	18-25 Years	3.737	.760	2.597	0.37
	26-33 Years	3.877	.802		
	34-41 Years	3.986	.757		
	42-49 Years	4.135	.629		
	50+ Years	4.188	.438		
Income Level	0-999 TL	3.600	.744	3.238	**.007**
	1000-1999 TL	3.862	.776		
	2000-2999 TL	3.732	.741		
	3000-3999 TL	3.870	.801		
	4000-4999 TL	4.161	.776		
	5000 TL and above	4.059	.561		
Occupation Status	Full-time employed	3.925	.708	.687	.601
	Part-time employed	3.927	.756		
	Self-employed	3.908	.918		
	Student	3.774	.747		
	Unemployed but not student	3.917	.382		
Education Level	High school diploma	3.673	.914	1.016	.386

	Postgraduate level	3.879	.726		
	Secondary School	3.891	.866		
	University Level	3.870	.703		
Frequency of Shopping	Every second day	3.733	1.021	.567	.725
	Everyday	3.819	.966		
	Once a month	3.721	.736		
	Once a week	3.824	.693		
	Three times a month	3.882	.674		
	Twice a month	3.964	.755		

From the results displayed on Table 5.13, it can be seen that there was no significant difference in the Moral Norms for age group, occupation status, education level and frequency of shopping. There was however a significant difference in the Moral Norms between the income levels where the highest mean was the "4000-4999 TL" group and the lowest mean was the "0-999 TL" group.

Table 5.14: ANOVA Results for Self-Identity

Variables	**Groups**	***M***	***SD***	***F***	***p***
Age Group	18-25 Years	3.484	.989	4.483	.002
	26-33 Years	3.559	.844		
	34-41 Years	3.779	.921		
	42-50 Years	3.981	.768		
	50+ Years	4.313	.513		
Income Level	0-999 TL	3.250	1.005	3.958	**.002**
	1000-1999 TL	3.641	.975		
	2000-2999 TL	3.607	.754		
	3000-3999 TL	3.490	1.031		
	4000-4999 TL	3.919	.807		
	5000 TL and above	3.978	.817		
Occupation Status	Full-time employed	3.702	.929	1.089	.362
	Part-time employed	3.702	.762		
	Self-employed	3.776	.935		
	Student	3.502	.977		
	Unemployed but not student	3.417	.946		

Education Level	High school diploma	3.370	1.154	1.860	.139
	Postgraduate level	3.557	.955		
	Secondary School	3.813	.750		
	University Level	3.699	.842		
Frequency of Shopping	Every second day	3.193	1.309	1.136	.341
	Everyday	3.673	.943		
	Once a month	3.523	.888		
	Once a week	3.571	.89		
	Three times a month	3.681	.850		
	Twice a month	3.714	.992		

From the results on Table 5.14, there was no significant difference in Self-Identity between the various groups for the variables - occupation status, education level and frequency of shopping. There was however a significant difference in the Self-Identity between the income levels where the highest mean was the "5000 TL and above" group and the lowest mean was the "3000-3999 TL" group. There was also a significant difference in the age groups where the highest mean was "50+ Years" group and the lowest mean was the "18-25 Years" group.

Table 5.15: ANOVA Results for Past Experience

Variables	**Groups**	***M***	***SD***	***F***	***p***
Age Group	18-25 Years	3.556	1.012	5.845	**.000**
	26-33 Years	3.582	1.059		
	34-41 Years	3.905	.955		
	42-50 Years	4.18	.801		
	50+ Years	4.458	.248		
Income Level	0-999 TL	3.283	1.103	3.628	**.003**
	1000-1999 TL	3.816	.925		
	2000-2999 TL	3.625	.841		
	3000-3999 TL	3.633	1.048		
	4000-4999 TL	3.882	1.144		
	5000 TL and above	4.078	.861		
Occupation Status	Full-time employed	3.884	.964	1.757	.137

	Part-time employed	3.699	.96		
	Self-employed	3.886	.981		
	Student	3.55	1.035		
	Unemployed but not student	3.778	.509		
Education Level	High school diploma	3.494	1.207	1.504	.216
	Postgraduate level	3.61	1.037		
	Secondary School	3.750	.765		
	University Level	3.806	.564		
Frequency of Shopping	Every second day	3.622	1.124	1.543	.179
	Everyday	3.593	1.118		
	Once a month	3.457	1.098		
	Once a week	3.564	1.091		
	Three times a month	3.768	.925		
	Twice a month	3.958	.762		

From the results on Table 5.15, there was no significant difference in the Past Experience between the various groups for the variables - occupation status, education level and frequency of shopping. There was however a significant difference in the Past Experience between the income levels where the highest mean was the "5000 TL and above" group and the lowest mean was the "0-999 TL" group. There is also a significant difference in the age groups where the highest mean was "50+ Years" group and the lowest mean was the "18-25 Years" group.

Table 5.16: ANOVA Results for Intention

Variables	**Groups**	***M***	***SD***	***F***	***p***
Age Group	18-25 Years	4.275	.697	4.877	**.001**
	26-33 Years	4.463	.637		
	34-41 Years	4.343	.563		
	42-50 Years	4.539	.463		
	50+ Years	4.917	.236		
Income Level	0-999 TL	4.322	.559	1.668	.142
	1000-1999 TL	4.329	.69		
	2000-2999 TL	4.226	.7		
	3000-3999 TL	4.353	.682		

	4000-4999 TL	4.516	.719		
	5000 TL and above	4.578	.515		
Occupation Status	Full-time employed	4.471	.544	1.468	.317
	Part-time employed	4.473	.734		
	Self-employed	4.36	.699		
	Student	4.293	.667		
	Unemployed but not student	4.556	.509		
Education Level	High school diploma	4.208	.708	.361	.781
	Postgraduate level	4.333	.646		
	Secondary School	4.375	.614		
	University Level	4.378	.703		
Frequency of Shopping	Every second day	4.411	.676	.128	.986
	Everyday	4.370	.635		
	Once a month	4.295	.698		
	Once a week	4.359	.642		
	Three times a month	4.373	.712		
	Twice a month	4.364	.571		

From the results displayed on Table 5.16, there was no significant difference in the Intention for age group, income level, occupation status, education level and frequency of shopping.

Table 5.17: ANOVA Results for Zero Waste Shopping

Variables	**Groups**	***M***	***SD***	***F***	***p***
Age Group	18-25 Years	3.591	.852	2.966	**.020**
	26-33 Years	3.688	.92		
	34-41 Years	3.771	.835		
	42-50 Years	4.046	.828		
	50+ Years	4.35	.602		
Income Level	0-999 TL	3.427	.911	2.791	**.018**
	1000-1999 TL	3.658	.866		
	2000-2999 TL	3.671	.713		
	3000-3999 TL	3.684	.973		
	4000-4999 TL	3.955	.934		

	5000 TL and above	4.024	.664		
Occupation Status	Full-time employed	3.819	.877	1.468	.212
	Part-time employed	3.807	.953		
	Self-employed	3.832	.857		
	Student	3.596	.839		
	Unemployed but not student	3.200	1.311		
Education Level	High school diploma	3.485	.926	3.762	**.011**
	Postgraduate level	3.560	.933		
	Secondary School	3.788	.795		
	University Level	3.871	.762		
Frequency of Shopping	Every second day	3.507	1.081	1.183	.317
	Everyday	3.633	1.081		
	Once a month	3.698	.793		
	Once a week	3.613	.826		
	Three times a month	3.687	.837		
	Twice a month	3.920	.813		

From the results on Table 5.17, there was no significant difference in the Zero Waste Shopping Behavior between the various groups for the variables - occupation status and frequency of shopping. There was however a significant difference in the Zero Waste Shopping Behavior between the education levels where the highest mean was the “University Level” group, and the lowest mean was the “High school diploma” group. There was also a significant difference in the age groups where the highest mean was “50+ Years” group and the lowest mean was the “18-25 Years” group. There was another significant difference in the Zero Waste Shopping Behavior between the education levels where the highest mean was the “University level” group and the lowest mean was the “High School diploma” group.

5.8 Summary

In Chapter Six, a summary of all the chapters in the study will be discussed. Chapter Six will further discuss and provide a summary pertaining to the empirical data obtained in Chapter Five, which will be used in providing recommendations pertaining to Zero waste Shopping Behavior in North Cyprus. Chapter Six will afterwards outline the limitations of the study. The chapter will also give recommendations for future research.

Chapter 6

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The main objective of the study was to determine how consumer behavioral traits influence zero-waste shopping in the TRNC. This objective was achieved through various steps including acquiring of existing literature on zero-waste shopping (which was considered as the dependent variable) and consumer behavioral traits (independent variables). Furthermore, the primary objective of the study was achieved by developing a conceptual hypothesized model for the study; determining the research design methods to be used in the study; acquiring the data for the study and carrying an empirical study.

In this chapter, a discussion on the results of the empirical study will be elaborated upon. The limitations of the study will be highlighted. This chapter will also provide a conclusion and recommendations which can be used for future research.

6.2 Discussion of Hypothesis

In the previous chapter, it was established that out of the seven hypothesis which were constructed for the study, three hypotheses based on the empirical researched performed were accepted while the other four hypotheses were rejected. In the following sections, discussions of the accepted hypothesis will be made followed by discussions on the rejected hypothesis.

6.2.1 Discussion of the Accepted/ Supported Hypothesis

The three accepted hypotheses for the study will be discussed in this section.

- ***H_1 - Attitude positively influences a consumer's Zero-waste Shopping Intention in TRNC.***

The hypothesis of attitude positively influencing a consumer's zero-waste shopping intention in TRNC was accepted. This therefore meant that consumers perceived attitude as an influential behavioral trait with regards to intention in TRNC. Based on the empirical results it seems that for TRNC to improve zero-waste shopping intention, it is important for the consumers to view zero-waste shopping as a good idea, beneficial, important and favorable. The findings are in line with that of Wang, Fan, Zhao, Yang and Fu (2016) which emphasize that individuals with positive attitude will more probably engage in sustainable behavior like green purchasing intention. According to findings by Blackwell, Miniard and Engel (2001), attitude is associated with intention as it determines what consumers like or dislike and what they are willing to do or avoid doing. This hence suggest that attitude is a key influencer of zero-waste shopping intention in TRNC.

- ***H_4 - Moral Norm is positively associated to a consumer's Zero-waste Shopping Intention in TRNC.***

The hypothesis of moral norms positively influencing a consumer's zero-waste shopping intention in TRNC was accepted. This implied that moral norms are perceived by the consumers as a behavioral trait which influences their intention with regards to zero-waste shopping. Based on the empirical results consumers feel this way as they deem it an obligation to take part in zero-waste shopping practices and not waste anything which is reusable. The findings resonate with the work of various

researchers (Prakash, & Pathak, 2017; Jansson, Marell, & Nordlund, 2010) that personal moral norms of consumers influence the intentions. This is the case as the consumers know what is right due to their strong ethical motives and feel an obligation to do what is right environmentally, hence leading to a positive intention for zero-waste shopping.

- ***H_7 - Intention positively influences a consumer's Zero-waste Shopping Behavior in TRNC.***

The hypothesis of intention positively influencing a consumer's zero-waste shopping behavior in TRNC was accepted. This implied that the consumers' willingness to carry out or preform zero-waste shopping measures in the present and in the future influenced or influences their shopping behavior. Based on the empirical results consumers having such intentions towards purchase end up either using environmentally friendly products, purchasing second-hand items, recycling or reusing products and purchasing from facilities that promote zero-waste. This result is in line with Bisschoff, and Liebenberg's (2012) findings conducted in South Africa with a sample size of 107, about the factors influencing green purchase behavior. The findings confirm that a strong pro-environmental intention either presently or in the future, leads to a greater likelihood of the consumer actually having pro-environmental purchasing behavior. Therefore, intention is positively associated to consumers zero-waste shopping behavior.

6.2.2 Discussion of the Rejected/ Not Supported Hypothesis

The four rejected hypotheses for the study will be discussed in this section.

- ***H_2 - Subjective Norms positively influences a consumer's Zero-waste Shopping Intention in TRNC.***

The findings from the empirical results established that subjective norm does not positively influence zero-waste shopping intention in TRNC. This finding however is not consistent with the work of Chekima, Wafa, Igau, Chekima and Sondoh (2016) conducted in three of the most inhabited cities in Malaysia with a sample size of 405 respondents with the aim of identifying reasons that motivate green consumerism. The researchers assert that consumers with positive subjective norms are more prone to take part in sustainable or green purchasing intention. The findings may hence suggest that TRNC consumers possess little choice or free will with regards to their zero-waste shopping intentions.

- ***H_3 - Perceived Behavioral Control positively influences a consumer's Zero-waste Shopping Intention in TRNC.***

As per the findings, perceived behavioral control does not positively influence a consumer's zero-waste shopping intention in TRNC. This is not in line with Chen and Deng's (2016) findings per their research conducted in China on a sample of 306 valid respondents which support and established that perceived behavioral control positively influences a consumer's green purchase intention. According to Zhuang, Luo and Riaz (2021), such a perceived behavioral control will positively influence intention when the consumers are confident and provided useful information pertaining to the products. Therefore, the findings may suggest that TRNC consumers have little information or lack confidence in their zero-waste shopping intention.

- ***H_5 - Self-identity positively influences a consumer's Zero-waste Shopping Intention in TRNC.***

The output of the empirical study suggests the self-identity does not positively influence a consumer's zero-waste shopping intention in TRNC. The findings however

are not consistent with previous studies by Saleki, Quoquab & Mohammad (2019) performed on a sample of 246 consumers to determine the factors that influence organic food purchasing intention in Malaysia. According to the researchers' findings, self-identity has a positive relationship with green purchasing intention. The findings from the study may hence suggest that TRNC consumers may not see themselves in a way that influences their intention regarding zero-waste shopping.

- ***H_6 - Past Experience positively influences a consumer's Zero-waste Shopping Intention in TRNC.***

The finding for H6 is not supported, hence suggesting that past experience does not positively influence a consumer's zero-waste shopping intention in TRNC. This contradicts previous findings by D'Souza, Taghian, Lamb and Peretiatkos (2006) conducted in Australia among 155 respondents, to ascertain the elements that influence the green purchase intentions of its customers. The research yielded that past experience is important in creating a specific perception of a product that in turn leads to an intention to purchase either currently or in the future. Therefore, the findings may suggest that TRNC consumers have little experience with regards to zero-waste shopping to influence their intention.

6.3 Limitations of the Study

The study attempted to provide significant contribution to the marketing field especially with regards to zero-waste shopping behavior in TRNC. Nevertheless, the following limitations were apparent upon conducting of the study. The first limitation could be seen in that the demographic of the study pointed out that there were more foreign citizens (74.7%) than Turkish Cypriot (25.3%) respondents. The Turkish Cypriots are not sufficiently represented in the sample. This limitation was as a result

of the situation within which the study was conducted. With the Covid-19 pandemic and lockdown implemented in the country, reaching citizens of the country was hard. Furthermore, only 2.7% of the respondents were above the age of 50, while none of the respondents were retired. Respondents above the age of 50 or retired respondents are not sufficiently represented.

The language barrier was another limitation to the study. With the questionnaire being created and distributed in solely English, this may have been a barrier for non-English speaking individuals who could possibly answer the questionnaire should it have been in their language of preference.

Despite the above limitations identified, the study offers valuable information and contribution to back up the literature on zero-waste shopping as a consumer behavior in TRNC. With this taken into consideration, the following section will provide recommendations that can be considered for future studies.

6.4 Recommendations

This section will provide the recommendations that are made for future studies as well as recommendations made to the TRNC consumers on how to improve the zero-waste shopping behavior in TRNC.

6.4.1 Recommendations for Future Studies

This study investigated the behavioral traits of consumers with regards to zero-waste shopping in TRNC. This was done with the inclusion of Moral Norms, Self-Identity and Past Experience as additional behavioral variables. The following recommendations are provided for future studies

- The study could look at the influence of government intervention on zero-waste shopping activity in TRNC.
- The study could also look at the effect of zero-waste shopping activities on retail marketing methods or strategies.

6.4.2 Recommendations to the TRNC Consumers

Consumers are recommended to encourage other citizens of TRNC to become pro-environmental in their shopping methods. Reaching out to their neighbors, friends and family members and educating them on the importance of zero-waste shopping will help in creating such a behavior amongst the consumers. Here, consumers who have or already know how to practice zero-waste shopping can teach other people on how to do so. This activity can also be done by the shops and the government who have more imposing strength and a greater say on the activities of the consumers.

Consumers should also make zero-waste shopping a routine which they carry out as often as possible. By doing so, the consumers are able to promote a country with high regards to zero-waste shopping as a behavior.

REFERENCES

Aaker, D.A., Day, G.S., & Kumar, V. (2007). *Marketing research* (9th ed.). New York: John Wiley.

Abdulrahman, S.H., Kamaruddin, S.S.B., & Othman, N.B. (2018). Using Theory of Interpersonal Behaviour to Predict Usage Behaviour of Government to Citizen ICT Services among people Affected by the war. *International Journal of Engineering & Technology,* 7(3.20), 316-321.

Abutabenjeh, S., & Jaradat, R. (2018). Clarification of research design, research methods, and research methodology: A guide for public administration researchers and practitioners. *Teaching Public Administration*, 36(3), 237-258.

Acharya, A.S., Prakash, A., & Nigam, A. (2013). Sampling: Why and how of it? *Indian Journal of Medical Specialities*, 4(2), 330-333.

Adams, J., Khan, H.T.A., Raeside, R., & White, D.I. (2007). *Research Methods for Graduate Business and Science Students*. New Delhi: Response Books.

Ajayi, V.O. (2017). *Primary Sources of Data and Secondary Sources of Data*. Retrieved from https://www.researchgate.net/publication/320010397_Primary_Sources_of_Data_and_Secondary_Sources_of_Data.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Ajzen, I. (2002). Perceived behavioural control, self-efficacy, locus of control and the theory of planned behavior. *Journal of Applied Social Psychology*, 32, 1-20.

Ajzen, I. (2015). Consumer attitudes and behaviour: The theory of planned behavior applied to food consumption decisions. *Rivista di Economia Agraria*, 2(15), 121-138.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. London: Pearson.

Akkucuk, U. (2015). *Handbook of research on waste management techniques for sustainability*. Hershey: IGI Global.

Alfred, E. (2016). *Zero wase Toronto: A vision for our city*. Conference proceedings of Toronto Environmental Alliance. Toronto, Ontario, USA.

Alvi, M. (2016). A Manual for Selecting Sampling Techniques in Research. *Munich Personal RePEc Archive (MPRM)*, 1-56.

Amasuomo, E., & Baird, J. (2016). The concept of waste and waste management. *Journal of Management and Sustainability*, 6(4), 88-96.

Andrews, D. (2015). The circular economy, design thinking and education for sustainability. *Local Economy*, 30(3), 305-315.

Arain, M., Campbell, M.J., Cooper, C.L., & Lancaster, G.A. (2010). What is a pilot or feasibility study? A review of current practice and editorial policy. *BMC Medical Research Methodology*, 10(1), 1-7.

Arvola, A.M., Vassallo, M., Dean, P., Lampila, A., Lahteenmaki, S.A., & Shepherd, R. (2008). Predicting intention to purchase organic food: the role of affective and moral attitudes in the Theory of Planned Behaviour. *Appetite*, 50, 443-454.

Awuchi, C.G., Awuchi, C.G., Amagwula, I.O., & Igwe V.S. (2020). Industrial and community waste management: Global perspective. *American Journal of Physical Sciences*, 1(1), 1-16.

Babbie, E., & Mouton, J. (2001). *The practice of social research*. Cape Town: Oxford University Press.

Baldé, C.P., Forti, V., Gray, V., Kuehr, R., & Stegmann, P. (2017). *The Global E-Waste Monitor-2017*. United Nations University (UNU), International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Vienna.

Barilla Center for Food and Nutrition (BCFC). (2012). *Food waste: causes, impacts and proposals*. Retrieved from

https://www.barillacfn.com/m/publications/food-waste-causes-impact-proposals.pdf.

Bartlett, J.E., Kotrlik, J.W., & Higgins, C.C. (2001). Organizational research: Determining appropriate sample size in a survey research. *Information Technology, Learning and Performance Journal*, 19(1), 43-50.

Basu, R. (2009). Solid Waste Management- A Model Study. *Sies Journal of Management*, 6, 20-24.

Bergner, R.M. (2011). What is behavior? And so what? *New Ideas in Psychology*, 29, 147-155.

Bisschoff, C., & Liebenberg, P. (2016). *Identifying factors that influence green purchasing behavior in South Africa* [Paper presentation]. SMA Proceedings 2016, San Antonio, Texas, USA.

Blackwell, R.D., Miniard, P.W., & Engel, J. (2001). *Consumer Behavior*. Fort Worth, Harcourt College Publishers.

Bocken, N.M.P., De Pauw, I., Bakker, C., & Van der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 33(5), 308-320.

Bryman, A., & Bell, E. (2011). *Business Research Methods* (3rd ed.). New York: Oxford University Press.

Bryman, A., Bell, E., Hirschohn, P., Dos Santos, A., Du Toit, J., Masenge, A., Van Aardt, I., & Wagner, C. (2014). *Research Methodology: Business and Management Contexts*. Cape Town: Oxford.

Burns, A. C., & Bush, R. F. (2014). *Marketing Research* (7th ed). New Jersey: Pearson.

Chatterton, T. (2011). *An Introduction to thinking about 'energy behaviour': A multi-model approach*. Retrieved from https://uwe-repository.worktribe.com/output/957138.

Chekima, B., Wafa, S.A.W.S.K., Igau, O.A., Chekima, S., & Sondoh, S.L. (2016). Examining green consumerism motivational drivers: Do premium price and demographics matter to green purchasing? *Journal of Cleaner Production*, 112, 3436–3450.

Chen, B., & Lee, J. (2020). Household waste separation intention and the importance of public policy. *International Trade, Politics and Development*, 4(1), 61-79.

Chen, K., & Deng, T. (2016). Research on the green purchase intentions from the perspective of product knowledge. *Sustainability*, 8, 943.

Chen, Y.S., & Chang, C.H. (2012). Enhance green purchase intentions: the role of perceived value, green perceived risk, and green trust. *Management Decisions*, 50(3), 502-520.

CIA. (2021). *The World Factbook*. Retrieved from https://www.cia.gov/the-world-factbook/countries/cyprus/#introduction.

Cohen, J. 1988. *Statistical power analysis for the behavioral sciences*. 2nd Edition. Hillsdale: New Jersey.

Coldcrest, D., & Herbst, F. (2004). *Business Research*. Cape Town: Juta.

Collis, J., & Hussey, R. (2014). *Business Research: A practical guide for undergraduate and postgraduate students* (4th ed.). New York: Palgrave Macmillan.

Conner, M., & McMillan, B. (1999). Interaction Effects in the Theory of Planned Behaviour: studying cannabis use. *British Journal of Social Psychology*, 38(2), 195-222.

Connett, P. (2007). *Zero Waste: A Key Move towards a Sustainable Society*. Retrieved from https://www.researchgate.net/publication/228871831_Zero_Waste_A_Key_Move_towards_a_Sustainable_Society.

Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). California: Sage Publications Inc.

D'Souza, C., Taghian, M., Lamb, P., & Peretiatkos, R. (2006). Green products and corporate strategy: An empirical investigation. *Society and Business Review*, 1(2), 144-157.

Daniel, J. (2011). *Sampling Essentials: Practical Guidelines for Making Sampling Choices*. California: Sage Publications Inc.

Darnton, A. (2008). Reference Report: An overview of behaviour change models and their uses. *GSR Behavior Change Knowledge Review*.

Davis, G., & Morgan, A. (2008). Using the Theory of Planned Behaviour to determine recycling and waste minimisation behaviour: A case study of Bristol City, UK. *Recycling Behaviour*, 20(1), 105-117.

De Groot, J.I., & Steg, L. (2009). Morality and prosocial behavior: the role of awareness, responsibility, and norms in the norm activation model. *Journal of Social Psychology*, 149(4), 425-449.

Dijstra, T.K., & Henseller, J. (2015). Consistent partial least squares path modeling. *MIS Quarterly*, 39(2), 297-316.

Dixon-Hardy, D.W., & Curran, B.A. (2008). Types of packaging waste from secondary sources (supermarkets) – The situation in the UK. *Waste Management*, 29, 1198-1207.

Esposito, C. (2019). *How a circular economy can change your waste for good*. Retrieved from http://www.nationalwaste.com/blog/circular-economy-changes-your-waste/.

Ferronato, N., & Torretta., V. (2019). Waste Mismanagement in Developing Countries: A Review of Global Issues. *International Journal of Environmental Research and Public Health*, 16(6), 1060-1088.

Food and Agriculture Organization of the United Nations (FAO). (2011). *Global Food Losses and Food Waste*. Dusseldorf, Germany.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*,18(1), 39–50.

Foukaras, A., & Toma, L. (2014). Buying and Wasting Sustainably. Determinants of Green Behavior in Cyprus and Sweden. *Procedia Economics and Finance*, 14, 220-229.

Gagnon, M.P., Godin, G., Gagné, C., Fortin, J.P., Lamothe, L., Reinharz, D., & Cloutier, A. (2003). An adaptation of the theory of interpersonal behaviour to the study of telemedicine adoption by physicians. *International Journal or Medical Informatics*, 71, 103-115.

Garvin, M. (1995). *Infectious Waste Management: A Practical Guide*. Florida: CRC Press.

Gatersleben, B., Murtagh, N., & Abrahamse, W. (2014). Values, identity and pro-environmental behaviour. *Contemporary Social Science*, 9(4), 374-392.

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference* (4th ed.). Michigan: Allyn & Bacon.

Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production*, 114(7), 11-32.

Ginige, T., Sparks, N., & Formosa, S. (2010). 'Waste not want not'- Sustainable waste management in Malta. *Law, Environment and Development Journal*, 6(3), 354-368.

Gold, A.H., Malhorta, A., & Segars, A.H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems*, 18(1), 185-214.

Good, K. (2015). *What in the world is a zero waste grocery store and why does the U.S. need one (or many)?* Retrieved from https://www.onegreenplanet.org/environment/america-needs-a-zero-waste-grocery-store/.

Graham-Rowe, E., Jessop, D.C., & Sparks, P. (2015). Predicting household food waste reduction using an extended theory of planned behaviour. *Resources, Conservation and Recycling*, 101, 194-202.

Grant, A. (2020, January 03). *What is Data Analysis and Why is it Important?* Retrieved from https://www.makeuseof.com/tag/what-is-data-analysis/.

Gravetter, F., & Forzano, L.B. (2012*). Research methods for the behavioral sciences* (4th ed.). Ohio: Cengage Learning.

Greener, S. (2008). *Business Research Methods*. London: Ventus Publishing.

Guarany, J. (2018). *The sustainable market: How zero waste shops work*. Retrieved from https://believe.earth/en/the-sustainable-market-how-zero-waste-shops-work/.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Hair, J., Hult, G.T.M., Ringle, C., & Sarstedt, M. (2014*). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Los Angeles: SAGE Publications.

Hamid, S.B., Skinder, B.M., & Bhat, M.A. (2020). Zero Waste. *Practice, Progress, and Proficiency in Sustainability*,134-155.

Hashim, A.H., Xi, C.H., & Sien, C.W. (2018). Young Malaysian consumers' perception towards zero wastes. *Malaysian Journal of Consumer and Family Economics*, 21, 65-77.

Henseller, J., Ringe, C.M., & Sinkovics, R.R (2009). The use of partial least squares path modeling in international marketing" Sinkovics, R.R. and Ghauri, P.N. (Ed.) *New Challenges to International Marketing* (*Advances in International Marketing, Vol. 20*), Emerald Group Publishing Limited, Bingley, pp. 277-319.

Henseller, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity invariance-based structural equation modeling. *Journal of the Academy of Marketing Science*,43(1),115–135.

Hoover, D., & Moreno, L. (2017). *Estimating Quantities and Types of Food Waste at the City Level*. National Resources Defense Council.

Horn, R. (2012). *Researching and writing dissertations a complete guide for business and management students* (2nd ed.). Croydon: Published institute of personnel and development.

Jansson, J., Marell, A., & Nordlund, A. (2010). Green consumer behavior: Determinants of curtailment and eco-innovation adoption. *Journal of Consumer Marketing*, 27(4), 358-370.

Jennings, G. (2010). *Tourism research* (2nd ed.). China: Wiley.

Joubish, M.F., Khurram, A.M., Ahmed, A., Fatima, T.S., & Haider, K. (2011). Paradigms and characteristics of good qualitative research. *World Applied Sciences Journal*, 12(11), 2082-2087.

Kalafatis, S.P., Pollard, M., East, R., Tsogas, M.H., & Pollard, M. (1991). Green marketing and Ajzen's theory of planned behaviour: A cross-market examination. *Journal of Consumer Marketing*, 16(5), 441-460.

Karim Ghani, W.A.W.A., Rusli, I.F., Biak, D.R.A., & Idris, A. (2013). An application of the theory of planned behaviour to study the influencing factors or participation in source separation of food waste. *Waste Management*, 33, 1276-1281.

Kenton, W. (2018). Descriptive Statistics. Retrieved from https://www.investopedia.com/terms/d/descriptive_statistics.asp.

Khan, F., Ahmed, W., & Najmi, A. (2019). Understanding consumers' behavior intentions towards dealing with the plastic waste: perspective of a developing country. *Resources, Conservation and Recycling*, 142, 49-58.

Khan, F., Ahmed, W., Najmi, A., & Younus, M. (2019). Managing plastic waste disposal by assessing consumers' recycling behavior: the case of a densely populated developing country. *Environmental Science and Pollution Research*, 26, 33054-33066.

Kothari, C.R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Delhi: New Age International Publishers.

Kumar, R. (2011). *Research methodology: A step-by-step guide for beginners* (3rd ed.). California: Sage Publications Inc.

Latif, S., Omar, M., Bidin, Y., & Awang, Z. (2012). Environmental Problems and Quality of Life: Situational Factor as a Predictor of Recycling Behaviour. *Procedia - Social and Behavioral Sciences*, 35, 682-688.

Lehmann, S. (2010). Resource Recovery and Materials Flow in the City: Zero Waste and Sustainable Consumption as Paradigms in Urban Development. *Sustainable Development & Policy*, 11(10), 28-38.

Levitis, D.L., & Freund, G. (2009). Behavioural biologists do not agree on what constitutes behavior. *Animal Behaviour*, 78, 103-110.

Liao, C., Zhao, D., Zhang, S., & Chen, L. (2018). Determinants and the moderating effects of perceived policy effectiveness on residents' separation intention for rural household solid waste. *International Journal of Environmental Research and Public Health*, 15(4), 726-743.

Liyanage, K., Waidyasekara, K., & Mallawaarachchi, H. (2019). Adopting the Zero Waste Concept for Eliminating C&D Waste in the Construction Industry. *MATEC Web of Conferences*, 266, 02008.

Marangon, F., Tempesta, T., Troiano, S., & Vecchiato, D. (2014). Food waste, consumer and behavior: A study in the North-Eastern part of Italy. *Italian Review of Agricultural Economics*, 69(2), 201-209.

Marangon, F., Tempesta, T., Troiano, S., & Vecchiato, D. (2015). Food Waste, Consumer Attitudes and Behavior. A Study in the North Eastern Part of Italy. *Rivista di Economia Agraria, Anno LXIX*, 2-3, 201-209.

McLeod, S. (2019). *What's the difference between qualitative and quantitative research?* Retrieved from https://www.simplypsychology.org/qualitative-quantitative.html.

Mishra, P., Singh, U., Pandey, C.M., Mishra, P., & Pandey, G. (2019). Application of students' t-test, analysis of variance, and covariance. *Annals of Cardiac anesthesia*, 22(4), 407-441.

Mrug, S. (2010). *Encyclopedia of Research Design* (1st ed). London: Sage Publications Inc.

Mustakallio, M., Autio, E., & Zahra, S.A. (2002). Relational and Contractual governance in family firms: Effects on strategic decision making. *Family Business Review*, 15(3), 205-222.

Nahman, A., & De Lange, W. (2013). Costs of food waste along the value chain: Evidence from South Africa. *Waste Management*, 33, 2493-2500.

Nicolaides, A. (2017, November 21). *Cyprus generated 547 tonnes of solid waste in 2017*. Retrieved 25 January 2021, from https://in-cyprus.philenews.com/cyprus-generated-547-tonnes-of-solid-waste-in-2017/.

Nizar, M., Munir, E., Irvan, I., & Amir, F. (2018). *Examining the Economic Benefits of Urban Waste Recycle Based on Zero Waste Concepts*. 1st Aceh Global Conference. Aceh, Banda, Indonessia.

Oelofse, S., & Godfrey, L. (2008). Defining waste in South Africa: Moving beyond the era of "waste". *South African Journal of Science,* 104, 242-246.

Ostrom, T. M., & Upshaw, H. S. (1968). Psychological perspective and attitude change. In A. G. Greenwald, T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of attitudes.* New York: Academic Press.

Pallant, J. (2011). *SPSS Survival Manual: A step by step guide to data analysis using SPSS* (4th ed.). Crows Nest, Australia: Allen & Unwin.

Parameshwari, S. 2017. Impact of food waste and its effects on environment. *International Journal of Food Science and Nutrition*, 2(4), 184-187.

Parfitt, J., Barthel, M., & McNaughton, S. (2010). Food waste within food supply chains: Quantification and potential for change to 2050. *Philosophical Transactions of the Royal Society B: Biological Science,* 365(10), 3065-3081.

Phillips, P.S., Tudor, T., Bird, H., & Bates, M. (2011). A Critical Review of a Key Waste Strategy Initiative in England: Zero Waste Places Projects 2008-2009. *Resources, Conservation and Recycling*, 55, 335-343.

Pichtel, J. (2005). *Waste Management Practices: Municipal, Hazardous, and Industrial*. Florida: CRC Press.

Plumb, A., Downing, P., & Parry, A. (2013, March). *Consumer Attitudes to Food Waste and Food Packaging*. Retrieved 25 January 2021, from http://www.wrap.org.uk/sites/files/wrap/Report%20-%20Consumer%20attitudes%20to%20food%20waste%20and%20packaging_0.pdf.

Prakash, G. & Pathak, P. (2017). Intention to buy eco-friendly packaged products among young consumers of India: a study on developing nation. *Journal of Cleaner Production*, 141, 385-393.

Pujol-Mazzini, A. (2017). *"Zero waste" stores put consumers on frontline in fight against packaging.* Retrieved from https://www.reuters.com/article/us-global-waste-shops/zero-waste-stores-put-consumers-on-frontline-infight-against-packaging-idUSKCN1BF041.

Qasim, H., Yan, L., Guo, R., & Saeed, A. (2019). The defining role of environmental self-identity among consumption values and behavioral intention to consume organic food. *International Journal of Environmental Research and Public Health*, 16(7), 1106-1128.

Qasim, H., Yan, L., Guo, R., Saeed, A., & Ashraf, B.N. (2018). The defining role of environmental self-identity among consumption values and behavioral

intention to consume organic food. *International Journal of Environmental Research and Public Health*, 16(7), 1106.

Ringle, C. M., Wende, S., & Becker, J.M. 2015. *SmartPLS 3*. Boenningstedt: SmartPLS GmbH. Retrievedfromhttp://www.smartpls.com

Russell, S.V., Young, C.W., Unsworth, K.L., & Robinson, C. (2017). Bringing habits and emotions into food waste behaviour. *Resources, Conservation & Recycling*, 125, 107-114.

Saleki, R., Quoqab, F., & Mohammad, J. (2019). What drives Malaysian consumers' organic food purchase intention? The role of moral norm, self-identity, environmental concern and price consciousness. *Journal of Agribusiness in Developing and Emerging Economies*, 9(5), 584-603.

Salonen, A.O., & Helne, T. (2012). Vegetarian Diets: A Way Towards a Sustainable Society. *Journal of Sustainable Development*, 5(6), 10-24.

Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research Methods for Business Students* (7th ed.). Edinburgh: Pearson Education Limited.

Senaviratna, N.A.M.R., & Cooray, T.M.J.A. (2019). Diagnosing Multicollinearity of Logistic Regression Model. *Asian Journal of Probability and Statistics*, 5(2), 1-9.

Shaida, M.N., & Singla, S. (2019). Global biomedical waste management issues and practices. *International Journal of Innovative Technology and Exploring Engineering*, 8(9S), 1053-1059.

Shrestha, N. (2020). Detecting Multicollinearity in Regression Analysis. *American Journal of Applied Mathematics and Statistics*, 8(2), 39-42.

Singh, S. (2018, July 26). *Sampling Techniques*. Retrieved from https://towardsdatascience.com/sampling-techniques-a4e34111d808.

Singpurwalla, D. 2013. *A handbook of statistics. An overview of statistical methods*. Retrieved from http://www2.aku.edu.tr/~icaga/kitaplar/a-handbook-of-statistics. pdf.

Song, Q., Li, J., & Zeng, X. (2015). Minimizing the increasing solid waste through zero waste strategy. *Journal of Cleaner Production*, 104, 199-210.

Stage, F.K., Carter, H.C., & Nora, A. (2010). Path Analysis: An introduction and Analysis of a Decade of Research. *The Journal of Educational Research*, 98(1), 5-13.

Statistics Explained (2020). *Packaging Waste Statistics*. Retrieved from https://ec.europa.eu/eurostat/statisticsexplained/.

Struwig, F.W., & Stead, G.B. (2013). *Research: planning, designing and reporting* (2nd ed.). Cape Town: Pearson.

Strydom, W.F. (2018). Applying the Theory of Planned Behavior to Recycling Behavior in South Africa. *Recycling*, 3(43), 1-20.

Sung, K., Cooper, T., & Keetley, S. (2019). Factors Influencing Upcyling for UK Makers. *Sustainability*, 11(3), 1-26.

Surbhi, S. (2018, November 19). *Difference Between Qualitative and Quantitative Research.* Retrieved from https://keydifferences.com/difference-between-qualitative-and-quantitative-research.html.

Szyjka, S. (2012). Understanding Research Paradigm: Trends in science educational research. *Problems of Education in the 21st Century*, 43(12), 110-118.

Taherdoost, H. (2016). Sampling Methods in Research Methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management* (IJARM), 5(2), 18-27.

Taylor, C. (2018, July 17). *Simple Random Samples from a Table of Random Digits*. Retrieved from https://www.thoughtco.com/simple-random-samples-table-of-random-digits-3126350.

Tewksbury, R. (2009). Qualitative versus quantitative methods: understanding why qualitative methods are superior for criminology and criminal justice. *Journal of Theoretical and Philosophical Criminology*, 1(1), 35-58.

The Energy and Resources Institute (2014). *Waste to Resources: A Waste Management Handbook*. New Delhi: TERI Press.

The World Bank. (2018, September 20). *Global Waste to Grow by 70 Percent by 2050 Unless Urgent Action is Taken: World Bank Report*. Retrieved 25 January 2021, from https://www.worldbank.org/en/news/press-release/2018/09/20/global-waste-to-grow-by-70-percent-by-2050-unless-urgent-action-is-taken-world-bank-report.

Tonglet, M., Phillips, P.S., & Read, A.D. (2004). Using the theory of planned behaviour to investigate the determinants of recycling behaviour: A case study from Brixworth, UK. *Resources, Conservation and Recycling*, 41(3), 191-214.

United Nations Environment Programme (UNEP). (2018). *Single-use Plastics: A roadmap for sustainability*. Nairobi, Kenya.

Vats, M.C., & Singh, S.K. (2014). E-Waste characteristics and its disposal. *International Journal of Ecological Science and Environmental Engineering*, 1(2), 49-61.

Veleva, V., Bodkin, G., & Todorova, S. (2017). The need for better measurement and employee engagement to advance a circular economy: Lessons from Biogen's zero waste journey. *Journal of Cleaner Production*, 154, 517-529.

Verplanken, B., & Holland, R.W. (2002). Motivated decision making: effect of activation and self-centrality of values on choices and behavior. *Journal of Personal Social Psychology*, 82(3), 434.

Wan, C., Shen, G.Q., & Yu, A. (2014). The role of perceived effectiveness of policy measures in predicting recycling behavior in Hong Kong. *Resources, Conservation and Recycling*, 83, 141-153.

Wang, S., Fan, J., Zhao, D., Yang, S., & Fu, Y. (2016). Predicting consumers' intention to adopt hybrid electric vehicles: using an extended version of the theory of planned behavior model. *Transportation*, 43, 123–143.

Welman, C., Kruger, F., & Mitchell, B. (2005). *Research Methodology* (3rd ed). Cape Town: Oxford University Press.

Whitmarsh, L., & O'Neil, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of Environmental Psychology*, 30, 305-314.

Wiid, J., & Diggines, C. (2009). *Marketing Research*. Cape Town: Juta.

Wilkinson, D., & Birmingham, P. (2003). *Using Research Instruments: A guide for researchers* (1st ed.). London: Routledge Falmer.

Woon, I.M., & Pee, L.G. (2004). Behavioural factors affecting internet abuse in the workplace – An empirical investigation. *Proceedings of the Third Annual Workshop on HCI Research in MIS, Washington, D.C*.

WWF. (2017). *Food Loss and Waste: Facts and Futures*. Retrieved from www.wwf.org.za/food-loss-and-waste-facts-and-futures.

WWF. (2019). *Solving Plastic Pollution Through Accountability*. Retrieved from http://d2ouvy59p0dg6k.cloudfront.net/downloads/solving_plastic_pollution_through_accountability_eng_singles.pdf.

Xu, L., Ling, M., Lu, Y., & Shen, M. (2017). Understanding household waste separation Behaviour: Testing the roles or moral, past experiences and perceived policy effectiveness withing the theory of planned behaviour. *Sustainability*, 9(4), 625-652.

Yaman, C. (2020). Application of sterilization process for inactivation of Bacillus Stearothermophilus in biomedical waste and associated greenhouse gas emissions. *Journal of Applied Science*, 10, 5056.

Yazdanpanah, M., & Forouzani, M. (2015). Application of the Theory of Planned Behaviour to predict Iranian students' intention to purchase organic food. *Journal of Cleaner Production*, 107, 342-352.

Yilmaz, K. (2013). Comparison of Quantitative and Qualitative Research Traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education*, 48(2), 311-325.

Zaman, A.U. (2014). Identification of key assessment indicators of the zero waste management systems. *Ecological Indicators*, 36(14), 682-693.

Zaman, A.U., & Lehmann, S. (2013). The zero waste index: a performance measurement tool for waste management systems in a 'zero waste city'. *Journal of Cleaner Production*, 50, 123-132.

Zero Waste International Alliance. (2018). *Zero waste hierarchy of highest and best use 7.0.* Retrieved from http://zwia.org/zwh/ #1533001727654-06e7e2c8-d52a.

Zhaung, W., Luo, X., & Riaz, M.U. (2021). On the factors influencing green purchase intention: A meta-analysis approach. *Frontiers in Psychology*, 12.

Zikmund, W.G., Babin, B.J., Carr J.C., & Griffen, M. (2009). *Business Research Methods* (7th ed.). Kentucky: Quebecor World Versailles.

Zikmund, W.G., Babin, B.J., Carr, J.C., & Griffin, M. (2013). *Business Research Methods* (9th ed.). United States of America: Cengage Learning.

Zorpas, A.A., Voukkali, I., & Loizia, P. (2017). A prevention strategy plan concerning the waste framework directive in Cyprus. *Fresenius Environmental Bulleting*, 26(2), 1310-1317.

APPENDIX

Questionnaire

This questionnaire is designed to measure the behavior of consumers with regards to zero-waste shopping in North Cyprus. Therefore, your opinion really counts because the results will be used to assist the marketing sector and shops particularly in TRNC with regards to encouraging zero-waste shopping among its consumers. You are expected to fill out the answers accurately. This record is kept confidential as much as possible; you are encouraged to be free in expressing yourself. THANK YOU.

PART 1– SCALED QUESTIONS

Kindly tick in the box where answer is applicable where
Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4 and Strongly Agree=5

Attitude	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Zero-waste shopping:	☹		😐		☺
is a good idea.	1	2	3	4	5
beneficial	1	2	3	4	5
important	1	2	3	4	5
favourable	1	2	3	4	5
hygienic	1	2	3	4	5
Subjective Norms	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	☹		😐		☺
Most people important to me think I should engage in zero-waste shopping	1	2	3	4	5
Most people who are important to me would approve of my zero-waste shopping behavior.	1	2	3	4	5
My neighbours expect me to carry out zero-waste shopping practices.	1	2	3	4	5
My family thinks that practicing zero-waste shopping is a good thing to do.	1	2	3	4	5

Most of my friends think that practicing zero-waste shopping is a good thing to do.	1	2	3	4	5
Perceived Behavioral Control	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	☹		😐		☺
I know how to practice zero-waste shopping.	1	2	3	4	5
Carrying out zero-waste shopping is convenient.	1	2	3	4	5
I have plenty of opportunities to practice zero-waste shopping.	1	2	3	4	5
It is mostly up to me whether or not to perform zero-waste shopping.	1	2	3	4	5
Moral Norms	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	☹		😐		☺
I feel I should not waste anything if it is reusable for shopping.	1	2	3	4	5
I feel an obligation to perform zero-waste shopping practices.	1	2	3	4	5
Not carrying out zero-waste shopping practices goes against my principles.	1	2	3	4	5
I would feel guilty if I did not carry out zero-waste shopping practices.	1	2	3	4	5
Self-Identity	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	☹		😐		☺
I think of myself as a practitioner of zero-waste shopping.	1	2	3	4	5
Undertaking zero-waste shopping practices is an important part of who I am.	1	2	3	4	5

I make significant changes in my lifestyle for zero-waste shopping.	1	2	3	4	5
I am the type of person who acts in a zero-waste way.	1	2	3	4	5
Past Experience	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have carried out zero-waste shopping practices in the 4 weeks.	☹		😐		☺
I have been performing zero-waste shopping practices in the past 4 weeks.	1	2	3	4	5
I have made zero-waste shopping practices a behavior.	1	2	3	4	5
Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	☹		😐		☺
I intend to avoid waste in the near future.	1	2	3	4	5
I am willing to participate in the zero-waste shopping measures in the near future.	1	2	3	4	5
I plan to carry out zero-waste shopping practices if rules are placed for such in the country.	1	2	3	4	5
I will practice zero-waste shopping measures every time I have waste.	1	2	3	4	5
Zero-waste Shopping Behavior	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	☹		😐		☺
I frequently reuse shopping bags.	1	2	3	4	5
I purchase environmentally friendly products.	1	2	3	4	5
I make use of recycling products to encourage zero-waste.	1	2	3	4	5

I make sure I search second-hand items.	1	2	3	4	5
I shop at retail facilities that promote innovative techniques for zero-waste.	1	2	3	4	5

PART 2

DEMOGRAPHIC INFORMATION

Please indicate your choice by means of an (X).

1. Citizenship	
Turkish Cypriot	1
Foreign citizen	2

2. Gender			
Female	1	Male	2

3. Age group (in years)			
18-25	1	46-55	4
26-35	2	56-65	5
36-45	3	66+	6

5. Occupation status			
Full-time employed	1	Retired	4
Part-time employed	2	Student	5
Self-employed	3	Unemployed but not student	6

6. Education (What is the level of school you have completed?)			
Secondary School	1	University level	3
High school diploma	2	Postgraduate level	4

7. Frequency of Shopping			
Once a month	1	Once a week	4
Twice a month	2	Every second day	5
Three times a month	3	Everyday	6

8. The three R's of Waste hierarchy

I engage in the following activities or practices:	
Reduce the amount of waste that is produced	1
Reuse of products through finding new use for it or donating it	2
Recycling of materials from normal waste (e.g glass)	3
None of the above	4

THANK YOU FOR SPARING YOUR TIME