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# The relation between consumer environmental attitude and the intention to buy from proximity-short food supply chains in Lebanon

Razan Aoudi

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Normandie Université



## THÈSE

Pour obtenir le diplôme de doctorat

Spécialité SCIENCES DE GESTION

Préparée au sein de l'Université Le Havre Normandie

### The Relation Between Consumer Environmental Attitude and the Intention to Buy from Proximity-Short Food Supply Chains in Lebanon

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**PhD in Business Management**

**The Relation Between Consumer Environmental Attitude  
and the Intention to Buy from Proximity-Short Food Supply  
Chains in Lebanon**

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**2023**

A thesis submitted in fulfilment of the requirements of the University le Havre, Normandie for  
the degree of Doctor of Philosophy

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## **ABSTRACT**

Short Food Supply Chains (SFSC) can be thought of as "alternatives" to traditional, complicated food chains, which frequently rule modern agri-food systems. They reimagine producer-consumer relationships through socially and physically "closer," more transparent supply chains built on provenance-related quality cues, whereby goods acquire information about the manufacturing environments inherent inside them. It has been proposed that SFSC can provide livelihoods for small-scale, independent food producers who would otherwise be excluded from food markets, resulting in major socioeconomic advantages for rural development.

The industrialized agri-food supply chain has been very successful over the past few decades, but it has come under growing fire for its unsustainable problems. One of the sustainable alternative food networks is the short food supply chain (SFSC). SFSCs and sustainability have been related in certain studies, but there hasn't been much study on the subject in developing countries. And since the satisfaction of consumers is considered the main element behind the success of any supply chain, this thesis studied the relation between consumer environmental attitude the intention to buy from proximity in the context of Lebanon.

The literature review covered the various studies done on the green supply chain in general and short food supply chain in particular. Proximity as well was studied and consumer environmental attitude, awareness, values, beliefs and norms, knowledge & environmental sensitivity of consumers and the effect of trust, price and product quality attributes were examined.

With the research paradigm of positivism, the quantitative approach was applied in this study. A questionnaire was distributed upon 252 Lebanese consumers to study the relation mentioned above and the results show a positive impact of environmental awareness, trust and product quality attributes with the intention to buy from proximity.

This study adds to the body of research on SFSCs by concentrating on the environmental aspects of sustainability emphasizing on the link between consumers environmental attitude and their intention to buy from proximity in Lebanon.

The study provides practical recommendations for policymakers to monitor and promote farmers' and consumers' engagement in SFSCs, as well as a platform for future research directions in the context of SFSCs.



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## **CHAPTER ONE: INTRODUCTION & RESEARCH CONTEXT**

Food is a necessary component of human life. For people to exist and thrive, it will always need to be produced and eaten. This is an exceedingly straightforward yet extremely important concept since neither food production nor its appearance on a plate are accidental. Instead, many environmental, economic, political, social, and cultural systems and structures are intimately tied to agri-food chains. Food is a fundamental component of social life across the world, essential to human health and wellbeing, and a significant component of both personal and societal identity.

Moreover, food is a source of livelihood for individuals all over the world who manufacture, package, obtain, distribute, store, and retail the vast array of diverse items that can be found there. It becomes clear that the methods in which food is transported from "farm to fork" have far larger socio-economic, political, and ecological ramifications than one may initially realize or predict after researching agri-food chains and thinking about them holistically. Due to the fact that food will always be required, it is essential to comprehend these numerous ramifications and make sure they do not harm people or the environment.

"Volatility, uncertainty, complexity, and ambiguity," or "VUCA," is a terminology that is becoming more prevalent in our society, including agriculture. The agriculture industry continues to change, having evolved from a time when the main objective was to produce as much as possible, but in the meantime, it is evolving into a more complicated profession (Agovino, Casaccia, Ciommi, Ferrara, & Marchesano, 2019) What, though, would these adjustments mean for the food & agricultural industry?

The ways that businesses are run have altered because of globalization, strengthening national economies throughout the world. The use of technology to manage supply chains and operations effectively will continue to assist corporate development and economic progress. In order to boost the agility and flexibility of the supply chain, successful firms should link their operations with the corporate strategy. Despite various developments, COVID-19 has caused a severe decline in the global economy. Almost all forms of supply chain management, regardless of the business, have been impacted by COVID-19, and the agri-food industry is not exempt from this worldwide slowdown. A total lockdown was established across countries because of the abrupt COVID-19 viral epidemic, which made it difficult for farmers and agricultural producers to sell their goods due to a manpower shortage. According to the Food and Agriculture Organization (FAO, COVID-19 Pandemic—Impact on Food and Agriculture , 2020), the two main effects of COVID-19 on agriculture are supply and demand for food and agricultural goods. The countries food security and efforts to address poverty and hunger are directly impacted by the lack of access to food and agricultural goods.

Moreover, we have seen a significant disruption in the food supply chain in recent years, which is mostly attributable to a lack of labor, challenges with agricultural product shipping, and state-wide lockdowns that have caused food processing facilities to close and be shut down (Thulasiraman V., 2021). Due to this interruption in the food supply chain, "local food supply chains" have been given new consideration as a more self-sufficient and sustainable alternative (Rizou M., 2020).

The system of commercial operations that are used to prepare, transform, process, preserve, and package food products is known as the food industry (Malagie, Jensen, C., &



Smith, 2019). During the 20th century, this system underwent a fast modernization that was fueled by changes in consumer tastes, shifting consumer power, and rising urbanization. Large investments in the food sector, particularly in developing economies, have increased industrialization levels, resulting in longer supply chains and a standardized mass production system with a focus on processing, dependability, food safety, and low prices, as well as a small number of powerful actors at each stage of the value chain (Renting H. M., 2003), (Vorley, Lundy, & Macgregor, 2008) . For the various parties involved in the food supply chain, these changes present both challenges and opportunities (Vorley, Lundy, & Macgregor, 2008) . One significant issue is that the structure and logic of these supply chains lead to the industry's unsustainable growth, which prevents the opportunities from reaching the small-scale farmers at the bottom of the pyramid (Marsden, Murdoch, & Morgan, Sustainable agriculture, food supply chains and regional development: Editorial Introduction, 1999).

According to papers by (Cappelli, 2020), (Hobbs, 2020), (Jarzębowski, 2020) (Farias, 2020), and others, there is a need to increase global food security, shorten supply chains, and closely examine consumer behavior toward key food products. The COVID-19 pandemic necessitates legislative changes regarding food safety, technology advancements, and social aspects to increase supply chain resilience and responsiveness in the agri-food industry (Stanley, 2020).

Furthermore, both the management and research disciplines have recently seen an increase in understanding of sustainability challenges. Literature from fields like operations or supply chain management (SCM) has started to incorporate the idea of sustainability (Carter & Rogers, 2008).

The triple bottom line (TBL) is the most common operationalization of sustainability in the disciplines of operations and SCM (Elkington, 1998). Environmental, social, and economic factors are included in the TBL concept as indicators of company performance. The consumption of energy and other resources, as well as the environmental imprint that businesses leave behind as a result of their activities, are all part of environmental sustainability. When businesses assist the development of present and future generations' capacities, promote health, and encourage equitable and democratic treatment both inside and outside of their boundaries, social sustainability is achieved (McKenzie, 2004). Economic sustainability also refers to the possibility of cost savings and/or revenue rewards for businesses who use sustainable business practices.

Moreover, alternative agri-food chains are attracting more attention as local food demand rises. When studying supply chain management one cannot neglect the important driver behind this whole chain, the consumer. Any product manufactured is produced to satisfy the needs of the consumer. Even the quality of raw materials, the production process, the distribution methods are all taking the consumer concerns into consideration. Thus, the analysis of consumer motives, attitudes, and intention to buy local products is one of the study areas that is actively developing (Bazzani C., 2017). Every day, customers all around the world are changing their attitude to be healthier and more environmentally friendly, especially when it comes to their food preferences. Under the influence of consumers' increased and continuously growing interest in nutrition, health, and environmental protection (Gil, 2000).

Short food supply chains (SFSCs), which are thought of as an alternative distribution model and are based on three types of "proximity" happening between trade participants:

geographical (locality), organizational (minimizing the number of links within the chain), and social (interaction, trust, knowledge, and flow of knowledge regarding the product between a producer and a consumer) (Malak-Rawlikowska A., 2019). These local markets are organized within the framework of SFSCs. In a broad sense, cutting the length of the food supply chain is also considered a component of boosting food security and raising living standards (Béné, 2020).

The SFSC presents a chance to increase transparency and traceability for the involved parties while also promoting the economic and social sustainability of the agricultural sector and rural communities by forging closer ties between the various stakeholders and reducing the length and complexity of the supply chain (Renting H. M., 2003). Yet, research on these food supply chains has primarily taken place in industrialized economies where consumers have greater purchasing power. There hasn't been much study done in a developing environment.

This thesis will take Lebanon as a case study, as Lebanon is a developing country that has seen a series of crises during the previous ten years. Since 2011, 1.5 million people have fled the Syrian civil conflict over the border. The Lebanese lira began to steadily depreciate in 2019 as the Lebanon's banking industry collapsed. Following the COVID-19 epidemic, the economy stagnated, and on August 4, 2020, a horrific double explosion occurred at the port of Beirut. The explosion wrecked commercial buildings and the port's infrastructure, including enormous wheat silos, in addition to killing more than 200 people and wounding 7,000 more. According to the World Food Program, because of these several crises, 61% of Lebanese people reported difficulties obtaining food and other necessities by the end of 2021 compared to 41% at the end of 2020. Today, that number is probably increasing due to the

conflict in Ukraine (WFP, Food Security and Vulnerability Analysis of Lebanese Residents, 2022).

According to customs data, the overall number of imports into Lebanon in 2021 declined by 38 percent compared to 2019 and by 9 percent compared to 2020. In the same year, the overall volume of food imported fell by 14% from 2020 and 16% from 2019. Nevertheless, if cereals were excluded—which includes wheat, which continues to receive subsidies at the official exchange rate—food imports would have decreased by 19 percent in 2021 compared to 2020 and by 30 percent compared to 2019 (WFP, Food Security and Vulnerability Analysis of Lebanese Residents, 2022).

When mentioning the Lebanese food, the term nutritious diet arises. The "healthy" consumption pattern in this highly urbanized nation is clear evidence of the influence of Mediterranean culture. Due to the country's tiny size and residents' steadfast adherence to their traditional diet, there is a remarkably consistent pattern of food consumption across the whole nation. There are no variations between rural and urban food consumption trends, according to research studying the impact of urbanization on food consumption (Mouawad, 2004). Due to their strong cultural ties to cuisine, Lebanese people place a high value on their own country's goods (locally known as Baladi produce).

A broad variety of "traditionally homemade "foods, including preserves and pickles, cuisine from "the village," "natural and healthy "eggs, dairy products, and honey from intensive farming in rural regions, are referred to as "baladi." Due to the low level of food safety in the country and the Lebanese people's propensity for healthy eating, interest in organic food as a natural substitute is on the rise. During the 1990s, organic food has drawn the interest of consumers, businesses, and the government (Pugliese, 2013).

To understand more the Lebanese consumer's profile, a study done by (Tleis, Callieris, & Roma, 2017) concluded that despite limited local production, the local market in Lebanon is robust and keeps expanding. The variety in the qualities of the detected clusters demonstrates how knowledgeable and aware the Lebanese organic consumer is regarding the organic concept. Consumers in Lebanon range from older people who can afford organic products to younger people who are constrained by their social standing. In Lebanon, customers' willingness to pay more for organic food is influenced by their income level, level of income concern, level of trust in organic food, and level of acceptance of organic food costs.

Nevertheless, the sustainability of production of the Mediterranean-style plant-based diet, which is advised from a dietary and health viewpoint and has been demonstrated to have a moderate environmental footprint (Naja, Itani, Hamade, & Chamieh, 2019), was studied in Lebanon. While though Lebanon grows some of the foods found in a Mediterranean diet, it still depends significantly on imported commodities, which are generally regarded to be more affordable to buy than to grow. Yet, the country's capacity to import food has decreased as a result of the recent combination of shocks, notably the catastrophic financial crisis (Daher, 2019). In addition, the Russia-Ukraine conflict, from which Lebanon receives 70–90% of its wheat, has caused interruptions in the food supply chains. Thus, it's important for Lebanon to shift to short food supply chains.

Exploring alternatives to zero-sum game solutions, supported by the following three-tier strategy, has the potential to increase food and nutrition security in Lebanon. Reallocate resources within the current resource pie, increase the current resource pie, and (3) provide a setting that offers the required incentives to permit reallocation and growth of the resource

pie. First, we can reduce our reliance on foreign markets while saving money, energy, water, and emissions by strategically reallocating resources from producing crops that exceed full self-sufficiency to less resource-intensive and nutrient-rich crops with low self-sufficiency (beans, lentils, and chickpeas, for example). There is a trade-off between using resources to increase local food production and increasing export production. The benefit of greater self-sufficiency as a major determinant of increased food security is amplified by the unpredictability of future currency conversion rates. Second, increasing the present capacity of resources might be accomplished by enhancing operational effectiveness and management procedures while also looking for synergies across various industry sectors. Thirdly, it's crucial to provide a setting that offers farmers the incentives they need to cultivate new crops, convert to alternative energy and water sources, invest in new, more effective technology, and do so while taking into consideration their preferences and readiness to shift farming techniques to satisfy consumer needs (Daher B, 2022).

To conclude, the sustainability of an entire supply chain, as well as the finished product, is determined by the success of each chain partner. The buyer-supplier relationship is crucial in maintaining the supply chain's long-term stability. Short food chains (SFSCs) are becoming increasingly common in recent years (Aguilar, DelGrossi, & Thomé, 2018). They have the ability to aid local and regional growth, as well as contribute to customer food quality (Aguilar, DelGrossi, & Thomé, 2018) and job creation (Falguieres, et al., 2015). And since the consumers play a very crucial role in the supply chain, the thesis will study what drives consumers to buy from proximity. Moreover, Lebanon will be taken as a case study as little research has been done on developing countries and amid all the changes that are occurring in the country it will be interesting to study this country as a case.

## **1.1 Importance of the study**

In this century various environmental downfalls have been witnessed in different areas around the globe. The witnessed damage cannot be undone at a reasonable cost; it is almost irreversible. The aim of this research is to shed light on short food supply chains and its role in achieving sustainability especially environmental sustainability and study the consumers' drivers behind the intention to buy from proximity. The thesis will focus on consumers as they are the end user in the supply chain. It will measure the environmental attitude, awareness, values, beliefs and norms, knowledge & environmental sensitivity of consumers as well as the relationship with the producers and price of the products and study what from the mentioned drive their intention to buy from proximity if they do. Moreover, it will take Lebanon as a case study and amid all the crises that the country is facing SFSC may be one of the solutions to answer food security concerns and satisfy the changing consumer needs and tastes.

## **1.2 Research Objective**

The last two decades have seen a rising proliferation of Short Food Supply Chains (SFSCs), which are associated with sustainable production, as opposed to global markets that are dependent upon industrial agriculture (Morris & Buller, 2003) ; (Ilbery & Maye, 2005). This is due to consumer demand for more sustainable food products.

In terms of socio-economic equity, environmental protection, and local development, SFSCs have the potential to improve the sustainability of conventional food systems, according to (Mundler & Laughrea, 2016) who compiled the opinions of academics and experts from around the world. As a result, SFSCs provide customers a more trustworthy and sustainable alternative to highly specialized and resource-intensive modern supply chains (Forssell & Lankoski, 2014).

(Mundler & Laughrea, 2016) discovered that consumers have a wide range of reasons for looking for alternative food chains, including buying goods with higher quality standards (freshness, nutritional value) or produced in a more environmentally friendly way, pursuing a healthy diet, and establishing more direct interactions with the grower, in order to learn about the origin of food and also to support local agriculture and the economy.

In this context, the growing popularity of SFSCs appears to reflect recent changes in post-modern society and consumption patterns, as customers today look for food quality and traceability as well as ethical and environmental results in the products they purchase.

Based on the mentioned above, the research objective is to study what drives the consumer towards the intention to buy from proximity as these results will give a clearer direction to the Lebanese food and agriculture sector for a better implementation of SFSC and



thus benefitting from the positive impact SFSCs offer whether environmentally, socially, or economically.

### **1.3 Research Questions**

To achieve the research objective, the main research question is:

“Does consumer environmental attitude affect the intention to buy from proximity?”

Moreover, the sub research questions are:

1. How product quality attributes impact the intention to buy from SFSC?
2. How does price affect the intention to buy from proximity?
3. Does the relationship with the producers and trust affect the intention to buy from proximity?
4. Do demographics affect the consumer intention to buy from proximity?

### **1.4 The Conduct of the Study**

The best analysis method had to be chosen in order to answer the research questions mentioned above and thereby achieve the research purpose and objectives. As a result, it was necessary to study existing research philosophies and methods in order to choose a suitable research methodology.

### **1.5 Research Procedure**

The steps of conducting and implementing the research are as follows:

- First Phase: Identifying the main research problems, creating proper research objectives.
- Second Phase: Preparing the literature review that will research short food supply chains, consumer environmental attitude, relationship with producers and Lebanon as our case study.
- Third Phase: Research framework will be adopted.
- Fourth Phase: A questionnaire that allows us to test the targeted variables will be developed.
- Fifth Phase: Pilot study will be performed, and proper modifications will be made on the research design. The main purpose of the pilot study is to confirm the clarity of the designed questions in order to ensure that the questionnaire will aid in achieving the research objectives.
- Sixth Phase: In this phase the questionnaire will be distributed to customers in Lebanon.
- Seventh Phase: SPSS will be employed in order to perform the appropriate statistical analysis.
- Eighth Phase: In this final phase the conclusion and recommendations will be developed.

## **1.6 Research Philosophy**

A research philosophy is a set of beliefs on how data on a phenomenon should be collected, analyzed, and applied (Galliers, 1991). Since I favor, quantitative approaches, such as social surveys, standardized questionnaires, and government statistics because they are accurate and representative, and since I believe that "social realities" influence human behavior and that society shapes the individual, and I prefer to look for relationships, or 'correlations,' between two or more variables in positivist science which is the comparative approach, my research philosophy will be a positivism philosophy.

Furthermore, (Crowther & Lancaster, 2008) conclude that, in general, positivist experiments use a deductive approach. Positivists assume that existence is consistent and that it can be observed and represented critically (Levin, Daniel, Chapman, & Johnson, 1988), that is, without intervening with the phenomenon under inquiry. Thus, I will be separated from the sample as I believe that events should be isolated, and discoveries should be able to be replicated.

## **1.7 Research Approach**

In my thesis I will use the quantitative approach to answer analysis questions that need numerical data. Quantitative research, according to (Leedy & Ormrod, 2001), is unique in its surveying and exploration since it draws on current hypotheses. The assumption of an empiricist paradigm is maintained in the methods of quantitative analysis (Creswell, 2003). This thesis is self-contained and unaffected by my behavior. As a response, information is used to test reality scientifically. Quantitative analysis provides meaning to the data it gathers by revealing objectivity.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Green Supply Chain Management**

Companies are working more nowadays to focus their competitive advantage towards networking with other companies. Numerous companies have worked on improving their supply chain management (SCM) to decrease the cost and improve performance. (Ballou, 2004) discussed two views of logistics in an organization's direct supply chain-inbound logistics (raw material management) and outbound logistics (distribution of products). The first is related to products that are coming in the firm which are the inputs used to create the products and the second is about the distribution of outputs to customers. When discussing effective and efficient management we are talking about the synchronization and coordination between the elements of the supply chain to satisfy the customers' needs in the best cost-effective way. The upstream and downstream relations with suppliers, distributors and customers is the main concern of companies to create value for customers (Christopher, 2005). Supply chain management is concerned with the whole process of obtaining raw materials from suppliers then transforming them through labor and technology to final product that will be delivered to customers either directly or through distributors.

Green supply chain management (GSCM) embodies the new and crucial inter- & intra organizational approach of environmental practices. It's main objective is to integrate to environmental mentality in decision making starting from the research & development phase till the post disposal phase of the products which explains the "closing the loop" (Handfield, Sroufe, & Walton, 2005) (Simpson & Power, 2005).

Explanations about GSCM differ, some describe it as a simple environmental buying relationship between buyers and sellers, while others discuss it as a "closed loop" supply chain from the beginning to the disposal of the products from inter- intra perspective (Simpson & Power, 2005).

The factors of GSCM from the external perspective take into consideration the upstream and downstream elements. The upstream elements consist of environmental buying from suppliers (Min & Galle, 2001). Examples consists of the dealing with supplier who their work is based on environmental requirements, ISO 14001 specifications and environmental objectives. The downstream elements include the distributors of the products to customers (Murphy & Poist, 2000).

The Brundtland Report of the World Commission on Environment and Development (WCED, 1987) defines the environmental supply chain management sustainable development as "the development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Attaining sustainable supply chain does not come with a manual; studies show that it is highly dependent on the choice of strategic approach that manager and employers choose in addition to the environmental conditions.

Manufacturing companies must, before offering their products in the market, take into consideration the social, economic and environmental conditions that must be dealt with across the whole supply chain.

In order to better explain the sustainable supply chain concept Pagell and Wu identified five major aspects of the strategic sustainability orientation which are: first attaining social, environmental and economic goals, second, follow a sustainable plan with resources which moves in parallel with the environmental and social goals. Third, the sustainability concept must be present in all the company practices and organizational decisions. Fourth, sustainability values must be implemented based on modern standards in the business model. Last but not least, the sustainability concept must be attained at all levels of the organization not only in one part of the supply chain or in one department (Pagell & Wu, 2009).

Working with an environmental supply chain management does not only have an impact on the company's environmental performance but also on other aspects of the whole business performance such as: achieving a better public image, reducing the risk of operating with legal non-compliance, reaching a wider market which involves customers who are environmentally aware, enhance productivity in business operations in addition to efficiency, enhanced quality, decline in number of defaults, witnessed improvement in environmental management, products that are sustainable. Environmental factors, social norms and government regulations starting from the retailer and all the way to the customer, must be taken into consideration to have a

proper implementation of sustainability strategies. New sustainability issues in the business environment that the company is operating in in addition to those related directly to the company, must always be identified and understood by the supply chain managers so that the company preserves its competitive position in the market.

To understand new sustainable issues specific to international, global and fragmented supply chains and not strictly to highly efficient supply chain operations, networking skills must at all times be adjusted based on the sustainability demands so that a long term and sustainable customer focused supply chain is attained.

Through the use of market and competition theory, three main critical factors can be identified to properly determine the corporate strategy and business environment which are: General environment, demand and supply. Such factors change over time and in today's business are becoming more complex than ever. The general environment, demand, and supply all together aid in identifying the behavior of market players. The main concept of sustainable supply chain constitutes of the effect that the supply chain management can make to the environment, society, and economy (Chardine-Baumann & Botta-Genoulaz, 2014).

The demand for customized supply chains based on the different countries, products, and customers that the company deals with is increasing to gain a competitive advantage in the market. Such a choice requires a company to implement multiple solutions and various supply chain strategies. Multiple supply chains are mainly required when the customer-product mixes are far away from being homogeneous. External drivers are highly dependent on the business environment that the company is operating in which can in turn force the supply chain members to prefer sustainability.

## **2.2 Short Food Supply Chain**

A short supply chain is one with a small number of economic operators who are dedicated to collaboration, local economic growth, and strong regional and social links between manufacturers, processors, and customers.

SFSCs, according to (Renting H. M., 2003), are short in three dimensions; they “short-circuit” the traditional, lengthy supply chains in industrial food processing; they reduce the physical and informative gap between customer and producer; and they allow more local food production. As a consequence, an SFSC is usually devoted to the populations it represents’ long-term survival, collaboration, and economic growth (EIP-AGRI, 2015) (Todorovic, et al., 2018).

Sustainable strategic direction has been considered in financial, social and environmental aspects in past research (Baumgartner & Rauter, 2017). Specifically, sustainable development in food industry is significant on account of its effect on present day dietary life and the environment through complex supply chains. Baldwin et al. broke down the ecological effects of the food industry utilizing life cycle appraisal, which is a strategy to aggregate and assess environmental effects of a product over its whole life-cycle (for example from food supply, stockpiling, manufacturing, to service), and they confirmed the critical effects of each stage (Baldwin, Wilberforce, & Kapur, 2011).



In the food industry, the utilization of resources in the environmental should be performed based on sustainable, economic and social aspects. Agribusiness and food supply chains are changing from the product framework into a planned food framework. This prompts rivalry between different supply chains and networks, and not exclusively to rivalry between singular organizations (Lambert & Cooper, 2000). In any case, these patterns of progress expect examination to adjust old or grow new models of food business and food markets. Customers constantly increase their demand for food sanitation and its usefulness, product variety, packaging quality, and the quality of the product. The spread of new types of food distribution organizations lately, alluded to as short supply chains changing consumer tastes.

The EC IMPACT project (Renting, Marsden, & Banks, 2003) proposed three fundamental sorts of short food chains based on the quantity of intermediaries, actual distance, and organizational courses of action:

- Face-to-Face SFSCs – a shopper buys an item straightforwardly from the maker/processor on a vis-à-vis premise.
- Proximate SFSCs – broaden reach past direct collaboration and are basically conveying items which are delivered and retailed inside a particular area (or spot) of creation. Customers are made mindful of the ‘nearby’ nature of the item at retail level.
- Spatially expanded SFSCs – worth and significance loaded data about the spot of creation and makers is moved to customers who are outside the locale of creation itself and who may have no close to home insight of that area.

Several classifications or typologies were established with the aim of systematic exploration of SFSCs, taking into account the criterion for SFSCs. According to (Mundubat, 2012), SFSCs

can be divided into nine divisions, as seen in Figure 1, based on the degree of agreement followed by customers or manufacturers.

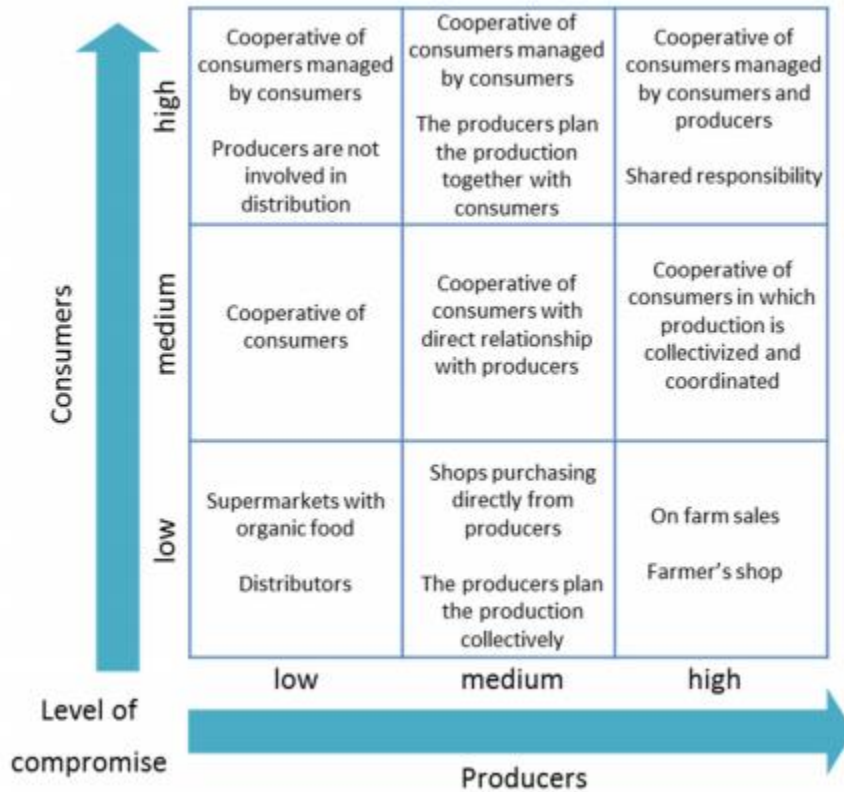


Figure 1: A typology of SFSCs based on the level of compromise adopted by consumers or producers. Source: Own evaluation based on (Mundubat, 2012)

Engaging in joint efforts and building short supply chains has many advantages (EIP-AGRI, 2015):

- Greater margins / reduced overheads: distributors' sometimes high prices should be divided equally between manufacturers and customers, allowing producers to make a better living and consumers to spend less and realize exactly what they are paying for.

- Expanded product selection: By keeping the added value of each territory, the product range may be diversified and/or expanded, allowing more suppliers to participate and more jobs to be generated.

The production process is constituted of 3 elements. The inputs, which are the resources, are transformed to output using technology and labor that is sold later to consumers (Figure 2).

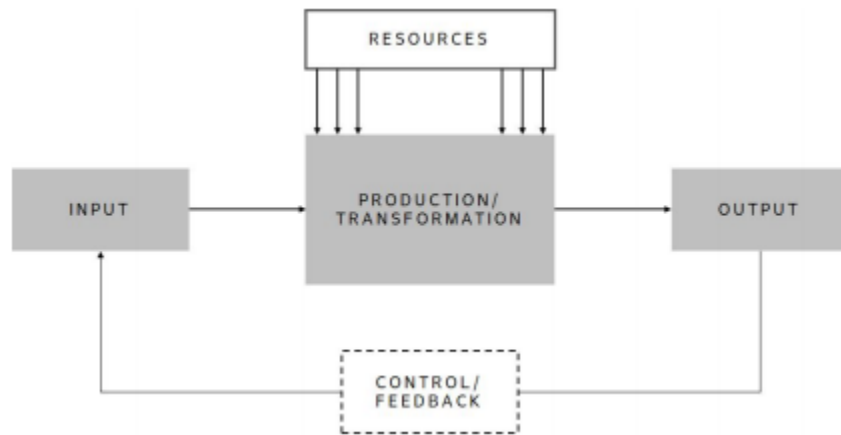


Figure 2 The general production process. Adapted from (Bjørnland, Persson, & Virum, 2003)

Typically, manufacturing systems are divided into Pull and Push systems, with the general distinction being made between making-to-order (Pull) and making-to-stock (Push) (Push). A more scientific distinction is that Pull systems are processing systems that reduce the amount of work-in-progress during the manufacturing process, while Push systems do not. This assumes that Push systems will constantly activate new manufacturing orders and let them wait in a database or stock until there is free space, while Pull systems will only launch a new production order after the previous one has completed, reducing the need for in-process inventory and waiting. Push systems, such as Materials Requirement Planning (MRP), are conventional mass manufacturing systems that date back to the mid-twentieth century. In recent

years, these types of structures have been criticized as inefficient, complex, and costly (Bjørnland, Persson, & Virum, 2003).

The principles of Lean and Agile development or processes are related to Pull and Push. Agile systems emphasize stability in the company's operations in order to improve customer experience and deal with market fluctuations. Instead, Lean focuses on eliminating waste in all areas of operations, especially in manufacturing, by reducing complexity and buffering and collaborating with continuous improvement. The Toyota Production System, also known as Just-in-Time (JIT) production, is the original Lean system. These programs, as opposed to the agile ones designed to deal with more complexity, are normally better suited to scenarios where demand is steady (Bjørnland, Persson, & Virum, 2003).

### **2.2.1 Characteristics and organization of Short Food Supply Chains**

In comparison to industrialized food systems, an SFSC comprises a restricted number of intermediaries spread across a wider geographical area. This means that in an SFSC, there are less phases between the supplier and the customer, making the network less complicated (see Figure 3).

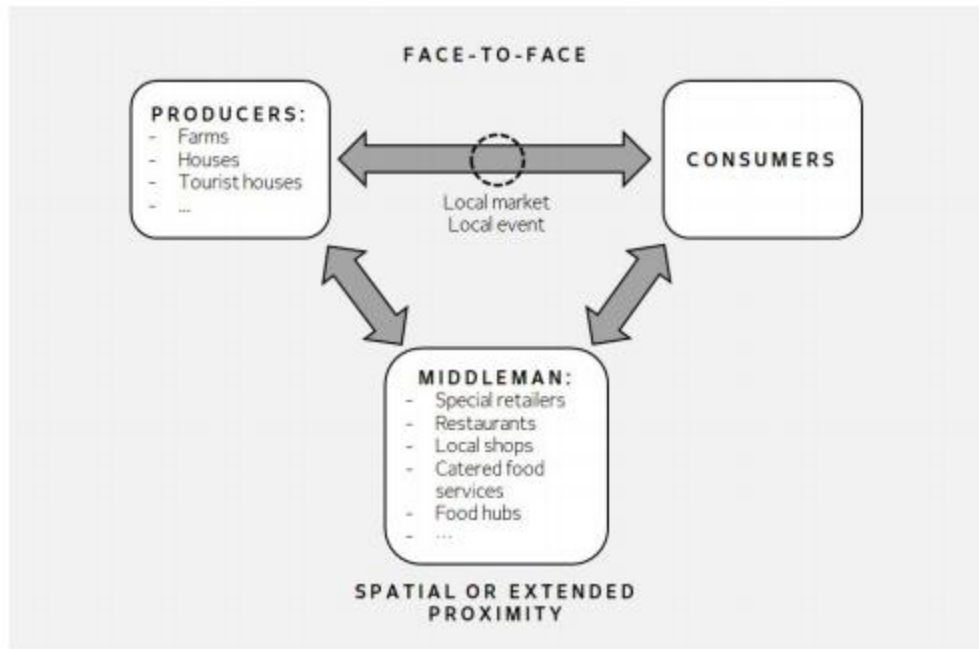


Figure 3: Organization of the Short Food Supply Chain. Adapted from (Todorovic, et al., 2018)

SFSCs are not just characterized by the distance in the chain, but also the quality attributes of the products. Renting et. Al. divide SFSCs into two categories based on the quality aspects of the products, namely if they are connected to a specific bioprocess, or to a certain location or production method. Often the farmers use a hybrid between these two characteristics (Renting, Marsden, & Banks, 2003). Traditional vs. neo-traditional SFSCs are categorized separately, with traditional referring to schemes that rely on artisanal and traditional farming values and practices, mostly family-run enterprises, and neo-traditional referring to a more dynamic network of producers, customers, and organizations with a focus on social creativity. Fresh fruits and vegetables are the most common types of products in SFSCs, according to a study of the EU's SFSCs, and organic processing is common, even though it is not always branded as such (Kneafsey, et al., 2013)

Local farmers markets, for example, are a popular means of organizing SFSCs by direct contact between producers and customers, where local farmers carry their fresh produce and sell it directly to the consumers. This kind of deal could also be achieved digitally through a website operated by the farmers (Renting, Marsden, & Banks, 2003); (Nakandala, 2019). There are no intermediate measures or actors between the manufacturers and the customers in any of these operational ways.

There are also SFSC companies that resemble or utilize the industrialized food industry, where farmers sell their produce by typical retail outlets such as supermarkets, wholesalers, or specialty shops. This form of arrangement is generally based on a certification mark to advertise the local produce (Renting, Marsden, & Banks, 2003). This demonstrates that SFSCs do not have to be local in terms of geographical scope, but may be called local or short depending on the farm's or farmer's production methods and reputation (EIP-AGRI, 2015), (Renting, Marsden, & Banks, 2003).

Via the use of third-party intermediaries, most SFSCs are structured in a form of middle ground between direct contact between supplier and customer and the complex network of the industrialized economy. The structure of these supply chains is often focused on multiple modes of cooperation (Renting, Marsden, & Banks, *Understanding alternative food networks: exploring the role of short food supply chains in rural development*, 2003). Collaborations may take the form of formalized farmer-to-consumer cooperatives or more ad hoc systems such as networks. It may also be more organized supply chains with an intermediary such as a processor, butcher, or specialty store, with the buyer being an organization rather than a person, such as schools or businesses (Renting, Marsden, & Banks, 2003).

In comparison to industrialized food markets, where consumers often pay three to four times the price paid to the manufacturer, SFSCs aim to provide more profit to manufacturers by eliminating the middleman while maintaining a reasonable purchase price for consumers (Todorovic, et al., 2018). One of the potential advantages of SFSCs is improved revenue for producers, as the absence of middlemen encourages the producer to earn a bigger share of the profits. According to theory, these goods can be marketed at a higher price than products sold by standard food supply chains (EIP-AGRI, 2015); (Kneafsey, et al., 2013). Items marketed by an SFSC are considered to have a higher relative value.

Quality is closely linked to ethical, societal, and environmental values, rather than simply the quality of the commodity itself, and this can be converted into a consumer's desire to pay a premium price for the product (Kneafsey, et al., 2013).

### **2.2.2 Sustainable Short Food Supply Chain**

The rise in popularity of SFSCs in recent years can be attributed to customer tastes for high-quality goods. Numerous research (Kriewald, Pradhan, Costa, García Cantú Ros, & Kropp, 2019), (Uribe, Winham, & Wharton, 2012) have supported these patterns, indicating that the increasing success of short supply chains can be due to a logistics paradigm focused on local and fresh goods. SFSCs can increase farm incomes, foster sustainable agricultural systems, and contribute to local economic growth, according to research.

It's worth noting that SFSCs are dominated by small and medium-sized businesses. They can, however, face a "competitive strategy...particularly for those small family farms that fail to

interface with traditional markets” (Berti & Mulligan, 2016). Because of the lack of economies of scale and higher manufacturing prices per unit of output, they are also less efficient in traditional chains. Small and medium-sized farms and processing companies can benefit from SFSCs as a solution to improve profitability. This is because certain customers who are able to pay a higher price link food supplied through short supply chains with good quality (Mancini & Arfini, 2018). Short food supply chains thus benefit farmers financially, but this is mainly attributed to higher market prices (Galli, et al., 2015). In response to declining market conditions, SFSCs are often established as joint economic interventions, “shortening” and reinforcing relations between local companies and mobilizing local capital. SFSCs will thus aid in the revitalization and expansion of rural economies (Conner, Colasanti, Ross, & Smalley, 2010).

In terms of social sustainability, there is clear evidence that people are more appreciative of short food supply chains. Their commitment to justice among food chain participants, defined as a lack of favoritism against either group, or the resilience of local communities is referred to as social sustainability. It is based on trust and personal relationships, with the encounter between consumers and suppliers incorporating unity and the sharing of common values. Consumers may learn more about how the food they purchase was made, the processes used, and the specific geographical characteristics, as well as create trust and confidence based on a strong (direct) relationship with the producer. Fairness in direct relationships between suppliers and customers may be easier to create with more human contact than in impersonal big supermarkets. It is easier for conscientious consumers to consider the true cost (and perhaps observe externalities) of food processing, making it easier to compensate a proven and trustworthy producer. In a measurable short chain, the position of middlemen in adding value can be more readily understood, and therefore their receiving of a reasonable return may be more possible



(Renting, Marsden, & Banks, 2003). SFSCs have the potential to help revitalize urban neighborhoods. A sense of pride, social solidarity, and belonging to a certain place and group is fostered by the meaning and significance of the commodity and its roots (Peters, 2012).

It is promising to note in the Intergovernmental Panel on Climate Change's Special Report on Climate Change and Land that use of locally grown food and efficient food processing/transportation results in reduced food losses, increased food security, and reduced greenhouse gas (GHG) emissions (IPCC, 2017). Other research suggests that the local production reduces GHG emissions (Michalský & Hooda, 2015), and that local food self-sufficiency is linked to climate change, diet, and urbanization (Kriewald, Pradhan, Costa, García Cantú Ros, & Kropp, 2019).

The topic of sustainability has been mainstreaming in supply chain management science over the past two decades, and it is now a major research focus. SFSCs, in particular, have gotten a lot of attention. Consumer desire for consistency and traceability, troubling health crises in food markets, rising farm value-added (margin distribution), fostering sustainable agricultural systems, diversifying supply, and contributing to local economic growth are all factors that influence sustainability. Table 1 shows the possible beneficial effect of SFSCs on the three dimensions of sustainable growth (Jarzebowski, Bourlakis, & Bezat-Jarzebowska, 2020) .

Economic Impact	Social Impact	Environmental Impact
<ul style="list-style-type: none"> <li>• Reduction of farmers' economic uncertainties.</li> <li>• Support the profitability of small and medium farms.</li> <li>• Increase the re-circulation of community income.</li> <li>• Creation of new jobs in rural areas (generating local employment).</li> <li>• Decrease of production costs and market price.</li> <li>• Improving synergies with other sectors.</li> <li>• Increase of food production quality.</li> <li>• Contribution to European food safety.</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of more direct relations between producers and consumers.</li> <li>• Enhance trust within the value chain.</li> <li>• Foster social inclusion.</li> <li>• Revitalization of local communities.</li> <li>• Contribution to rural development (particularly in marginal areas).</li> <li>• Awaken the sense of community.</li> <li>• Conducting community education.</li> <li>• Consumer empowerment.</li> <li>• Bigger recognition of producers.</li> <li>• Dissemination of training and coaching activities.</li> <li>• Promotion of healthy diet.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction of resource use (such as fossil fuel or packaging).</li> <li>• Reduction of food waste and saving food.</li> <li>• Promotion of less polluting production methods (e.g., organic farming).</li> <li>• Reduction of GHG emissions and carbon footprint.</li> <li>• Reduction of energy use.</li> <li>• Reduction of food miles.</li> </ul>

Table 1 Positive impact of SFSCs in the three dimensions of sustainable development (Jarzebowski, Bourlakis, & Bezat-Jarzebowska, 2020)

In conclusion, it can be argued that SFSCs can provide farmers with a greater share of the value added while both improving local growth and territorial stability, as well as reducing food miles and carbon footprint.

### 2.2.3 Proximity in Short Food Supply Chain

Researchers exploring actor relationships have been looking at how different sorts of proximity might be used to replace or enhance geographical proximity (Torre & Gilly, 2000) (Torre & Rallet, 2005). Apart from geographic proximity, (Boschma, 2005) differentiates cognitive proximity (actors have overlapping knowledge bases, which is required for communication and learning), social proximity (based on trust through friendship, similarity, or a

sense of belonging), organizational proximity (relations through institutional arrangements), and institutional proximity (relations through institutional arrangements) (actors share common norms, rules, values).

Moreover, the five categories that (Dubois, 2018) divides the proximity to are: Geographic proximity (i.e., the physical proximity between participating actors), social proximity (i.e., the development of interpersonal relationships between agriculturalists and consumers), organizational proximity (i.e., the practices farmers use to integrate resources in order to effectively coordinate the marketing of their products), and institutional proximity (i.e. actors sharing norms and values), finally, cognitive proximity refers to the convergence of farmers' and customers' particular "knowledge bases."

The following subdimensions can be investigated when looking at different forms of proximities (Edelmann, Fernanda, Quiñones-Ruiz, & Penker, 2019):

<b>Proximity Dimension</b>	<b>Subdimension</b>
Geographical proximity	Direct interaction
	Availability of transport infrastructure
Organizational proximity	Organizational agreements
	Mode of price setting/ negotiation
	Duration of trade relations
	Benefit sharing
	Risk sharing
Institutional proximity	Product quality norms/rules/ conventions
	Certifications
	Environmental practices
	Social practices (excl. pay)
Cognitive proximity	Knowledge bases of actors
	Knowledge exchange, learning
Social proximity	Trust
	Knowledge about production and each other
	Degree of personal acquaintance

*Table 2 Proximity Subdimensions (Edelmann, Fernanda, Quiñones-Ruiz, & Penker, 2019)*

According to (Kneafsey, et al., 2013), proximity plays a crucial role in creating a more sustainable, resilient, and equitable food system in the following ways:

1. Environmental sustainability: By limiting the distance that food travels, which in turn reduces carbon emissions from transportation, short food supply chains can lessen the environmental effect of food production and distribution. Additionally, local food systems frequently use more environmentally friendly farming methods like organic or agroecological farming, which can lessen the impact of food production on the environment.
2. Economic resilience: By minimizing reliance on international food markets and fostering more diverse local economies, short food supply chains can boost the resilience of local food systems. Short food supply chains can aid in job creation and boost local economies by sourcing food from neighboring farms and promoting regional farmers.
3. Social equality: By fostering more direct and open relationships between producers and consumers, short food supply chains can support social equity. This can promote the growth of more fair economic ties within the food chain and help to increase trust and understanding. Additionally, reducing the length of the food supply chain can improve access to a variety of fresh, wholesome, and culturally acceptable foods in marginalized regions, hence reducing concerns of inequality and food insecurity.

Overall, proximity is essential to local food systems and short food supply chains because it promotes a more just, resilient, and sustainable food system that benefits both farmers and consumers.

#### **2.2.4 Consumers and Short Food Supply Chain**

To address social, economic and environmental problems, short food supply chains (SFSCs), a concept invented by (Marsden, Food matters and the matter of food: towards a new food governance? , 2000), are being developed. Micro-scale corporate concepts are becoming increasingly popular throughout the world, and customers are becoming more interested in them (Migliorea & Schifania, 2015). Consumers can use SFSCs to determine the real value of a food item. This implies that products are integrated with information that allows customers to understand how and where food is produced, allowing consumers and producers to develop a deeper link of trust. Face-to-face encounters with customers and tying products to geographical characteristics are two keyways for gaining trust that are commonly employed by SFSCs. In other words, by removing intermediaries and permitting direct contacts, the supply chain encourages the creation of trust through close-knit producer-consumer ties.

Alternative Food Networks such as SFSC are important not only because they provide communities with access to locally sourced fresh and organic food, but also because they allow consumers to contribute to the pillars of sustainability, such as economic and environmental sustainability, by supporting sustainable food production and distribution systems (Rutland, 2011). Many stakeholders emphasize the environmental aspect of sustainability, and the adjustments that these enterprises are about to make are difficult (Inga-Lena Darkow, 2015). The dominant ideology of such reforms might be difficult to accept for a company's top management. The public and businesses have diverse perspectives on sustainability. Consumers believe that organizations play the biggest part in this area.

Consumers are becoming more aware of ecologically friendly production and distribution methods (Monteiro, Levy, & Claro, 2010), and they want to know where their food comes from

(Seyfang, 2008) (Zagata, 2012). The food items are distinguished from their retail equivalents by their transparency and domestic origin (Zagata, 2012).

Consumers can easily follow the entire process of local food production from farm to table, which alleviates ethical and environmental concerns about food production. In terms of environmental advantages, the local food economy minimizes food transportation distances while also lowering carbon emissions. Meanwhile, it encourages farmers to switch to organic farming, which is more ecologically friendly and increases the demand for organic food among consumers (Abate, 2008).

Consumers have more access to local food production, which improves the food's health and security (Brown, 2002). Farmers in SFSCs currently have individual experiences with selecting the quality of raw materials and keeping an eye on the production process. As a result, in the vast majority of situations, microbiological hazards may be managed. Farms may minimize the cycle of turnover by using a shorter chain and a smaller scale, and customers can acquire food goods quickly after they are produced. Cross-contamination is less likely on smaller farms since there are fewer types of food produced. Smaller farms also have a history of ensuring food safety and quality (Verraes, et al., 2015). On the other hand, some farms produce both fresh plants and animals, which makes cross-contamination through irrigation water or crops more likely (Verraes, et al., 2015). In addition, the farmers' capacity to prevent microbiological dangers may be jeopardized due to a lack of expert food safety knowledge.

Because local foods are often less processed and fresher, and there is a high level of transparency, local food minimizes the risk of food safety and security for consumers. Consumers may either visit their production locations or speak with producers to learn more about locally farmed foods (Brain, 2012).

Researchers are also interested in learning more about what motivates people to go to the farmers' market. From a theoretical standpoint, (Conner, Montri, Montri, & Hamm, 2009) argued that local food provides customers with three distinct values. The first is the shorter distance between the producing facility and the market. The second factor is food quality, which mostly signals freshness. The third type of social connection is face-to-face conversation. Furthermore, different areas have varied conceptions of quality, which range from environmental sustainability and animal welfare to rural tradition, local knowledge, and culture (Augère-Granier, 2016)

Consumer interest in foods with local characteristics has been demonstrated in a number of studies. In general, studies have shown that customers are likely to buy at farmers' markets, and that those shoppers have comparable demographic traits, but their driving factors might change significantly between places. According to research, people visit farmers' markets for a variety of reasons, including access to fresh local foods, support local agriculture, improve the local economy, assist local farmers and seek better food quality (Conner, Montri, Montri, & Hamm, 2009) (Baker, Hamshaw, & Kolodinsky, 2009).

Consumers are also interested in SFSC for food safety and security, pesticide-free products, and social connections. Other variables may alter depending on the location or the user; for example, convenience is crucial to some consumers but not to all. A portion of consumers were likewise worried about a product's pricing. A similar phenomenon was discovered by (Conner, Montri, Montri, & Hamm, 2009), who discovered that certain customers judged local foods to be of excellent quality and were prepared to pay extra for the benefit. However, some customers believe that local items should be cheaper. Some customers are also motivated to purchase at farmers' markets by a specialized lifestyle, such as cooking, baking, or a particular interest in certain sorts of food.

Consumers' desires for fresh, high-quality, and pesticide-free meals were cited by (Johnson & Endres, 2011) as the main motivations for choosing locally produced food goods. The second goal is to reduce transportation emissions while minimizing the environmental impact of the manufacturing process. Third, farmers' transportation, processing, and packaging costs should be reduced, allowing them to increase their profitability.

Consumers are now creating groups who buy directly from producers. Solidarity-based Purchase Groupings (or Solidarity Purchasing Groups - SPG) are groups of consumers that buy in bulk from manufacturers based on shared ethical standards (Brunori, Rossi, & Guidi, 2012). Many initial groups were created by the spontaneous initiative of individual promoters, mainly consumers but often small producers, inspired by strong ideological reasons and frequently affiliated to social movement organizations.

Producers are typically chosen by members based on shared principles, such as: - farm size: these are generally small or very small producers, most of whom are professional/direct farmers, but occasionally also hobby and part-time farmers; - farm distance, which should ideally be nearby or within the same region; - direct relationship and knowledge, so that future relationships are based on reputation and consolidated trust; - environmental performance, which should comprise production techniques with low environmental effect — organic or biodynamic farming – either with or without official certification, where the connection is strongly founded on trust; ethical labor condition and even if convenience isn't the primary goal of an SPG, a fair pricing for both producers and customers is desired (Belletti & Marescotti, 2020).



## **2.3 Consumers along the Short Supply Chain**

### **2.3.1 Consumer Awareness**

Consumer awareness is defined by (Rousseau & Venter, 1995) as “the degree or attentiveness of individual consumers of their rights and obligations in the marketplace.” Environmental awareness, according to some researchers, can be generally described as an attitude toward human behavior's environmental effects (Ham, Mr̃cela, & Horvat, 2016). Environmental awareness may also be described as a person's ability to comprehend the link between human activities, environmental quality, and their desire to participate in environmental activities (Liu, Vedlitz, & Shi, 2014) (Umuhire & Fang, 2016).

Consumer awareness is a subset of consumerism as a concept. Consumer awareness and consumerism are not distinguished by (Du Plessis, Rousseau, & Blem, 1994). As a result, they refer to consumerism as a movement of consumer ‘awareness.’ According to them, a customer’s awareness of his or her rights and duties in the marketplace is essential because it provides the consumer with a feeling of consciousness and direction while making purchasing decisions.

That is, understanding consumerism may assist the consumer in exercising discretion in his or her purchasing habits by providing information about his or her rights and advantages in the marketplace. (Du Plessis, Rousseau, & Blem, 1994) go on to say that if a buyer is taught about product knowledge as well as consumer rights, he or she is not only protected against exploitation but also more likely to get the most out of his or her household requirements. Consumption knowledge is also essential to researchers, according to (Solomon, 2002). Researchers play an important role in the development and evaluation of public policy. These policies guarantee that items are properly labeled, that customers can comprehend crucial

information provided in advertising, and that minorities are not discriminated against. Typical minority group concerns include ensuring that youngsters are not used by coercive programs disguised as television entertainment. (Kumar & Ali, 2011) emphasize the relevance of consumer awareness and knowledge about organic foods as key variables that impact consumers' attitudes and behaviors toward organic foods. As a result, customer awareness and understanding fuel food market growth.

Consumers are crucial to consumerism's success. Activists, organizations, and boycotts have all been used by consumers to make their grievances known. The most visible forces in consumption have been consumer advocates. Consumers and their affiliated organizations or agencies have been able to exert pressure on businesses to comply with their requests through boycotts (Assael, 2004). Consumer boycotts, according to (Farah & Newman, 2010), are initiatives by one or more parties to persuade others to refrain from purchasing certain items in order to achieve specific goals.

Consumers are influenced not to buy items from specific corporations from certain nations in order to compel firms to be ethical in their activities. For example, in 1988, a lapsed six-year boycott of Nestle S. A. for breaching World Health Organization Standards on selling infant formula to poor countries was reinstated by a large number of consumers (Assael, 2004). Boycott efforts, according to (Stolle, Hooghe, & Micheletti, 2005), have grown in popularity in recent years. They are aimed at government policies and procedures as well as government acts. According to (Farah & Newman, 2010), boycotting is becoming more popular among customers as they try to persuade businesses to embrace ethical practices. As a result, consumer boycotts have become a type of "economic voting." (Assael, 2004) points out, the government is also involved in consumption. He believes that it is the government's obligation to safeguard

consumer interests. The government does this through legislation and regulation, i.e., regulatory agency activities. In terms of consumerism, the United States government has taken the lead.

Businesses play a role in consumption, according to (Mowen & Minor, 2001) . They notice that many businesses nowadays invest substantial resources in order to portray themselves as excellent corporate citizens who act responsibly. Corporate social responsibility is the term for this activity. They also say that firms must engage in corporate social responsibility in order to prosper in the long run by establishing a favorable public image. (Assael, 2004) goes into further detail on this. He demonstrates that marketing organizations' social responsibility in the pursuit of consumer protection manifests itself in two ways: self-regulation and social marketing.

Organizations' capacity to put restrictions on their own behavior is referred to as self-regulation. Companies have been striving toward more responsible self-regulation for many years. Organizations have participated in charitable sponsorships, environmental reduction activities, and consumer education, for example (Assael, 2004).

Consumer awareness encompasses both consumer rights and duties. Consumer awareness, according to (Rousseau & Venter, 1995), is defined as customers' knowledge of their rights and obligations in the marketplace. Consumer duties are concerned with an individual's ability to generate autonomous judgments about his or her own consumption behavior, which may be argued for and implemented. Consumer duties were implemented after the then-President of Consumers International, Anwar Fazal, aggressively advocated for them in the 1980s. The consumer duties were created to supplement the consumer rights that already existed (Consumers International). Similarly, (Du Plessis, Rousseau, & Blem, 1994) demonstrate that customers not only have rights, but also duties in exercising those rights. Consumer responsibility, according to them, is defined as "the development of the essential information and skills to make autonomous

and reasonable consumption decisions in respect to society and the environment.” This entails gaining the information and skills necessary to make informed decisions that benefit both the individual consumer and society. It also entails being mindful of perceived hazards connected with buying decisions, such as financial risk.

Consumer duties, according to the (CCZ, 2012) include critical awareness, action, environmental awareness, social concern, and solidarity. The duty of being inquisitive and inquiring about product concerns such as pricing, quality, and availability is referred to as critical awareness. Consumption decisions should not be based on self-interest, but rather on logic and common sense (CCZ, 2012).

(Rousseau & Venter, 1995) performed two studies in Zimbabwe and South Africa to assess consumer awareness. They concluded that five distinct qualities termed “deal hunting, general consumer knowledge, product knowledge, information search, and price consciousness” may be used to successfully assess consumer awareness.

#### ***2.3.1.1 Consumer Environmental Awareness***

The subject and technique of study in particular scientific fields dominate the notion of ecological awareness, and diverse approaches are governed by them (Papuziński, 2005). In a broad sense, ecological awareness refers to all the widely accepted concepts, attitudes, and viewpoints regarding the environment as a site of human life and evolution that are shared by certain social groups within a given historical time. In a more limited sense, ecological awareness refers to people’s knowledge, attitudes, and perceptions regarding the environment’s role in human existence, its anthropogenic load, degree of exploitation, dangers, and protection, as well as the state of knowledge about the techniques and instruments used to protect it.

Ecological awareness, according to Kieczewski, is defined as “a person’s attitude toward the natural environment, as well as a collection of facts and ideas about it, as well as a system of values that this person applies to it in his conduct (Kiełczewski, 2001).” Environmental awareness is sometimes used interchangeably with words like environmental consciousness and environmental concern. Environmental awareness, according to Ham et al., is defined as “the attitude toward the environmental implications of human action.” (Ham, Mrćcela, & Horvat, 2016). Environmental awareness, on the other hand, “reflects people’s concern for and understanding of the environmental effects of their behaviors” (Fu, et al., 2019).

It’s described as “a state of awareness, understanding, and consciousness of the environment in which people live, which tends to affect people’s growth and pro-environmental conduct” (Harju-Autti & Kokkinen, 2014). Consumers who are aware of environmental concerns factor it into their purchase decisions (Dagher & Itani, 2012). Environmental awareness and shopping behavior have been studied in several research. As a result, environmental awareness may be seen as a precursor to pro-environmental conduct. Environmental consciousness is rapidly affecting consumer patterns, particularly in developed markets (Shao, 2016), altering habits and purchase decisions.

The impression of organic food is influenced by one’s degree of knowledge (Zanoli & Naspetti, 2002). The higher one’s understanding of environmental concerns, the more likely one is to engage in environmentally beneficial conduct (Flamm, 2009), (Khan, Saengon, Alganad, Chongcharoen, & Farrukh, 2020). Age and education have been linked to responsible pro-environmental conduct in studies (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003).

Consumers’ behavior and product consumption have an influence on the environment. Environmentally conscious customers are aware of the repercussions of their behavior and

product use. As a result, consumers should understand that they are both individually and collectively responsible for protecting the environment for the benefit of current and future generations (CCZ, 2012). Consumers' willingness to pay greater costs for more environmentally friendly items is influenced by their environmental knowledge (Chitra, 2007).

Short food supply chains and consumer environmental awareness are strongly correlated. Short food supply chains are more likely to be chosen by consumers who are environmentally aware due to their perceived environmental benefits such as reduce carbon foot print, sustainable farming practices, transparency and accountability and support of local economies.

**H1: There is a positive relationship between consumer environmental awareness and the intention to buy from proximity.**

### **2.3.2 Consumer Environmental Sensitivity**

The emphasis given to environmental or ecological issues is referred to as ecological sensitivity. Environmental sensitivity, or more precisely, "affective response, feeling," is a term used to describe ecological sensitivity. It covers things like how important people think environmental problems are, how much they know about environmental concerns, and how much money government agencies spend on environmental protection (Thiery-Seror, 1996) .

The term "ecological sensitivity" has been around for over a decade, yet there is no clear meaning. "Ecological or environmental sensitivity is primarily a question of emotional reaction, of sensation, and in this regard appears an imperfect idea," according to certain academics, such as (Thiery-Seror, 1996). According to this researcher, she comprehends perceptions of the

importance of environmental problems, awareness of environmental concerns, and support for government spending on environmental protection is referred to ecological sensitivity.

It is frequently connected with those who are environmentally conscious and who are concerned about environmental issues (Maresca, 2001). The goal of the responsible consumer is to prevent discomfort, find their genuine self, avoid isolation, and have control over their lives (Özçağlar-Toulouse, 2009).

Environmental sensitivity can be connected to a person's core beliefs, views about items, and even apparent behavior. It may have anything to do with ecological knowledge or care. It is frequently related to individual responsible action that helps to maintain the environment. To prevent suffering, uncover one's genuine self, avoid isolation, and maintain control over one's life, responsible consumers embrace responsible habits. The tendency of using green items can be explained by ecological sensitivity. Environmental sensitivity is used as a predictor of familiarity with ecology and ecotourism experiences.

The idea of environmental or ecological concern allows people to be classified according to how concerned they are about the environment. It covers both attitudinal (the individual must display care for ecology or the environment) and behavioral components (the individual must also demonstrate behavior that is conducive with the ecological system's preservation (Takala, 1991) (Sjoberg, 1989).

To circumvent these restrictions, the definition corresponds to the classical attitude model's triple component cognitive, emotional, and behavioral model (Fransson & Gärling, 1999). The cognitive dimension is defined as all subjective knowledge about the consequences of one's own actions on the environment, the emotion dimension is defined as emotional responses

to perceived environmental problems, and the behavioral dimension is defined as a tendency to make a personal contribution to environmental improvement (Dembkowski & Hanmer-Lloyd, 1994). There are several factors that influence concern about the environment, but personality traits are stronger indicators than socioeconomic factors (Kinnear, Taylor, & Ahmed, 1974).

The pattern of consumption of ecological products is explained by environmental sensitivity (Böcker, Hausruckinger, & Herker, 1991) (Lin & Chang, 2012) (Thiery-Seror, 1996). (Lin & Chang, 2012), for example, illustrate that a consumer's opinion of a product's effectiveness is critical in choosing how much of a product they choose to use in a particular situation. Among ecologically concerned customers, this paradigm of green product use vs ordinary product consumption is particularly prominent. Consumers' environmental sensitivity encourages them to select (or even agree to pay extra for) items with environmental qualities (Böcker, Hausruckinger, & Herker, 1991).

One of the two approaches that can be used to investigate environmental sensitivity are egocentric or sociocentric.

The first category of research focuses on identifying environmental sensitivity of persons' behavioral factors, such as sociodemographic variables, attitudes, and values. Using only sociodemographic factors produces incongruent findings (Kinnear, Taylor, & Ahmed, 1974). Some studies indicate no link with age (Anderson, Henion, & Cox, 1974), while others show a positive relationship (Giannelloni, 1998)

A considerable lot of study has been done on the relationship between attitude and environmental preservation behaviors (Kaisera, Doka, Hofstetterc, & Ranney, 2003); (Oreg & Katz-Gerro, 2006). This foundation allowed researchers to connect an individual's evaluative



thinking process (often unconscious) to their behavior. However, (Ajzen, The Theory of Planned Behavior. , 1991) advised that theories such as the Theory of planned behavior, which includes the function of emotions, be examined further.

According to (Giebelhausen, Chun, Cronin, & Hult, 2016), doing sustainable actions creates "warm-glow sentiments," which can lead to more favorable consumer experiences. (Rezvani, 2017) (M.P. White, 2019) suggest that positive emotions may encourage greater long-term behavior. Positive feelings, such as delight and pride, have been shown to motivate people to minimize their use of plastic water bottles, according to (Peter & Honea, 2012). To the best of our knowledge, no research has previously looked at how negative emotions could explain responsible behavior.

Environmental sensitivity is connected to a person's core values (Böcker, Hausrucking, & Herker, 1991). It is seen as a variable mediator in the link between environmental concern and ecological behavior (Zaiem, 2005). Values are long-held ideas that one way of acting is better than another. According to (Stern, Dietz, Abel, Guagnano, & Kalof, 1999), the natural environment will become a new value in modern cultures. They argue that if people are aware of the negative implications of their actions, they will act in an ecologically beneficial manner.

(Onel & Mukherjee, 2015) used the goal framing theory framework to create a research model, figure 4. They hypothesize that biospheric, egoistic, and altruistic values, environmental concern, knowledge of consequences, ascription of responsibility, subjective norms, attitudes toward behavior, PBC, pro-environmental norm, affect, and behavioral intention all influence environmental sensitive behavior. Furthermore, using an interdisciplinary perspective, they define behavioral outcomes as purchase, usage, and post-use, considering three stages of the consumer's consuming process.

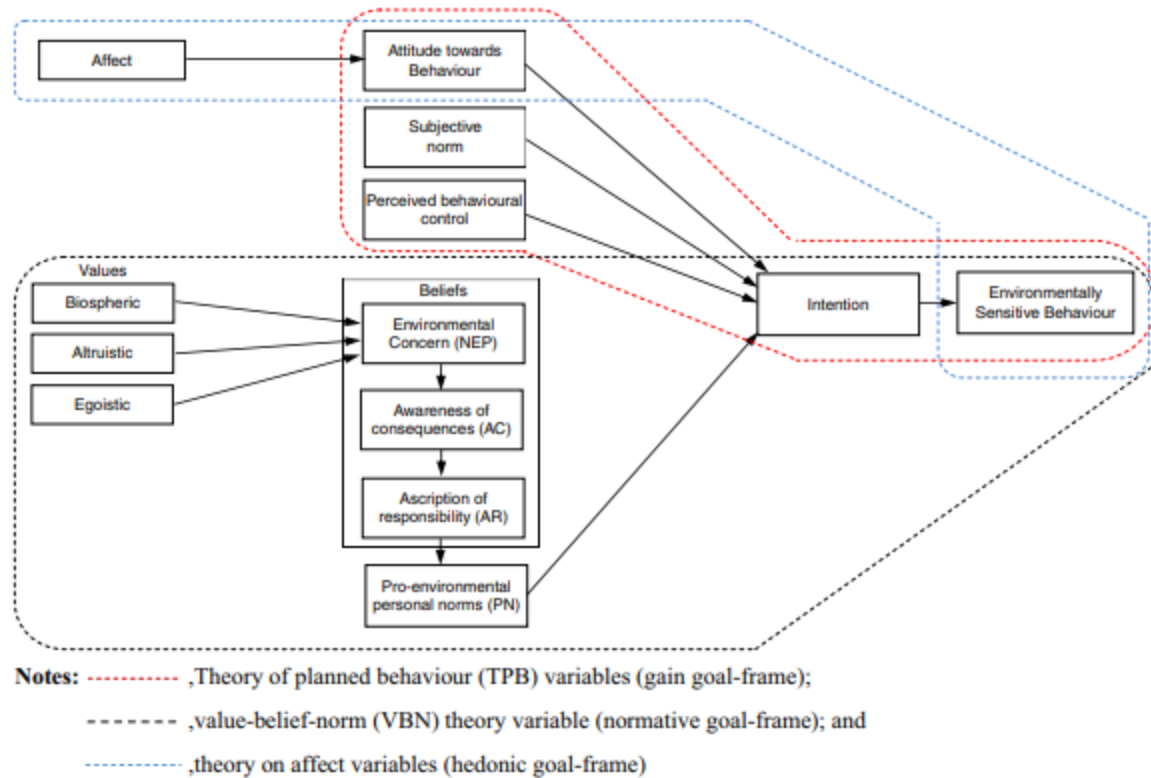


Figure 4 Influence Of Gain Goal-Frames, Normative Goal-Frames, And Hedonic Goal-Frames On Environmentally Sensitive Behavior (Onel & Mukherjee, 2015)

On the other hand, the sociocentric viewpoint brings together work that promotes a broad examination of how people consider the environment. The collection of variables that potentially influence collective behavior is taken into account ( (Bagozzi, 1977); (Shapiro, 1978)). The importance of bringing about social change in order to "encourage, facilitate, and assure ecologically responsible behavior" is emphasized (Le Gall, 2002).

Furthermore, increasing public environmental awareness is essential for attaining more long-term growth. Environmental awareness occurs, according to (Corraliza, 2001), when specific behaviors based on values, beliefs, and legislation attempt to limit the detrimental influence of human activity on the environment. According to (Grob, 1995) in order to be

environmentally conscious, emotions must be linked to the awareness of environmental concerns, since they are frequently linked to people's behavior.

In this way, sentiments like shame or guilt about polluting are indicators of how influential group opinion is on people's decisions.

(Zaiem, 2005) suggested a model that integrated the notions of knowledge, sensitivity, and ecological behavior to differentiate between the three aspects of the concern of the environment (Figure 5).

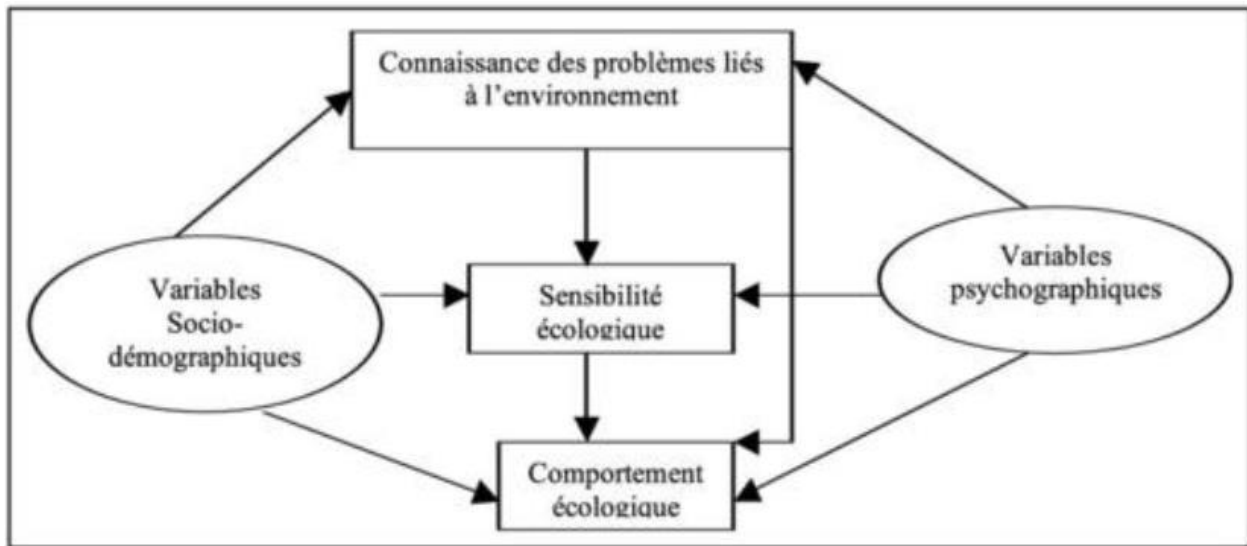


Figure 5 Ecological Behavior Model (Zaiem, 2005)

Thus, environmental sensitivity is positioned in the literature review as a mediating variable between environmental concern and ecological behavior such as environmental protection, green product purchases, and environmental preservation measures.

Consumer environmental sensitivity and short food supply chains are closely related. Environmentally sensitive consumers are more inclined to pick food with short food supply chains because they tend to be more conscious of the effects of their decisions on the environment.

**H2: There is a positive relationship between consumer environmental sensitivity and the intention to buy from proximity.**

### **2.3.3 Consumer Environmental Knowledge**

Environmental knowledge refers to a user's capacity to comprehend and model environmental concepts, concerns, and challenges. In the context of eco-friendly product consumption, this information frequently aids in the activation of one's moral duty to behave in an environmentally beneficial manner (Han & Hyun, 2017). Consumers are increasingly seeking more knowledge about the sources, safety, and wholesomeness of the food they buy (Röhr, Lüddecke, Drusch, Müller, & Alvensleben, 2005). They are also seeking more direct communication with food suppliers, eliminating the multiple intermediaries in the food supply chain and promoting food traceability and easier market transfer between producers and customers. As a result of this situation, new forms of more direct chains between suppliers and customers have emerged as a viable long-term option in terms of economic, social, and environmental benefits (Giampietri E. , Verneau, Del Giudice, Carfora, & Finco, 2018).

Short food supply chains (SFSCs) are these emerging marketing platforms, and their creation will open up a lot of doors for agricultural and agro-industrial producers, as SFSCs bring

suppliers and customers closer together, enhancing marketing and adding value. They can also help to boost food traceability while also facilitating a smoother market transition between suppliers and consumers (Elghannam, Arroyo, Eldesouky, & Mesias, 2018).

A study conducted by (Giampietria, Koemleb, Yub, & Finco, 2016) of 503 Italian customers showed a high level of concern about sustainability concerns. To begin with, they placed a high value on direct communication with suppliers on average. They also noted that the main incentive to purchase organic produce, which is generally associated with limited food supply chains, is the environmental sustainability effect of this production rather than the health benefits. This is in line with consumers' growing awareness of environmental sustainability (e.g., the development of environmentally sustainable externalities, biodiversity preservation) and valuation. Furthermore, findings reveal a high level of public perception of the benefits of shopping at farmers' markets in terms of supporting farmers' profits. Consumers' lower WTP, on the other hand, refuted a blind commitment to justice; additionally, respondents with a higher degree of concern in fairness (i.e., economic sustainability) reported that they were more likely to select organic food for the benefit (i.e., environmental sustainability) of contributing to farmers' economic circumstance. In comparison to local origin, point of sale, product harm, and price, the production method was not important in explaining consumers' option likelihood to buy products at FMs. Consumer preferences for local origin, which is usually a key feature for consumer preferences, take a back seat after consumers develop direct interactions with suppliers, which serve as a kind of assurance even for food origin (e.g., traceability). When purchasing products at FMs, respondents who believed that direct communication with the producer was more critical preferred to shop from the producer rather than a common seller.

On another note, owing to the usage of the Internet, studies classify two major categories of short chains (on-line and off-line). The quick on-line channels make it possible to purchase goods directly from the internet, as well as to get support or get real-time updates about the products on sale. Distance does not matter in these online models because online shoppers will buy goods from anywhere in the world. Quick off-line networks, on the other hand, are those that do not provide an Internet sales infrastructure. Off-line platforms are losing relevance in the present sense, with a growing prevalence of Internet use, in comparison to online channels, where ideas like direct sales over the Internet with home distribution or customer groups with on-line communication and input between producer and consumer are booming (Magrama, 2013).

E-WOM is one of the most important aspects of social marketing, according to some scholars (Elghannam & Mesias, 2019) (Kim & Park, 2013). Consumers may use social media to not only express their shopping and consuming views, but also to consider the opinions and advice of others. This gives the chance to many food businesses to build trust and loyalty with their consumers as well as a good reputation (Röhr, Lüddecke, Drusch, Müller, & Alvensleben, 2005). Customers who support social media's commercial pages are more likely to post favorable word of mouth messages and buy from them (Kim & Park, 2013). In this sense, the presence of word-of-mouth recommendations will boost consumer confidence and, as a result, purchase intentions (Hajli, Sims, Zadeh, & Richard, 2017). Consumers are also able to spend time reading feedback not only for the purpose of gaining knowledge, but also because it allows them to appreciate the experiences of other people, resulting in a shared experience.

Consumer knowledge of environmental issues is a key factor in the demand for short food supply chains. Consumers who are more knowledgeable of environmental issues are more

inclined to select foods that are produced close to home because they are aware of the advantages short food supply chains offer for the environment.

**H3: There is a positive relationship between consumer environmental knowledge and the intention to buy from proximity.**

### **2.3.4 Consumer Values Beliefs & Norms**

There are numerous distinct values in every community. Values have a far greater impact on marketing tactics in the worldwide arena than one might anticipate. Values are taught through imitation or observation of the reward process. Some values are also infected and passed on from generation to generation. Consumers from various cultures, income levels, preferences, expectations, beliefs, conventions, and reasons make up the marketplace. These distinctions also exist between the values that have been acquired and those that will be acquired. As a result, marketing managers must examine these elements, which should be utilized as guidelines for establishing corporate strategies. The difference between total customer value and total customer expense is known as customer value. Simply put, customer value is produced when the perceived advantages of a transaction outweigh the associated costs of ownership (Martin, 1996).

Furthermore, consumer green behavior is linked to individual aspects such as socio-demographics, values, attitudes, and norms. The Value-Belief-Norm (VBN) theory (Stern, 2000) is one theory that combines these aspects. When a causal series of variables (i.e., values, beliefs, and personal norms) is present, green behavior is more likely to occur, according to VBN theory.

Belief is a two-part concept that pertains to one's views about the natural world and human behavior. The first is consequences awareness, which refers to the idea that environmental conditions will either improve (for the benefit of all) or endanger other people, species, or the biosphere (Kiatkawsin & Han, 2017), (Stern, Dietz, Abel, Guagnano, & Kalof, 1999).

(Choi, Jang, & Kandampully, 2015) define awareness of consequences as people's knowledge of negative effects for the environment. The second belief component in the VBN paradigm, ascription of responsibility, comes after knowledge of consequences. A notion that an individual's activities may either avoid or encourage potentially negative effects is known as attribution of blame (Kiatkawsin & Han, 2017), (Stern, Dietz, Abel, Guagnano, & Kalof, 1999). It's also possible to define it as one's personal sense of responsibility for minimizing harmful environmental effects (Choi, Jang, & Kandampully, 2015).

Pro-environmental feelings rise to personal standards for those who have enduring ideas and ideals that are vital to safeguarding the environment (Davari & Strutton, 2014).

In a variety of behavioral domains, personal norms have been added as an extra predictor to increase the normative component affecting behavioral intention and actual behavior. Subjective norms are followed by consumers due to societal pressure (Ajzen, 1991) while personal standards are followed because it is the right thing to do (Schwartz S. H., 1984). Consumers' inner self is expressed through personal norms. The motivating force of their intention into action will be heavily influenced by their sense of personal duty to undertake a certain behavior (Godin, 2008); (Oom Do Valle, 2005). These normative norms are more likely to motivate a person to engage in the desired behavior. As a result, people who have a high sense of moral obligation are more inclined to participate actively in a certain behavior.



Subjective norms (SN) refer to the significant influence that relevant individuals have on an individual, as well as the reality that referents' opinions can encourage or dissuade an individual from engaging in a certain behavior. SNs should have a considerable impact on a person's behavioral intention, which in turn influences their behavior (Ajzen, 1991) (Ajzen, 2005).

According to previous research, social pressures represent values and ideas imposed by specific individuals (e.g., family members, friends, neighbors, or an expert referent). For example, (Vining, 1990) emphasize the importance of being aware of other people's activities in influencing environmental behavior. Similarly, (Chan K. , 1998) emphasizes the significance of a knowledgeable individual urging others to recycle. (Chang, 1998) looks at the possibility of adding a causal line from subjective standards to attitudes. The findings show that how essential others thought the execution of unethical behavior influenced people's views about it.

Furthermore, research has shown that this social component can predict human behavioral intentions (Ajzen, 1991) (Ajzen, 2005) (Chang, 1998). Individuals are motivated to comply with these expectations or demands by SNs, which represent perceived expectations or pressures from important persons or organizations. As a result, it is argued that an individual's intention to do a specified behavior is highly impacted by others' perceptions.

(Sheth, Newman, & Gross, 1991) define five values (or dimensions of value) that impact consumers' choices, based on an exhaustive review of research in the fields of consumer behavior, marketing, economics, psychology, and sociology. These values collectively represent the TCV. A product's intrinsic capacity for functional, utilitarian, or physical performance, i.e. its ability to execute the function for which it was designed, determines its functional worth. The perceived benefit gained through a product's identification with a specific demographic, cultural,

or social group is known as social value. In terms of a product's potential to generate feelings or affective states, emotional value is linked to extrinsic features of consumption. The ability of a product to spark interest, give novelty, or satisfy a demand for knowledge is referred to as epistemic value. Finally, conditional value is determined by a product's potential to give temporary functional or social value in a certain scenario or environment and is thus dependent on the unique conditions that a buyer faces at the point of purchase. According to the foregoing, the TCV is primarily concerned with the "get" component of value.

**2.3.4.1 Consumer Environmental Values & Norms**

(Stern, Dietz, Abel, Guagnano, & Kalof, 1999) proposed the values, beliefs, and norms hypothesis to explain why people support social movements. They were particularly interested in the environmental movement. To explain environmental behavior, the theory employs a variety of ideas. The interaction of factors in the values, beliefs, and norms theory is depicted in the diagram below.

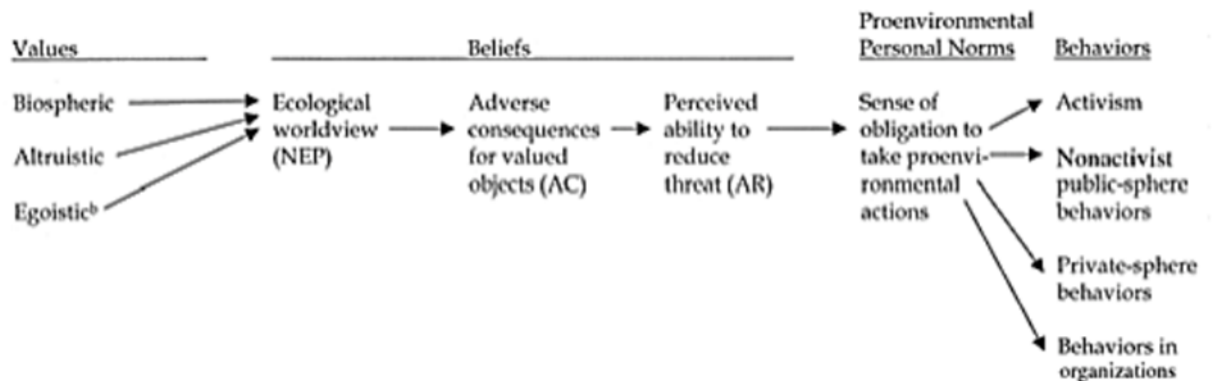


Figure 6 Values, Beliefs, And Norms Hypothesis (Stern, Dietz, Abel, Guagnano, & Kalof, 1999)

The values, beliefs, and norms hypothesis begin with three different value orientations that are thought to relate to environmental behaviors, as shown in Figure 6. (Monroe, 2003); (Steg, Dreijerink, & Abrahamse, 2005). These values are said to be predispositions that increase or decrease the likelihood of certain beliefs and actions. They include biospheric altruism (concern for the nonhuman environment or biosphere), humanistic altruism (concern for the welfare of other humans), and self-interest/egoistic values (concern for maximizing individual outcomes) (Monroe, 2003). Values are viewed as stable components that are essential to the development of one's personality and belief structure.

The three value categories are thought to impact ideas about human-environment relationships, which in turn influence beliefs about the negative repercussions of such a connection and the individual's duty to take remedial action. These ideas will then activate personal norms, which may lead to a range of environmental behaviors, including environmental activism, non-activist public sphere behavior, private sphere behavior, and other ecologically relevant behaviors, such as work-related activities (Stern 2000).

The value-belief-norm theory is a sequential model in which the relationship chain activates pro-environmental behavior through value orientations, ecological worldviews, opposing consequences for valued objects, official responsibility, and sense of obligation to take pro-environmental actions in order (Young, Yin, Kim, & Li, 2020) .

The multidimensional categorization of consumption value that was incorporated in the model as a mediator in the association between environmental awareness and visitors' inclination to visit green hotels was the study's finding done by (Demir, Rjoub, & Yesiltas, 2021). According to the findings, both functional and emotional value have a direct impact on customers' desire to visit a green hotel. Furthermore, functional and emotional values were

discovered to be a key mediator in understanding the relationship between environmental care and knowledge, as well as the intention of visitors to visit a green hotel. The findings suggest that eco-conscious customers will choose to stay in a green hotel if the functional value is judged adequate.

Consumer environmental values, beliefs, and norms are important drivers of demand for short food supply chains. Customers are more likely to intend to buy locally sourced food with short food supply chains if they place a high priority on environmental values, believe that food production has an impact on the environment, have norms surrounding supporting local producers, and have trust in local producers.

**H4: There is a positive relationship between consumer environmental values, beliefs and the intention to buy from proximity.**

**H5: There is a positive relationship between consumer environmental norms and the intention to buy from proximity.**

### **2.3.5 Health Consciousness**

The quality, safety, and environmental friendliness of food are issues that consumers are becoming more and more concerned with. Worldwide consumption of organic food has rapidly increased due to the rising need for a better diet (Kushwah, 2019). With a growth rate ranging from 10% to 30%, the organic or natural food business has been on the rise recently (Rana & Paul, 2017).

Researchers have emphasized the significance of customer involvement in organic food purchase decisions, even though consumption motives (e.g., health consciousness and food safety concern) positively shape attitude toward organic products (Teng & Lu, 2016). Customers, according to (Hamzaoui Essoussi & Zahaf, 2009), pay close attention to the product's contents, artificial coloring, artificial flavoring, and more than that, if it is a chemical- and pesticide-free product, in addition to the safety statement on the label. In order to do this, customer participation is crucial in forming consumers' attitudes and influencing their intention to buy decisions; as a result, it should create a connection between consumers' consumption goals and their intended purchases (Teng & Lu, 2016) .

As people's concerns about their health and social awareness have risen, so have their eating habits. Thus, it is essential for the sustainability of the environment to promote and broaden adoption of ecologically beneficial activities. As a result, consumers have begun to alter their food consumption habits and show a greater care for its nutritional content, health, and quality. According to (Van Doorn & Verhoef, 2015) , using and buying eco-friendly items, such organic food, tends to have a significant impact on enhancing environmental quality. Natural product use, according to (Lockie, Lyons, Lawrence, & Mummery, 2002), is crucial for leading environmentally sustainable lives.

Due to growing awareness of health risks, organic food is another trend that is good. Consumption of organic foods has drastically expanded over the past few decades, with a faster yearly growth rate than the market for conventional foods (Molinillo, Vidal-Branco, & Japutra, 2020). As a result, consumer tastes changed away from conventionally farmed foods and toward those made using organic methods. Organic food is defined as being produced without the use of pesticides, synthetic fertilizers, bioengineered organisms, or ionizing radiation.

Consumer health consciousness is an important driver of demand for short food supply chains. Because of the advantages of freshness and quality, transparency and traceability, organic and sustainable farming practices, and less use of preservatives and additives, consumers who place a high priority on health and wellness are more inclined to prefer food that is locally produced and intend to buy from proximity.

**H6: There is a positive relationship between consumer health consciousness and the intention to buy from proximity.**

### **2.3.6 Consumer Attitude**

(Solomon, 2002) defines an attitude as a long-term, broad assessment of an item. An object might be a person (including oneself) or a problem. An attitude, according to (Arnould, Price, & Zinkhan, 2002), is essentially “a summary of consumer ideas, feelings, and behaviors.” An attitude, according to (Blackwell, Miniard, & Engel, 2006), is a worldwide evaluative judgment of products. A positive attitude toward a product or brand indicates that the individual enjoys it, whereas a negative attitude indicates that the person dislikes it. In the context of consumer behavior, (Schiffman & Kanuk, 2004) define an attitude as a favorable or unfavorable inclination that steers customers’ behavior in a certain direction. They claim that the term object refers to anything particular in consumer behavior such as a product, product category, brand, or marketing in their consumer-oriented definition. As a result, while doing market research, marketers prefer to be object specific. It is difficult to detect attitudes directly in this situation. Thus, customers’ sentiments must be deduced from their behaviors or what they say (Schiffman & Kanuk, 2004).

From the definitions of attitudes, Schiffman identifies three qualities of attitudes. First and foremost, attitudes are an acquired trait. The idea is that attitudes can be taught. Consumer attitudes regarding products are developed by direct contact with the product, exposure to marketing communications, and word-of-mouth information. Attitudes have an element of motivation, i.e., consumer attitudes may either push or repel a customer from a certain product. Second, attitudes and the behavior they represent are generally constant. Third, attitudes are formed in the context of a circumstance. Individuals might have varying views regarding a product or brand depending on their circumstances. As a result, while assessing attitudes, the marketer should pay close attention to the context in which behavior occurs; otherwise, the link between attitudes and behavior may be misinterpreted (Schiffman & Kanuk, 2004).

In literature, the notion of customer attitude has received a lot of attention. Understanding consumer sentiments is critical because it allows marketers to affect how customers react to items or brands (Argyriou & Melewar, 2011). Attitudes are even more essential when it comes to establishing a marketing plan. Attitudes aid marketers in the identification of benefit categories, the development of new goods, and the formulation and evaluation of promotional tactics (Assael, 2004).

#### ***2.3.6.1 Consumer Environmental Attitude***

Because of the environmental impact, (Kelley, et al., 2019) underlined the necessity of studying customer attitudes regarding environmentally friendly packaging. For example, while (Akroush, Zuriekat, Al Jabali, & Asfour, 2018) claimed that attitudes influence purchase behavior, others claimed that attitudes and generations influence purchase behavior (Kelley, et al., 2019).

Although there are numerous measuring tools available, the New Environmental Paradigm (NEP) scale is the most commonly employed to examine environmental attitudes (Dunlap & Van Liere, 1978); (Dunlap, Van Liere, Mertig, & Jones, 2000). This scale was created to assess changes in social attitudes about the environment in the 1970s and 1980s, following the start of the environmental movement. (Dunlap & Van Liere, 1978) established the New Environmental Paradigm (NEP) scale to assess respondents' attitudes about conserving natural balance, development limitations, achieving a steady-state economy, and the need to reject an anthropocentric approach toward nature. Environmentalism, according to the NEP, questions the most fundamental beliefs about nature and the interaction between humans, animals, and the natural environment. The scale aims, in theory, to assign the same value to natural resources as to human life. The NEP is an attempt to comprehend people as natural beings. Humans have a responsibility to use natural resources properly, according to the NEP (Dunlap & Van Liere, 1978).

In order to attain content validity, the scale items were created to assess the constructs. The items were presented in a five-point or seven-point Likert measurement scale, with potential responses ranging from strongly agree to strongly disagree. The objects' directionality is not proportional in the original scale. This has been raised as a possible measuring problem by critics of the scale. Dunlap rewrote the NEP scale to remedy the directional imbalance as well as to refresh and extend its content.

Table 3 shows how the NEP scale components have changed throughout time. The authors adopted the name "New Ecological Paradigm" to allow the reference to "ecological" difficulties rather than "environmental" challenges facing the modern world (Dunlap, Van Liere,



Mertig, & Jones, 2000). The increase in the number of elements from the original scale is one notable difference between the two scales.

New Environmental Paradigm (Dunlap & Van Liere, 1978)	New Ecological Paradigm (Dunlap, Van Liere, Mertig & Jones, 2000)
<p>We are approaching the limit of the number of people the earth can support.                      The balance of nature is very delicate and easily upset.                      Humans have the right to modify the natural environment to suit their needs.                      Mankind was created to rule over the rest of nature.                      When humans interfere with nature it often produces disastrous consequences.                      Plants and animals exist primarily to be used by humans.                      To maintain a healthy economy we will have to develop a "steady state" economy where industrial growth is controlled.                      Humans must live in harmony with nature in order to survive.</p>	<p>We are approaching the limit of the number of people the earth can support.                      Humans have the right to modify the natural environment to suit their needs.                      When humans interfere with nature it often produces disastrous consequences.                      Human ingenuity will ensure that we do NOT make the earth unlivable.                      Humans are severely abusing the environment.                      The earth has plenty of natural resources if we just learn how to develop them.                      Plants and animals have as much right as humans to exist.</p>
<p>The earth is like a spaceship with only limited room and resources.                      Humans need not adapt to the natural environment because they can remake it to suit their needs.                      There are limits to growth beyond which our industrialized society cannot expand.                      Mankind is severely abusing the environment.</p>	<p>The balance of nature is strong enough to cope with the impacts of modern industrial nations.                      Despite our special abilities humans are still subject to the laws of nature.                      The so-called "ecological crisis" facing humankind has been greatly exaggerated.                      The earth is like a spaceship with very limited room and resources.                      Humans were meant to rule over the rest of nature.                      The balance of nature is very delicate and easily upset.                      Humans will eventually learn enough about how nature works to be able to control it.                      If things continue on their present course, we will soon experience a major ecological catastrophe.</p>

*Table 3 the Scale items that are Found in the New Environmental Paradigm and the New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000)*

Items were added or altered to address the concept of “human exemptionalism,” or the belief that humans are different from other animals and are thus exempt from natural rules. Environmental problems such as ozone depletion, climate change, and human-induced global environmental change have motivated the inclusion or amendment of items to incorporate comments about potentially catastrophic environmental changes since the original edition

(Dunlap, Van Liere, Mertig, & Jones, 2000). Additionally, items were phrased so that a positive response represented a pro-ecological worldview for eight of the items and a negative response reflected a pro-ecological worldview for seven of the items. As a result, the NEP is arguably the world's most frequently utilized indicator of environmental concern (Dunlap R. E., 2008), (Pienaar, Lew, & Wallmo, 2015).

In certain situations, the 15-item NEP has been used to measure environmental attitude with a fair coefficient of reliability. In a prior study, Dunlap (2000) revealed an alpha coefficient of 0.83 for the NEP scale, which corresponds with other environmental attitudes measures. The reliability estimate of the NEP scale was 0.83 and 0.79 correspondingly in a more recent study done among American and Hungarian middle-class individuals (Kovács, et al., 2014).

Due to the advantages of lowering the environmental impact of food production and transportation, boosting local economies, promoting sustainable and organic farming practices, and enhancing transparency and accountability in the food system, consumers who have environmental attitudes are more likely to have an intention to buy from proximity.

**H7: There is a positive relationship between consumer environmental attitude and the intention to buy from proximity.**

### **2.3.7 Environmental Product Quality Attributes**

When studying the consumers' intention to buy, one cannot but mention the product attributes as the product itself has a very crucial role in the decision-making process. Garvin suggests eight important quality aspects or categories for strategic analysis: Performance,

features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality (Garvin, 1987).

In this thesis the focus will be on environmentally friendly food products where some customers make dietary decisions based on the belief that certain foods are healthier, more ecologically friendly, and nutritionally superior (Rana & Paul, Consumer behavior and purchase intention for organic food: A review and research agenda., 2017).

The characteristics of the process of selecting food products by the target market involves a phenomenon in which food product attributes, which are classified into three categories (Wierenga, 1983) and defined as sensory, instrumental, or symbolic, and may be located in different layers of a product, shape consumer preferences (outside and inside). Physical characteristics such as taste, smell, color, and appearance make up the first category of sensory traits (Grzybowska-Brzezińska, 2013). Functional (also known as instrumental) traits are characteristics that help consumers meet their physiological demands, such as providing energy and assisting in the development and maintenance of cells and body organs. This collection of features includes the composition, the presence of certain nutrients (carbohydrates, proteins, vitamins), the kind of components, and the presence or absence of preservatives or additions. Functional qualities are characteristics of a product that are connected to its utilitarian value, such as container size, ease of preparation, and preservation technique (Grzybowska-Brzezińska, 2013).

Consumption of particular items may also be linked to status (purchasing things that are in line with a consumer's self-image) or it can assist communicate a message about a consumer to other community members (consumption for show). Because the symbolic functions of a product are unique and dependent on social culture, subculture, or social class, the process of

developing prestige attributes is linked to the position of the product's brand, the position of the manufacturer, and the method of communication between the company and the targeted consumer segment (Lin C. , 2002).

Consumers equate organic goods with tastier foods than conventional ones because they are produced in a more natural method (Rana & Paul, Consumer behavior and purchase intention for organic food: A review and research agenda., 2017), and so have a cleaner flavor.

The accessibility of organic products is a relevant quality in most marketplaces because their difficulties in finding them might make them difficult to locate or even prevent them from being purchased (Zundel & Kilcher, 2007). Certification assurances can aid in buying decisions by increasing client confidence (Hjelmar, 2011) (Rana & Paul, Consumer behavior and purchase intention for organic food: A review and research agenda., 2017). Another consideration is the origin of organic products, particularly for buyers with ideological ethical concerns. This factor is linked to a guarantee of fresher seasonal goods, higher quality, and lesser transportation-related environmental consequences (Hjelmar, 2011). Indeed, organically produced food has become a component of the globalization process since demand has grown to the point that national supply can no longer meet it. Local food, by definition, reflects the reversal of this tendency, resulting in proximity in food production (Hempel & Hamm, 2016).

Short food supply chains and characteristics of product quality are strongly correlated. Food products with shorter food supply chains tend to be of superior quality.

**H8: There is a positive relationship between product quality and the intention to buy from proximity.**

### **2.3.8 Effect of Price and Disposable Income of Consumers on Buying Eco-Friendly Products**

Price is a factor that cannot be neglected throughout the whole decision-making process (Ang, Leong, & Kotler, 2000). Previous research about price sensitivity and its correlation with the purchasing intention of an environmentally friendly product as a preceding factor reveals that 30% of the consumers stated that they will give priority to environmentally products and services, however only 3% of consumers did make green purchasing decisions. Moreover, 27% of the consumers who participated in this study have failed to purchase environmentally friendly products because of the premium price that such products carry. Such high prices have lowered the environmental beliefs of consumers.

Consumer income is the basic factor to consider when studying the range that people can afford for premium services and green products. Usually, premium services and products are much more expensive than regular services.

Previous studies show that consumers who show price sensitivity have higher degrees and are more likely to show green consumption intentions. Even though consumers claimed that they are concerned with the environment they might not actually buy green products because of their high prices when compared to traditional products (Malik, Singhal, & Tiwari, 2017). The data reveal a link between income and green product spending. To put it another way, when

customers' income rises, they will purchase more green items on the market (Norimah, et al., 2019).

A study by (Lockie, Lyons, Lawrence, & Mummery, 2002) identifies environmental conscious consumers by the people who put limits on their organic food consumption to adopt to high prices.

Studies on prices and income show that people living in Western Countries which have relatively high GNP and income level are willing to pay more for environmentally friendly products. Several studies focus on identifying how the price sensitivity of green consumers and actual prices of green products impact the consumer purchasing behavior (Mahene, 2007) . A study in Hong Kong which is a country that is similar in the demographic profile of the Western countries revealed that unemployed and retired customers purchase green products less frequently than other consumers (Chan K. , 1999) .

Studies show that the people with low income cannot afford green products with premium prices, but this does not mean that the people that belong to low-income groups have no interest in green products. This means that consumers who show positive attitude toward green consumption might not actually consume environmentally products due to their high cost (Gleim, Smith, Andrews, & Cronin, 2013).

Price of short food supply products may be higher due to sustainable production practices; economies of scale and seasonality of products.

**H9: There is a negative relationship between the price of local products and the intention to buy from proximity.**

### **2.3.9 Relationship and Trust with the Producers**

According to the textbook book *La Confiance en Gestion* by (Gratacap & Le Flanchec, 2011) that collected various references, trust can be explained by different approaches:

- economist: the concept of taking reasonable risks relates to the concept of trust. As a result, it is an entirely rational and utilitarian action (Williamson, 1985).

- physiological: trust is built not only between individuals, but also between organizations. It is created through understanding the dynamics of a partnership (Rotter, *Generalized expectancies for interpersonal trust*, 1971).

-sociological: the idea of an authority relationship derived from a hierarchy is replaced with the idea of a social network. The development of these social networks on the markets is precisely what would be more likely to foster trust (Granovetter, 1985).

When studying trust, as stated by (Gratacap & Le Flanchec, 2011), it's important to establish the different characteristics of the actors involved in the trust relationship. In this case the main actors are the sellers and customers.

A crucial element in the growth of the trusting relationship with the seller is his ability or experience of technical knowledge to become competent, but other sources include the market,

rival businesses, and the sector itself. It assists in building a trusting bond with the customer (Doney & Cannon, 1997). The degree of trust in the partner is determined by the seller's level of knowledge or ability (Doney & Cannon, 1997).

Moreover, the degree to which the vendor and the buyer (consumer) are similar affects the relationship's level of trust and general quality (Crosby, 1990). It is predicated that individuals who have similar traits (such as values, interests, lifestyle, etc.) are more disposed to fostering a relationship.

Additionally, the seller's sympathetic nature refers to how nice, kind, and likeable he is (Doney & Cannon, 1997). These are arbitrary characteristics that may affect trust. People that exhibit confidence will come across as being approachable, attractive, and upbeat (Rotter, 1980). This perspective can be applied to marketing and is based on social psychology research. Another vital quality for the seller to have to win the buyer over is sympathy (Swan, Trawick, & Silva, 1985). This idea is also connected to "affective" trust (McAllister, 1995).

Furthermore, trust develops when individuals or groups act in accordance with expectations that have been previously set. Familiarity is a current state that determines trust because it helps to shape these expectations (a future state). Familiarity increases the chances of predicting behavior, and consequently trust in the partner, to the extent that it is founded on previous experiences and the product of earlier learning (brand, company, salesperson, commercial website ... ).

Another factor that develops trust between actors is the satisfaction of the customer. The psychological state of satisfaction integrates both cognitive and emotive processes (Evrard & Aurier, 1996) . Since it is neither a pure feeling nor a pure evaluation, it is a "non-directly



observable phenomenon". (Swaen & Chumpitaz, 2008)" Insofar as it is based on a comparison between a subjective experience (arising from the usage of a product or service) and an original reference standard, satisfaction is seen as relative.

According to a relational viewpoint, cumulative satisfaction "designates an emotive state" of the customer that corresponds to a comprehensive assessment of his relationship with the company. It is the outcome of his long-term usage experiences (Mcalexander, Kim, & Roberts, 2003). Thus, the fulfillment of experienced customers supports the company's perceived dependability and fosters customer confidence. The buyer feels reassured about future transactions when the seller can rapidly address the sources of dissatisfaction (fast processing of complaints, quick and efficient solution to the problem, etc.). He will be more confident in the outcome of upcoming transactions since he will have evidence that any issues will be resolved.

Moreover, shared values play an important role in building trust. Shared values are defined as "partners' shared convictions about the significance, appropriateness, and fairness of their behaviors, goals, and policies (Morgan & Hunt, 1994)" In contrast to beliefs, values last a long time and are therefore often stable. They encourage devotion and faith. For instance, if both partners uphold ethical principles, they will feel more confident about how future interactions will turn out and will encourage the relationship's longevity. These strongly held principles contribute to confidence by making behavior more predictable. Values are based on trust to the extent that it allows one to predict the behavior of the other. For instance, we are more likely to place our trust in someone if we believe they have ethical principles (he will not have opportunistic behaviors) (Morgan & Hunt, 1994).

To briefly state, trust is a mental condition that combines affective and cognitive aspects, as well as the intention to accept one's vulnerability in front of others. It can be initiated right

away (short-term) or after a long-term partnership (long term). It can be harmed and repaired using the techniques below (acknowledgment of guilt, apologies, regret, etc.). It is consequently only temporary and not final. It needs to be kept up with the help of effective communication and information. Credibility, integrity, and benevolence are the three widely acknowledged key aspects of trust, and they are currently used in measurement scales to account for the multidimensional structure of the notion (Aurier & N'Goala., 2010).

Since a number of scandals (Forbes, Cohen, Cullen, Wratten, & Fountain, 2009) and the gradual industrialization and globalization of lengthy agri-food supply chains have been challenging the agri-food sector over the last decades (Toler, Briggeman, Lusk, & Adams, 2009), there has been a significant rise in consumer skepticism about the quality and safety of food. Although labeling and certification of products or processes sometimes succeed in resolving this issue, they sometimes fall short. In recent years, Short Food Supply Chains (SFSCs) have become more popular throughout Europe (Kneafsey, et al., 2013), offering a sustainable alternative to global chains in terms of its positive effects on the economy, society, and the environment (Mundler & Laughrea, 2016). This is consistent with the ethical and critical consumerism of today, which is concerned with the effects of food consumption on the environment and human health (Banterle, Cavaliere, & Ricci, 2012). Direct interactions between the actors are observed to give consumers a sense of trust that affects their purchase decision in regard to short chains, and SFSCs are well known for reuniting farmers and consumers (Kirwan, Alternative strategies in the UK agro-food system: interrogating the alterity of farmers' markets. , 2004).

Researchers, actors, and policymakers working in the food system are all very interested in and value consumer trust, because of its anticipated effects on consumer confidence and the

demand for goods with credible qualities like sustainability and health (Macready, et al., 2020). Numerous authors (Frewer, Howard, Hedderley, & Shepherd, 1996) (Ding, Veeman, & Adamowicz, 2015) (Lassoued & Hobbs, 2015) contend that trust is a solution for consumer decision-making, particularly in situations where there is scarcity, a lack of information, or the situation is difficult to evaluate, such as in consumer buyer-seller relationships. According to (Hartmann, Klink, & Simons, 2015), regular interactions and direct interactions between farmers and consumers can foster a sense of trust among consumers that is based mostly on shared knowledge and understanding.

Consumers' desire to know how, where, and by whom food is produced has been growing over the past few years due to the need for them to be able to trace the food they consume.

According to (Giampietri E. , Verneau, Del Giudice, Carfora, & Finco, 2017), consumer trust is important when selecting whether to purchase food from SFSCs, and when it does, it might have a favorable behavioral impact. Consumer misunderstanding may be eliminated by trust, leading to the creation of new loyalty in SFSC among customers and producers. These results allow the prediction that through fostering consumer confidence in SFSCs, people's intents to shop in these alternative networks will likewise grow. Consumer intention to buy will increase as it becomes easier for them to shop at SFSCs and as their level of trust increases. In a similar vein, as more consumers' attitudes toward SFSCs are positive and as more social referents (i.e., family members and friends) approve of shopping at such alternative agri-food networks, consumer intention to engage in this behavior will also rise.

It's interesting to note that trust serves as a remedy for all circumstances marked by growing complexity and lack of knowledge, as in the cases of consumer trust in food and buyer-seller relationships (Lassoued & Hobbs, 2015). One of the biggest difficulties facing the

marketing industry today is the need to restore and strengthen consumer trust between consumption and farming. According to (Ding, Veeman, & Adamowicz, Functional food choices: Impacts of trust and health control beliefs on Canadian consumers' choices of canola oil. , 2015), trust plays a significant role in decision-making when information is limited or difficult to evaluate, such as during the food purchasing process. Trust toward farmers (instead of retailers) is a complex and difficult-to-measure concept. In order to properly address customers' loss of information and control over the supply chain, which influences food choices, especially in the case of SFSCs, customers' trust may play a key role.

SFSCs are found to significantly contribute to many social, environmental, and economic sustainable goals related to the agri-food sector by fostering the reconnection between producers and consumers by reducing the number of actors and distances along the supply chain (Marsden, Food matters and the matter of food: towards a new food governance? , 2000). Customers can develop a sense of trust based mostly on shared expertise and mutual understanding through direct contacts and recurrent encounters with farmers (Hartmann, Klink, & Simons, 2015). In fact, producers and consumers can interact, share, and exchange information about food products, the production process, and their personal values through the typical SFSCs' face-to-face initiatives (Renting, Marsden, & Banks, 2003). This reduces information asymmetry and fosters new, enduring loyalty. According to this concept, trust takes the place of complete knowledge (Greibitus, Steiner, & Veeman, 2015) and its significance in influencing consumer food choice and purchase decisions appears to be rising.

Short food supply chains can increase consumer trust in the food system by putting an emphasis on direct communication, traceability, quality control, and ties to the local community.

A more robust and sustainable food system may result from greater customer intention to buy from proximity.

**H10: There is a positive relationship between consumer trust and the intention to buy from proximity.**

### **2.3.10 Consumer Demographics and Geographical Area**

In an attempt to make a good impression on others, consumers are more lenient to choose sustainable options and try to ratify sustainable options which are of a high involvement nature option (e.g., hybrid vehicles) to express the social status to others in the community (Green & Peloza, 2014) .

Descriptive norms are believed to be great predictors for sustainable consumer behavior. They are stronger than other factors such as self-interest, individuals seem to underestimate the level of influence that such norms can have. Shedding light on descriptive norms can have a negative impact on the desired action if most of the people are not engaged in the targeted sustainable behavior (Schultz, et al., 2007) .

A study in Canada and Hong Kong on female buying behavior revealed that, younger consumers are more attracted to environmentally friendly consumers than other shoppers (Chan T. , 1996). A random survey performed in the US revealed that (Roberts, 1996) the age factor has a great impact on the ecological conscious consumer behavior. The survey showed that older consumers are more likely to experience such a behavior. Another study on Portuguese consumers, (do Paco, Raposo, & Walter, 2009) revealed that the environmentally friendly people

are those that belong to the age groups 25-34 and 45-54. The participants were divided into three samples which were divided based on measures of concern, demographics, knowledge, affect, environmentally friendly buying behavior in addition to other dimensions. (Sogari, Pucci, Aquilani, & Zanni, 2017) concluded that some generations may be more environmentally conscious than others.

(Laroche, et al., 2001) researched consumers who were located in neighborhoods in the large North American city. The study showed that females who were married and had at least one child been willing to choose and pay more for environmentally friendly products. (Loureiro, McCluskey, & Mittlehammer, 2005) conducted interviews with consumers that buy apples at two different grocery stores in Portland, Oregon area. The findings of this study showed that females who are under the age of 18 were the most out of the participants willing to pay more for the perceived environmentally friendly apples. Studies also reveal that the female gender witnesses more sustainable consumer behavior. Such a phenomenon is explained by the fact that women usually tend to be more open to experiences, and interdependent (Dietz, et al., 2002) (Eagly, 2009) (Luchs, et al., 2012). (Vicente-Molina, Fernández-Sainz, & Izagirre-Olaizola, 2018) study proved that pro-environmental behavior is seen to be more successful by women than by males, and the difference is considerable. Women are also more motivated to help others than males. Furthermore, women are more worried about environmental concerns than males, according to the findings. Finally, it has been established that women are more environmentally conscious than males (30.95 percent vs 29.56 percent, respectively).

Three studies on the issue of demographics and environmental awareness revealed that those with higher level of education are more likely to experience environmentally friendly behaviors (Chan T. , 1996) (Roberts, 1996) (do Paco, Raposo, & Walter, 2009). Moreover,

(Hoffmann & Muttarak, 2020) found that education has a favorable impact on environmental behavior. An extra year of education increases the likelihood of taking ecologically friendly actions by 3.3 percent.

On the other hand, without the use of artificial fertilizers, pesticides, hormones, genetically modified organisms, or ionizing radiation, organic food is grown and prepared. Local food is defined as being produced, prepared, distributed, and consumed locally—that is, within a defined geographic region that is not far from the consumer. In the discussion of local food systems, (Feagan, 2007) has drawn attention to the constructed character and contradictory connotations of the word "local." He contends that the local and extra-local are inextricably linked, and that this makes it difficult to define the local's boundaries in terms of space.

Many factors, including economic links to local participants and the locations of the trade partners, are at play in the travel distance of local food, according to research done to identify the borders of local food in practice (Trivette, 2015). Local food is defined by social and supply chain factors like production practices in addition to geographic closeness between producer and consumer (Thompson & Kraus, 2008). Local foods, for instance, improve food security and advance the social, environmental, and economic well-being of a region. Moreover, it is linked to ecologically friendly sustainable production and distribution methods that minimize the use of synthetic chemicals, energy-based fertilizers, and pesticide and chemical residue on food (Martinez, et al., 2010).

Thus, the geographical area plays a role in buying organic food and benefiting from the positive attributes in presents.

**H11: Demographics (age, gender, family size, educational level, marital status, disposable income) controls the relationships between the independent variables (environmental awareness, attitude, knowledge, values, beliefs and norms, sensitivity, health consciousness, product quality and trust) and the dependent variable the intention to buy from proximity.**

**H12: The geographical area controls the relationships between the independent variables (environmental awareness, attitude, knowledge, values, beliefs and norms, sensitivity, behavior and health consciousness) and the dependent variable the intention to buy from proximity.**

### **2.3.11 Consumer Behavior and Intention to Buy**

Individuals and organizations use consumer behavior to describe the processes of selecting, acquiring, consuming, and discarding of items in order to meet their needs (Solomon, 2002). Similarly, according to (Schiffman & Kanuk, 2004), consumer behavior refers to how people look for, buy, use, assess, and dispose of things in order to be pleased. Consumer behavior, according to (Blackwell, Miniard, & Engel, 2006), is an area of research that focuses on consumer actions. They go on to describe consumer behavior as the actions that consumers engage in when they acquire, use, and dispose of things.

In simpler words, consumer behavior has been defined as the study of why individuals purchase, which makes it easier to develop consumer-influencing techniques (Blackwell, Miniard, & Engel, 2006). Consumer behavior, according to (Schiffman & Kanuk, 2004), is concerned with how consumers make decisions when they spend their resources to obtain



consumption-related products. Individual consumers and organizational consumers are two types of customers, according to (Schiffman & Kanuk, 2004).

Consumer behavior, on the other hand, is primarily concerned with individual customers who purchase items for personal or family use. They also claim that end-use consumption is the most ubiquitous of all consumer behavior patterns. The primary reason for this is that end-use consumption affects everyone, whether they are buyers or users. The direction of products or services to the market is what marketing is all about. The target market's clients' buying behavior is an essential factor in this approach. As a result, the marketer must have a thorough grasp of how various consumer categories view the product offering.

Understanding these customer categories' value requirements and expectations is equally crucial. More importantly, it is necessary to understand customer attitudes and how learning occurs. As a result, having a good grasp of customers and the processes they go through when consuming things has numerous advantages (Du Plessis P. , et al., 2007). In the realm of marketing, the idea of customer primacy is at the forefront. Consumers are the core focus of marketing efforts, according to this notion. To put it another way, in order to develop effective marketing strategies, marketers must have a thorough grasp of the elements that impact customer requirements and desires.

As a result, (Du Plessis P. , et al., 2007) suggest that all marketing strategies are founded on good consumer behavior assumptions. Identifying and selecting a target market for products and services, as well as offering greater customer value, are all part of marketing strategy. Customers must be offered items or services that meet their requirements. Organizations must become more customer centric as the market gets more competitive. According to the marketing

perspective, identifying and satisfying customer requirements leads to increased customer retention (Du Plessis P. , et al., 2007).

Consumers place personal importance on a broad understanding of their behavior. Understanding the elements that impact customers' personal consuming behaviors helps them become better consumers, as well as assisting them in the purchasing process by offering knowledge on some of the marketing tactics firms do. It's also rewarding, and it's all part of being a well-rounded, educated individual (Mowen & Minor, 2001). Customer decision making is defined by (Du Plessis P. , et al., 2007) as an activity aimed at resolving consumer concerns. They claim that when presented with a purchasing scenario, consumers' primary decision is whether to buy or not to buy, whether to spend or conserve money.

Most early consumer behavior theories were heavily influenced by economic theory. These early ideas believed that consumers are intelligent and make reasonable judgments in order to achieve their goals.

Maximizing the advantages, they receive from product purchases (Schiffman & Kanuk, 2004). Researchers eventually established, however, that consumers can make impulsive purchases and that there are other factors that impact consumer behavior. These elements include feelings, the purchasing scenario, as well as family and friends. When these elements are integrated, they produce complete models of consumer behavior that explain features such as cognition and emotion in consumer decision-making (Schiffman & Kanuk, 2004).

Purchasing is one of the phases in the consumer decision-making process from the consumer's perspective. Prior events must be examined in order to have a thorough grasp of this stage. Problem recognition, search and information processing, and alternative appraisal are

examples of consumer decision-making events (Verbeke, Frewer, Scholderer, & Brabander, 2007). These occurrences are included in Kotler's phases of consumer decision-making. According to (Kotler, 2002), the consumer decision-making process contains five stages: problem detection, information search, alternative appraisal, buy choice, and post-purchase behavior.

This illustrates that the buying process begins before and continues after the goods is purchased.

The views of consumer decision-making proposed by (Schiffman & Kanuk, 2004) show a shift from the early notion—based on economic theories—that consumers are rational beings who maximize their satisfaction through the purchase and consumption of products to the acceptance that there are other factors that influence consumer decisions that must be taken into account. Consumers, for example, may make impulsive purchases.

When it comes to purchasing items, they may be impacted by emotions, buying scenarios, mood, family members, and friends. When these elements are integrated, they produce complete models of consumer behavior that attempt to explain fundamental aspects of consumer behavior such as cognition and emotion. Consumer decision-making may be explained using a variety of models.

(Schiffman & Kanuk, 2004) propose a simplified consumer decision-making overview model. Consumer decision making, according to this model, is a three-stage process that includes input, process, and output, as shown in Figure 7.

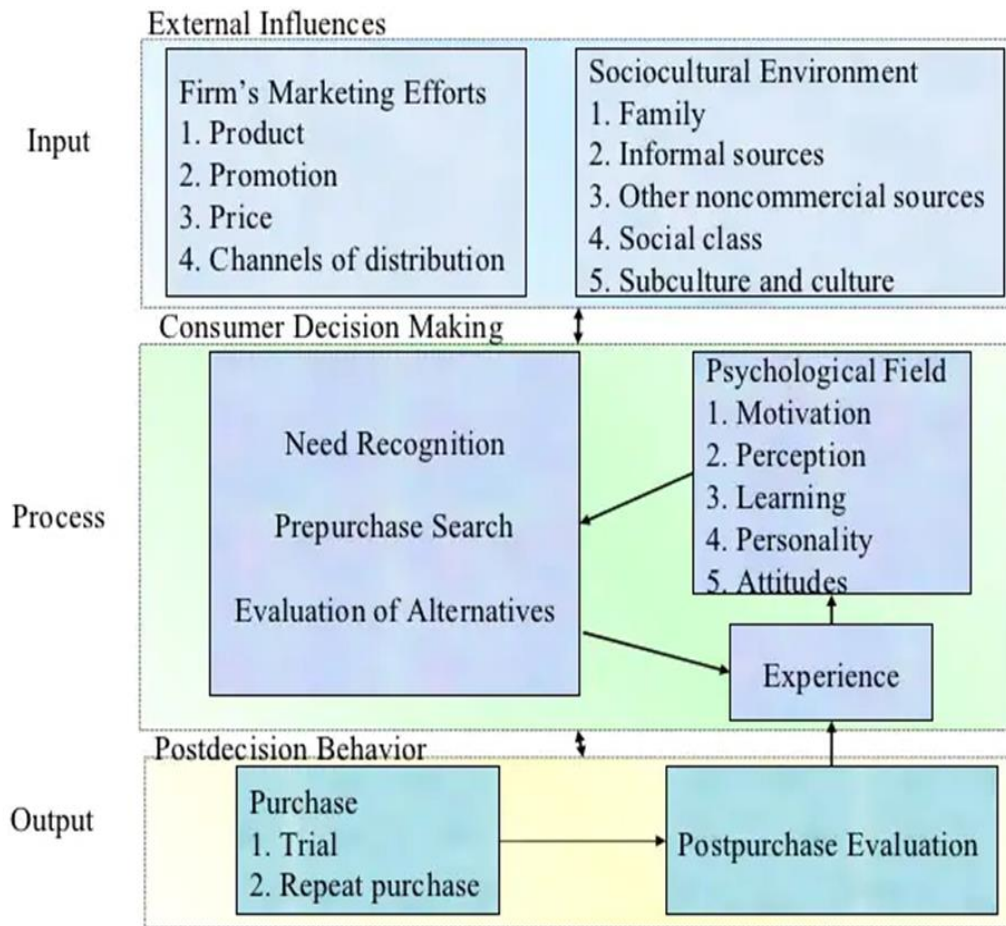


Figure 7 Consumer Decision Making Model (Schiffman & Kanuk, 2004)

The model integrates and simplifies a lot of ideas into one, making the customer decision-making process easier. The input stage is concerned with gathering knowledge about a product from external inputs. External stimuli serve as a source of external information. External cues impact customer values, attitudes, and behavior in response to a certain product (Blackwell, Miniard, & Engel, 2006). In this regard, (Kotler, 2002) claims that marketing and environmental effects both reach the buyer's consciousness, and that certain decisions will be made because of the buyer's traits and decision-making process. The firm's marketing mix activities, which are dominated by marketers, and the sociocultural environment, which is controlled by non-marketers, are the two most important input elements to comprehend.

The double-headed arrow between the input and process indicates that the firm's marketing efforts and the sociocultural environment can be aimed at customers, or consumers can actively seek them out. The model's process component describes how people make decisions. This process is heavily influenced by the psychological realm, which includes motivation, perception, learning, personality, and attitudes. The psychological component is divided into three stages: need awareness, pre-purchase search, and alternatives appraisal (Schiffman & Kanuk, 2004).

When an individual is confronted with a problem, (Blackwell, Miniard, & Engel, 2006), (Schiffman & Kanuk, 2004) and (Solomon, 2002) agree that need recognition happens. In this scenario, the issue is the consumer's perception of an ideal condition vs the present one. Information search, according to (Blackwell, Miniard, & Engel, 2006), is defined as a receptivity to information that solves issues or meets wants rather than a search for a specific product.

According to (Schiffman & Kanuk, 2004), prepurchase search refers to a circumstance in which a customer believes that purchasing or consuming a certain product would result in enjoyment. Typically, before seeking knowledge from other sources, the consumer searches his or her memories, also known as the psychological field. Past experience, which may be thought of as an internal source of data, also plays a role. The more relevant previous experience is, the fewer external data is required to make a purchasing choice. Consumers utilize a combination of external and internal inputs in many purchasing decisions, according to (Blackwell, Miniard, & Engel, 2006), who agrees with (Schiffman & Kanuk, 2004).

The stage of evaluating alternatives is focused on the utilization of product information in order to make decisions regarding alternative items or brands. These goods or brands are sometimes referred to as being in the choice set (Kotler & Armstrong, 2001). The evoked set as

well as the criteria used to make judgments on each of the brands are the two primary pieces of information utilized by consumers when assessing alternatives. A consumer must choose a brand from a list of available options. An evoked set is the name given to this list (Schiffman & Kanuk, 2004).

The evoked set consists of goods that the customer recalls (the retrieval set) as well as those that are conspicuous in the retail environment. The contemplation set is another name for the consumer's evoked set (Solomon, 2002). According to (Kerin, Hartley, & Rudelius, 2009), the consideration set includes all brands that the consumer considers acceptable in comparison to all other brands in the product category. The awareness set, according to (Jobber & Fahy, 2003) is a collection of brands that are perceived to give a solution to the consumer's problem. It is distinct from the inactive and incompetent consumer sets.

The inert set is made up of options that the customer is aware of but would not consider. The incompetent set, on the other hand, includes options that are either "not in the game" or aren't evaluated at all. This means that the consumer is unconcerned with the incompetent set, which comprises of goods or brands that are seen as having no distinct benefit. Consumers' criteria for assessing available product alternatives are influenced by product characteristics (evoked sets). Taste, affordability, and preparation needs, for example, are all factors considered while purchasing frozen meals (food) (Schiffman & Kanuk, 2004).

The model's output component represents post-decision behavior. This implies that the customer decision-making process is limited to the stages of need awareness, pre-purchase search, and alternative appraisal. As a result, the buy behavior and post-purchase assessment are included in the output stage. These two stages are intertwined and aim to improve the

consumer's happiness with a product purchase. Trial purchases and recurrent evaluations are part of the purchasing behavior (Schiffman & Kanuk, 2004).

The need recognition, pre-purchase search, and alternative evaluation stages, according to (Verbeke, 2000), occur before the buy point in the consumer choice process. In contrast to (Schiffman & Kanuk, 2004) approach, (Kotler, Marketing Management, Millennium Edition, 2002) claims that the consumer decision-making process is divided into five stages: problem detection, information search, alternative appraisal, purchase choice, and post-purchase behavior.

#### *2.3.11.1 Consumer Environmental Behavior*

People today are more concerned with the environment; environmentally friendly consumer behavior has been witnessed more in the last decade. Recently, the concept of green consumption behavior which defined the behavior that minimizes any type of negative consumption on the environment in the whole item purchase, item use and even disposal process (Sheng, Xie, Gong, & Pan, 2019). The term "environmentally sustainable behavior" refers to actions that contribute to the long-term viability of the environment (Halder, Hansen, Kangas, & Laukkanen, 2020).

Environmental behavioral intention may be predicted more correctly by incorporating environmental responsibility into the theory of planned behavior model, according to previous research (Hines, Hungerford, & Tomera, 1987) (Stern, Dietz, Abel, Guagnano, & Kalof, 1999). The essential component of the theory of planned behavior, according to (Ajzen, 1991) (figure 8), is behavioral intent. Intentions, according to the author, "capture the motivating elements that affect a behavior; they are signs of how hard individuals are willing to strive, of how much effort they intend to invest, in order to accomplish the behavior."

The individual's attitude toward the behavior, the perceived social pressure to do the behavior (subjective norm), and the perceived ease of executing the behavior (behavioral control) are all thought to influence behavioral intent (Ajzen, 1991) (Monroe, 2003). It's also worth noting that it's thought that perceived behavioral control has an impact on real behavior. (Ajzen, 1991) further claimed that attitude, social norms, and perceived behavioral control are all linked, and that the relative significance of these elements varies depending on the behavior and context.

Even though the theory of planned behavior was not created with environmental behavior in mind, it has been widely used to explain a variety of environmental behaviors (such as recycling, water saving, green consumer behavior, reducing meat consumption.) (Steg & Vlek, 2009); (Chao, 2012).

(Steg & Vlek, 2009) argue that the theory of planned behavior, in contrast to the concept of responsible environmental behavior, is better at describing behaviors with high behavioral costs or severe behavioral restrictions. Another benefit of this concept is its uniqueness (Monroe, 2003); (Chao, 2012). To put it another way, it appears that the theory of planned behavior is better suited to studying specific environmental behaviors rather than a large variety of them.



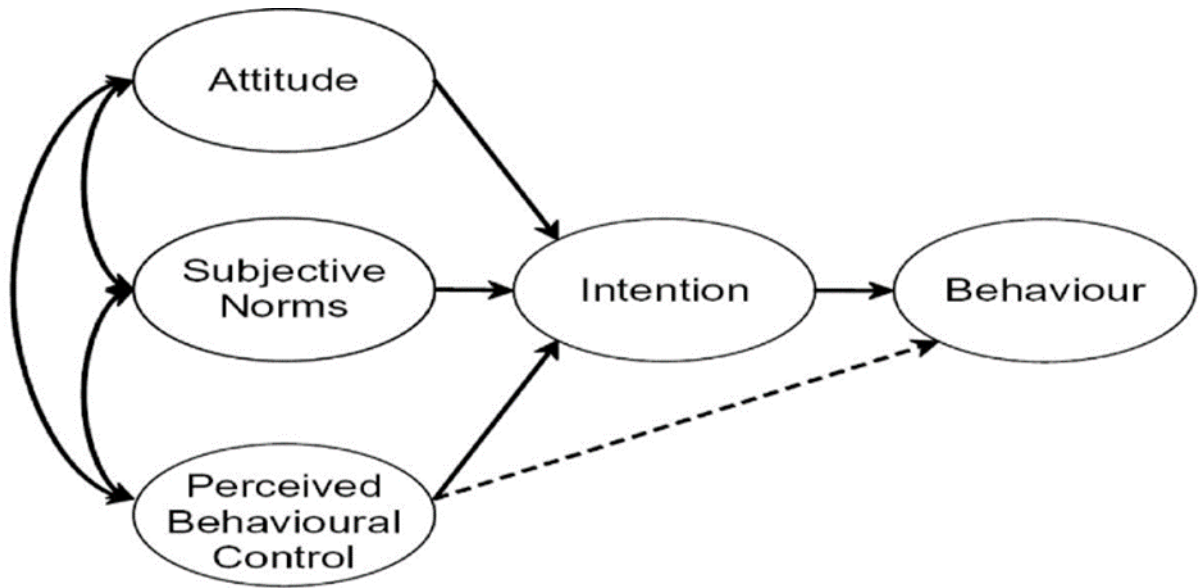


Figure 8 The Theory of Planned Behavior (Ajzen, 1991)

(Hines, Hungerford, & Tomera, 1987) proposed a model of responsible environmental behavior (Figure 9) in which an individual's sense of responsibility is linked to his or her environmental conduct. The personality elements include attitudes, locus of control, and personal responsibility, as seen in the diagram. Information of environmental concerns, as well as a mix of knowledge pertaining to action plans and action abilities, are examples of cognitive factors (Hines, Hungerford, & Tomera, 1987); (Simmons, 1991); (Chao, 2012). These psychological and cognitive variables, according to (Hines, Hungerford, & Tomera, 1987), will impact an individual's desire to act, which, in turn, will influence environmental behavior. However, some environmental circumstances, according to these writers, might interrupt the road to action. Economic restrictions, societal influences, and the ability to choose various behaviors are examples of situational variables.

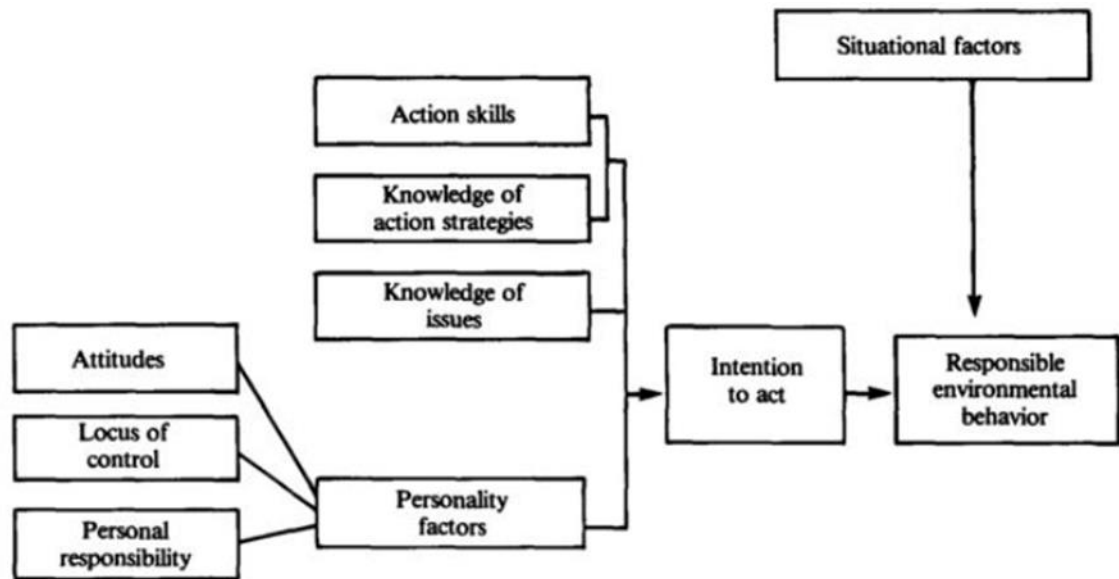


Figure 9 The Model Of Responsible Environmental Behavior (Hines, Hungerford, & Tomera, 1987)

The norm activation model (figure 10), states that a sense of responsibility is defined by the mental state in addition to the moral quality of an individual which drives the person to perform a humane behavior while being under the constraint personal norms (Schwartz S. H., 1977). In detail the model states that when an individual merges social norm into personal norms, the sense of responsibility is directly activated and therefore, humane behavior will be stimulated. Over the last four decades, academics have primarily relied on the norm activation theory as a theoretical framework for explaining pro-social/pro-environmental actions (Denley, et al., 2020) (Rosenthal & Ho, 2020) (Han H. , 2020).

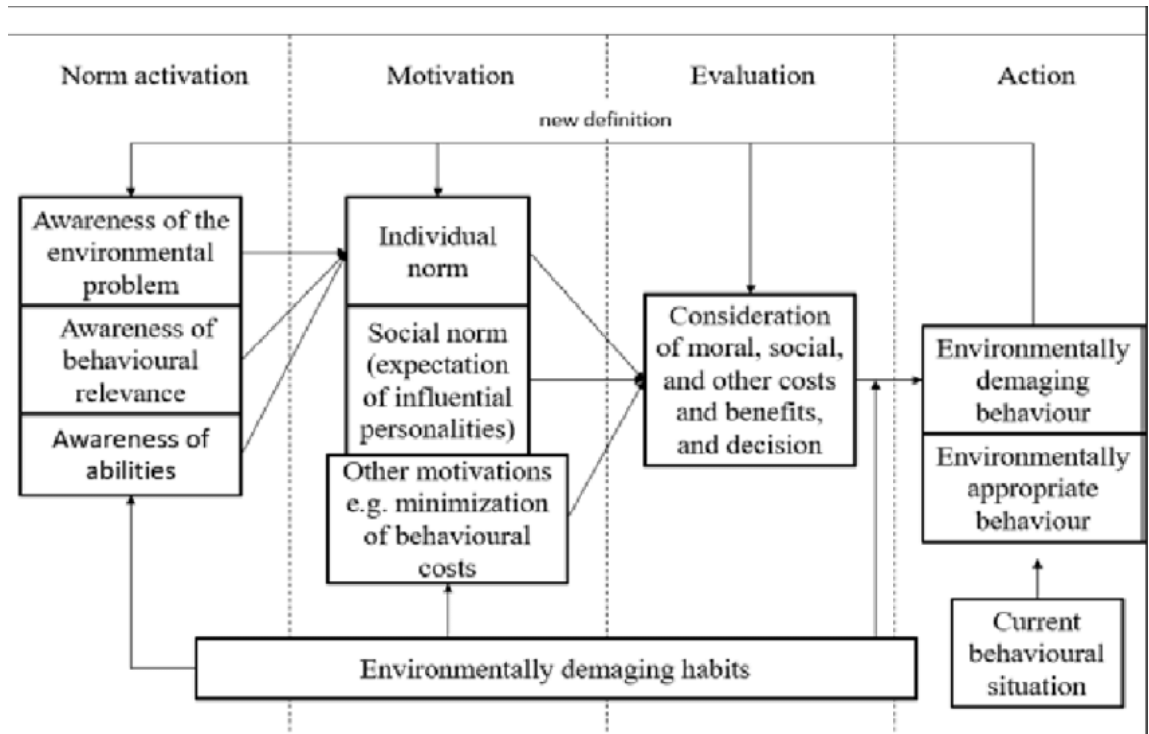


Figure 10 Norm Activation Model (Schwartz S. H., 1977)

In the context of environmental behavior, the environmental responsibility is identified as the basic but most important psychological variable to be considered when the individual chooses to be part of environmentally friendly behavior (Rodrigues & Domingos, 2008). Environmental responsibility will motivate individuals to start acting responsibly towards the environment, and encourage their pro-environmental behavior. The green consumption intention which defines the level of individual care for the environment and ecology, comes directly before the environmental concern of individuals (White & Simpson, 2013). However, it is crucial to note that previous studies about the topic are not clear about the size of the relationship available between green consumption intention and environmental concern. Research suggests that green consumption intention can be positively and directly impacted by the environmental concern (McDonald, Oates, Thyne, Timmis, & Carlile, 2015) (Mohd Suki, 2016). Usually, individuals with higher level of environmental concern react more to environmental problems and take

actual actions for the purpose of environmental protection (McDonald, Oates, Thyne, Timmis, & Carlile, 2015) .

To summarize, environmental concerns are not the only factors that influence purchasing decisions for green products, but green consumerism begins with favorable environmental views. Several studies have attempted to uncover the key elements that influence green consumerism, but no clear model exists to explain the disconnect between behavioral concerns and pro-environmental behavior (Pickett-Baker & Ozaki, 2008). (Tanner & Wölfling Kast, 2003) attempted to explain the discrepancy and concluded that a positive attitude toward environmental preservation is a facilitator for green consumption. Second, environmental information, in this instance action-related knowledge, is a predictor of green consumption (consumers need to know what actions they could take to protect the environment). Consumers who wish to save time shop at regular supermarkets (where green purchases are more difficult to make) rather than organic food stores, which are seen as obstacles to buying green items. However, as (Pickett-Baker & Ozaki, 2008) discovered, generic attitudes are insufficient to lead to environmentally beneficial action, because subjective interests obstruct the connection between attitude and conduct. Consumers who are concerned about the environment expressed worries regarding product performance, as well as difficulty in finding environmentally friendly items.

Firms that are able to not only operate more sustainably, but also examine innovative business models that offer and encourage sustainable consumption, have a better chance of making long-term profits (Kotler, Kartajaya, & Setiawan, 2010).

Instead of focusing solely on the green customer, marketers may broaden their market for the long-term joint benefit of the company and the environment. As companies operate and offer increasingly sustainable products and services, they may desire for customers to identify,

appreciate, and reward their sustainable beliefs and activities in ways that encourage sustainable consumption and optimize the firm's sustainability and strategic business advantages. There are distinctions between green customers' ecologically friendly conduct and their reasons and environmental care, according to their motives and environmental worry. (Moisander, 2007) divided green customers into two groups. First, he identified a tiny number of environmentally conscious customers who are doing everything correctly and who consume in an ecologically responsible manner. This category of customers will be referred to as "heavy green consumers" throughout this thesis since they have significant motivations to consume in a green manner. Second, it was discovered that a substantial portion of environmentally conscious consumers only behave in a green manner when it comes to what they consider to be ecologically friendly; they do not consume in an environmentally responsible manner. These customers do not have the same strong incentives as hard green consumers, and they will be referred to as "light green consumers" throughout this thesis. It may be concluded that "heavy green customers" are more concerned about the environment than "light green consumers."

#### *2.3.11.2 Consumer Environmental Identity and Intention to Buy*

The focus on behavioral intention to consume organic food rather than actual organic food consumption behavior is as in prior studies (Hansen, Sørensen, & Eriksen, 2018) (De Pelsmacker, Moons, & Barvarossa, 2016). The goal of an individual to acquire or consume organic products in the future is referred to as behavioral intention to consume organic products (Arvola, et al., 2008). Because market conditions such as market distance and product availability are more likely to effect real past conduct, behavioral intention is thought to narrate values and identity more explicitly than actual past behavior (Hansen, Sørensen, & Eriksen,

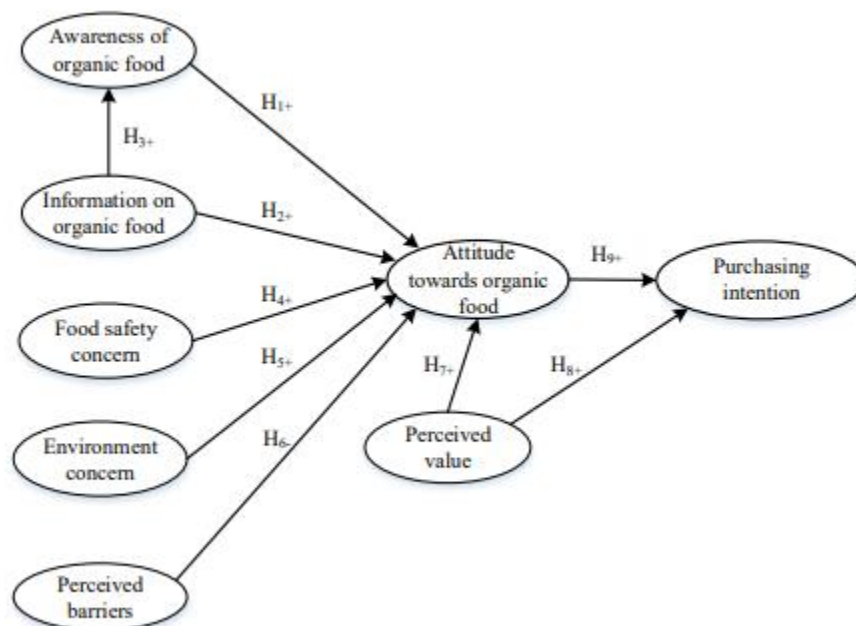
2018). Behavioral intention has been used in several recent studies to investigate consumers' intentions to use hedonic artifacts or embrace green products (Han, Wang, Zhao, & Li, 2017) (Turel, Serenko, & Bontis, 2010). Identity exploration is crucial for predicting pro-environmental behavior (De Pelsmacker, Moons, & Barvarossa, 2016). Several research have demonstrated that self-identity has a substantial role in predicting environmental preferences, intentions, and behavior (Gatersleben, Murtagh, & Abrahamse, 2014) (Sparks & Shepherd, 1992). Individuals act in conformity with their own and others' expectations, according to self-congruity considerations (Sirgy, 1986) and self-perception theories (Stryker, 1987). Self-identity is defined as a collection of roles that a person has played, which leads to a consistent action in support of one's self-concept (Stets & Burke, Identity theory and social identity theory., 2000).As a result, "an individual's image of themselves as a kind of person who behaves in an environmentally friendly manner" (Van der Werff, Steg, & Keizer, 2013) is defined as "an individual's impression of themselves as a sort of person who acts in an environmentally friendly manner." Environmental self-identification contrasts from environmental identity in this context because the latter refers to an individual's perception of environmentalism as an integral part of who he is (Stets & Biga, 2003). Individuals with a higher level of environmental self-identity are more likely to believe they are pro-environmental and, as a result, to act in an environmentally friendly manner. Environmental psychology studies have looked into the role of specific self-identities in predicting behavior that matches those identities. For example, energy-saving self-identity can predict energy-saving intentions (Van der Werff, Steg, & Keizer, 2013), recycling self-identity leads to recycling behaviors (Nigbur, Lyons, & Uzzell, 2010), and environmental activism self-identity leads to environmental activism (Fielding, McDonald, & Louis, 2008). Other sorts of pro-environmental behavior, on the other hand, cannot be described by these distinct self-

identities. Recent research suggests that people may have a broader environmental self-identity that is linked to a variety of pro-environmental attitudes, intentions, and actions. (Kashima, Paladino, & Margetts, 2014) (Gatersleben, Murtagh, & Abrahamse, 2014). Environmental self-identity in general can impact a wide range of pro-environmental behavior. As a result, focusing on this broad environmental self-identity may be a more effective way to encourage pro-environmental behavior.

## 2.4 Models

### 2.4.1 Previous Models

The below models are from previous studies and show different variables affecting the intention to purchase.



*Figure 11 Model 1 (Le-Anh & Nguyen-To, 2020)*

In the above model the authors (Le-Anh & Nguyen-To, 2020) propose eight variables in which some will be relevant to my study. According to their research they found that:

- Organic food awareness (or consumer knowledge) relates to consumers' comprehension of product attributes investigation and recognition. Organic food purchasers had an issue of knowledge about organic foods. Many people are unable to tell the difference between organic and safe foods. This issue has a direct impact on customer attitudes regarding organic food and purchasing intentions. As a result, they found that organic food awareness (or knowledge) is an influencing variable that has a positive impact on attitudes toward organic food.
- Consumers will have a favorable attitude about organic products if they have enough knowledge about them.
- In general, customers require information to improve their understanding of organic products. Information seeking aided in the acquisition of knowledge and boosted consumer understanding (or awareness) of organic foods. As a result, organic food information has a positive impact on organic food awareness.
- Food safety is a significant aspect in customers' organic purchase decisions.
- The environment has gotten a lot of attention recently, and organic food is seen as having less of an impact and helping the environment. As a result, environmental awareness is acknowledged as having a favorable influence on attitudes toward organic food.
- Several perceived limitations, such as a lack of trust and a supply shortage, have a significant impact on people's attitudes regarding organic food. As a result, it is theorized



that perceived organic food limitations have a negative impact on attitudes toward organic food.

- In service marketing study, perceived value was a significant factor. As a result, the perceived value of organic food impacts attitudes toward organic food.
- In addition to influencing attitudes toward organic food, perceived value influences organic food purchasing intentions.
- Organic food purchasing intentions are positively influenced by attitudes about organic food.

Thus from the above model, the following variables will be adopted: awareness, values, knowledge and attitude to have an impact on intention to buy as for the rest variables they will be addressed but under different representation.

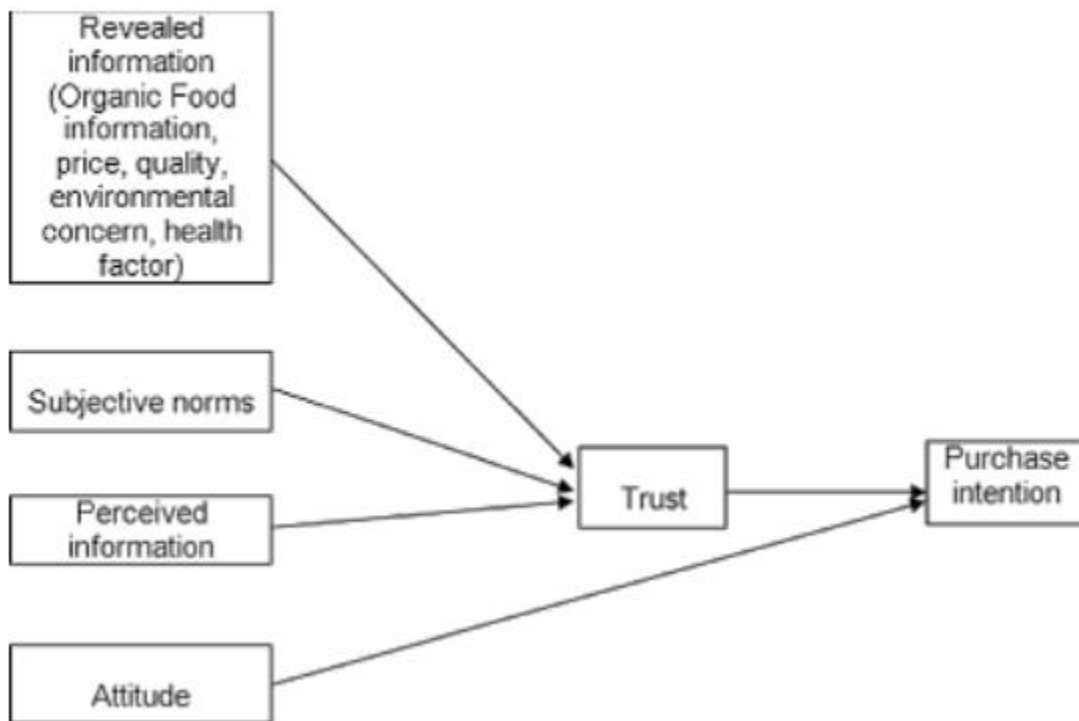


Figure 12 Model 2 (Pandey, Amit Kakkar, Farhan, & Khan, 2019)

The above model has been proposed by (Pandey, Amit Kakkar, Farhan, & Khan, 2019). They concluded the below hypothesis based on their research:

- Organic food items that provide information have a significant positive impact on trust.
- Subjective food-related norms have a considerable positive impact on trust.
- Organic food's perceived value has a significant positive impact on trust.
- Purchase intent is significantly influenced by trust.
- Organic food attitudes have a considerable beneficial impact on buying intent.
- Organic food information that is made public has a large positive impact on purchasing intent.
- Organic food buying intentions are significantly influenced by subjective standards.
- Organic foods' perceived value has a considerable positive impact on buying intent.

From this model information (knowledge), norms and attitude will be adopted however in my model I will first present the effect of norms and knowledge along with other variables on the attitude and then on the intention to buy as I believe and according to my research the attitude is created upon the acquiring of knowledge, awareness, values, beliefs, norms, and health consciousness and not an independent variable to go with the rest.

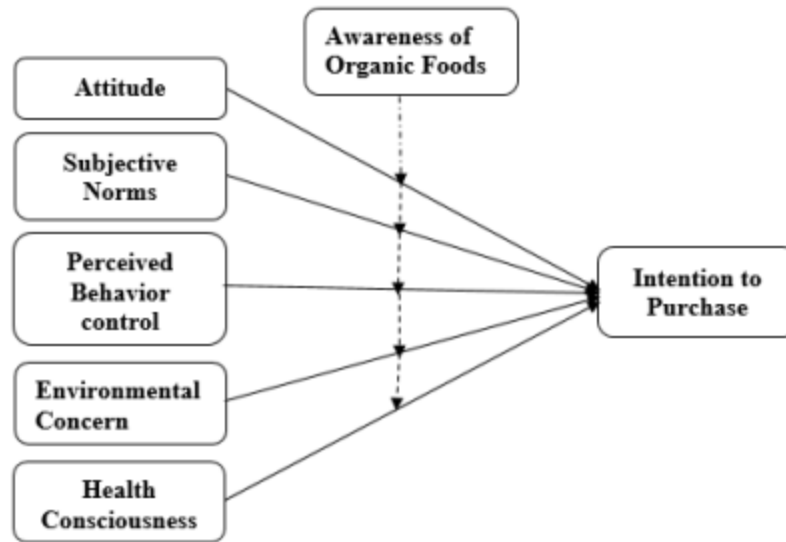


Figure 13 Model 3 (Asif, Xuhui, & Ayubb, 2018)

(Asif, Xuhui, & Ayubb, 2018) concluded the following hypotheses for their research:

- The intention to buy organic food is strongly influenced by one's attitude. The attitude has a positive impact on the intentions to purchase organic food.
- Subjective norm has a major impact on organic food buying intention.
- Consumers' purchase intentions were impacted by perceived barriers and abilities, which influenced reported behavior control. Price and availability are seen to be the most significant barriers to purchasing organic goods. As a result, perceived behavioral control has a considerable positive impact on purchase intent.
- "The degree to which health concerns are integrated into a person's everyday activities" is defined as "health consciousness." When purchasing food goods, health is a major consideration. The more health-conscious shoppers are the more positive their attitude about buy intent becomes.

My research model aligns with this model in different aspects. However, I took the attitude as a dependent variable on all the rest of independent ones while having the awareness as a major

dependent variable. On the other side I disagreed with the authors regarding the perceived behavioral control's impact as in my opinion I believe it rather has a negative impact rather than a positive one since the high price and lack of availability can play a discouraging factor and not an encouraging one.

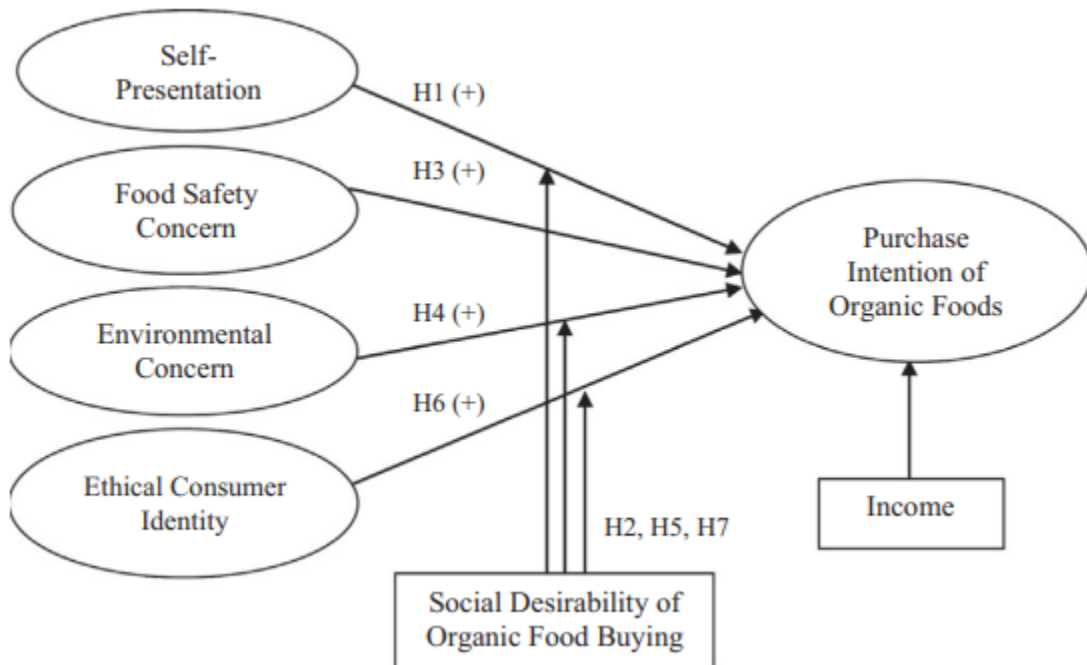


Figure 14 Model 4 (Jiyoung, 2016)

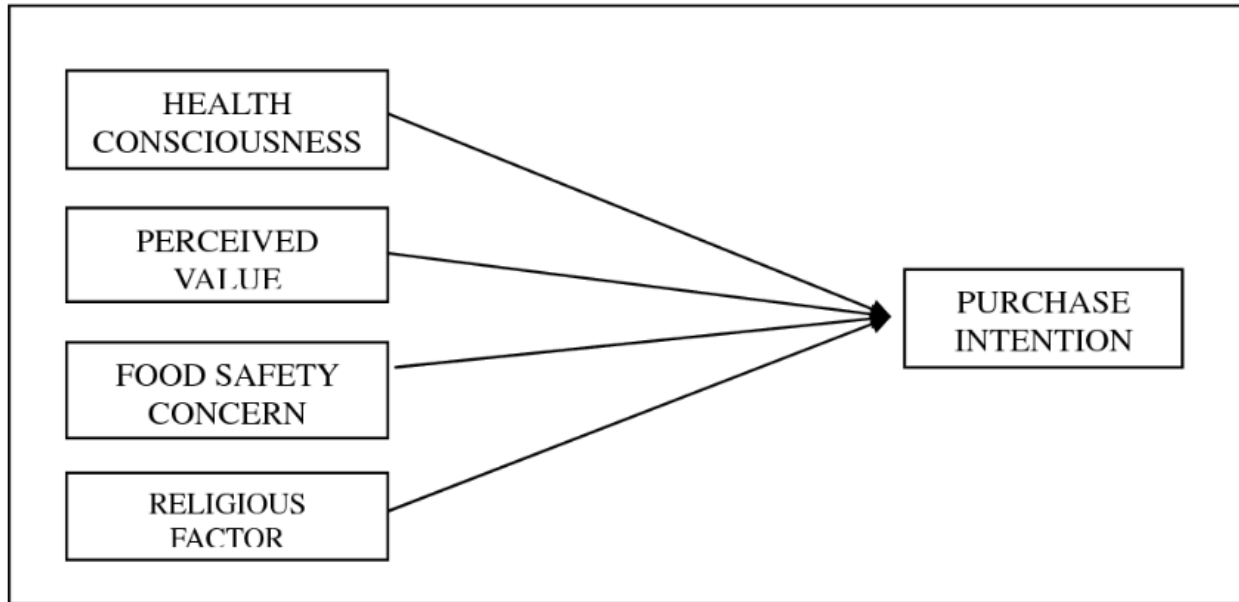
According to her research, (Jiyoung, 2016) concluded the following:

- Images of organic foods are used to depict self-image in terms of how one defines oneself and how one connects with other members of society. Furthermore, when a behavior (e.g., purchasing organic foods) is viewed as socially acceptable, i.e., contributing to societal well-being, people' desires to portray their self-image in this manner might be boosted. As a result, the authors believe that self-presentation will influence elder customers' purchasing intentions for organic foods. & Those who believe

that buying organic food is more socially acceptable would be more affected by the self-presentation motivation on purchase intention.

- Pesticide, fertilizer, and other sorts of artificial additive residues in food have raised concerns about food safety. Concerns about food safety will influence senior customers' willingness to purchase organic foods.
- Environmental concerns have been demonstrated to influence consumers' positive views and/or increased purchase of organic products in research. As a result, environmental concerns will have a positive influence on the purchasing intent of elder customers for organic foods. Moreover, for people who consider organic food purchases to be more socially acceptable, the environmental concerns motive will have a bigger influence on purchase intention.
- The importance of ethical consumer identity in influencing favorable attitudes and purchase intentions for fairtrade and organic foods has been discovered. In the case of elderly customers' purchasing intentions for organic foods, such positive functions of ethical consumer identity will be preserved. Furthermore, the degree to which consumers believe these products have a positive impact on the environment and social well-being might amplify the effect of ethical consumer identity on purchasing intention.

The above model agrees with the rest in many aspects but the two factors mentioned (income and age) are similar to the ones in my model under demographics which I believe are important to study.

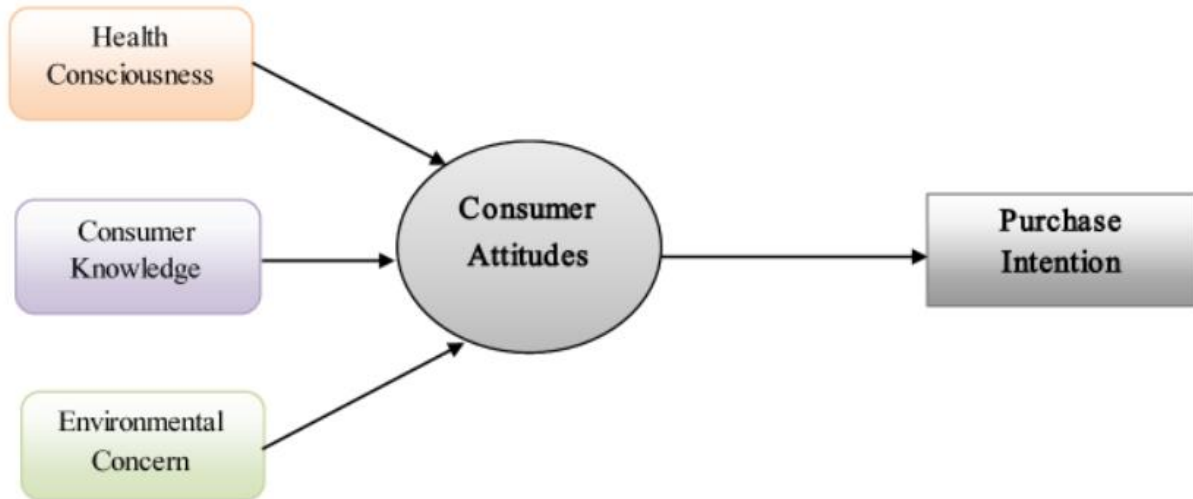


*Figure 15 Model 5 (Rizaimy Shaharudin, Jacqueline Junika, & Shamsul Jamel, 2010)*

According to their study (Rizaimy Shaharudin, Jacqueline Junika, & Shamsul Jamel, 2010) proposed the below hypotheses:

- There is no substantial impact of health consciousness when it comes to organic food buying intentions.
- There is no significant impact in perceived values when it comes to organic food purchasing intentions.
- There is no discernible effect of food safety concerns on organic food buying intentions.
- There is no distinct impact between religious factors and organic food buying intentions.

In my model I disagree with the authors as I believe and according to my research, health consciousness, perceived values and food safety do have an impact on the purchase intention. As for the religious concern I didn't consider it as a variable as no religion encourages or discourages organic food consumption thus, I believe it won't be of an added value to my model.

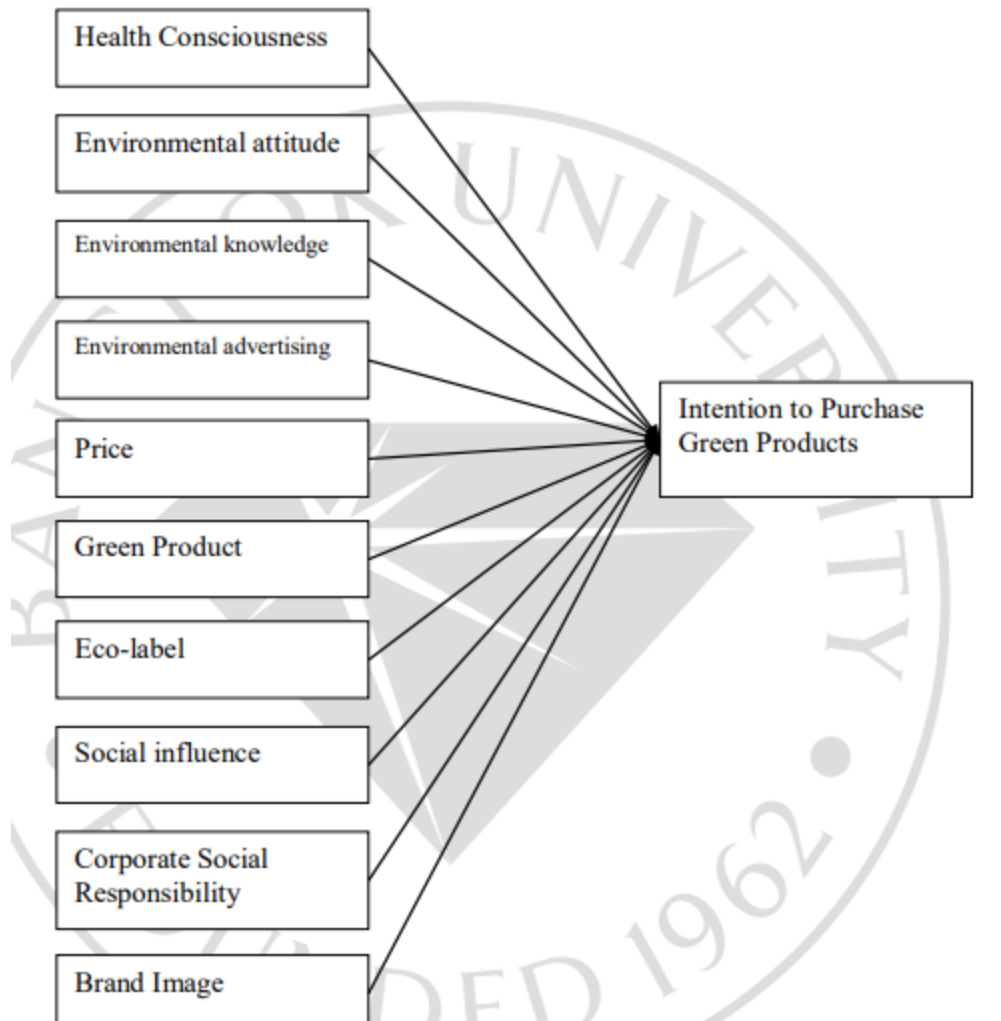


*Figure 16 Model 6 (Nirushan, 2017)*

(Nirushan, 2017) concluded the following for her model:

- The actual purchasing behavior of consumers is a direct outcome of strong intentions and attitudes toward the benefits of organic products.
- According to studies, health is intimately linked to the concept of organic food, and it is the most convincing reason to buy organic food.
- Organic food purchase intent is determined by consumer knowledge.
- Environmental concern has been demonstrated to be a factor in the purchase intention of organic food products.

My model agrees with the above one however in my opinion it lacks some other variables that might affect the intention to buy and is necessary to study such as norms, awareness, the product itself, demographics, price and geographic region.



*Figure 17 Model 7 (Saichao, 2016)*

According to the below research results (Saichao, 2016) prepared this model:

- Environmentally friendly items, according to customers, are useful for a better lifestyle and may aid in environmental preservation.
- Consumers care about environmental concerns, and it creates favorable thoughts about green products. Consumers with this attitude and beliefs will connect environmental issues to their everyday life, work, and family.



- Knowledge of rising environmental challenges such as climate change, hazardous waste problems, water and air pollution, ecological harm that has resulted in endangered protected living species, and so on can help consumers understand their social obligation to nature.
- Environmental advertising is a type of marketing that aims to influence consumer behavior by encouraging them to buy environmentally friendly items and drawing their attention to the benefits of their purchases.
- Price is the amount of value that the market has ascribed to an item or service, rightly or unfairly.
- Green products have better environmental and societal performance.
- Consumers embrace eco-labeling as a means of influencing their green purchasing intentions as part of a green product promotion strategy.
- Because young customers are naturally peer-oriented, green marketers should address the social influence factor.
- CSR is when a corporation volunteers to accept responsibility for long-term development that benefits the economy, society, and environment while adhering to the legal foundations.
- The corporate image is a filter that affects how people perceive the company's operations.

My thesis model has several factors like the above however, this model focused on the marketing aspect as well (advertising, brand image and eco-labeling). Since my model is concerned with the intention to buy from proximity I intend to focus more on the consumer and product characteristics to have a more accurate result.

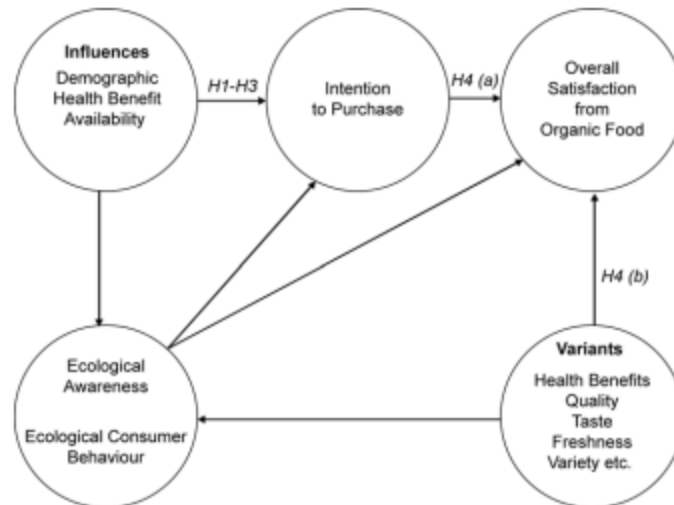


Figure 18 Model 8 (Paul & Rana, 2012)

(Paul & Rana, 2012) model suggested the below hypotheses:

- Various demographic characteristics influence the choice for organic food.
- Organic food is purchased by consumers for its health benefits.
- When it comes to organic food, availability is crucial.
- Organic and inorganic meals provide significantly different levels of total pleasure.
- The amount of satisfaction with organic food attributes varies.

My model agrees with (Paul & Rana, 2012) as it mentions the demographic variables, product attributes awareness and health consciousness. The availability will be studied in my model based on the geographical location as in the literature, the geographical locations in Lebanon are described and distinguished according to the availability of organic and environmentally friendly products.

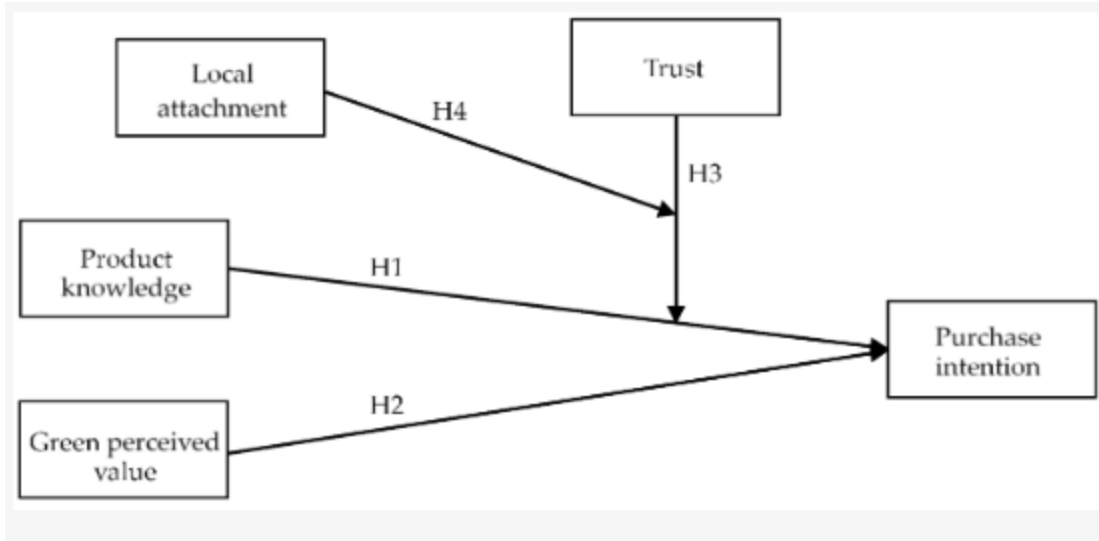


Figure 19 Model 9 (Ma & Chang, 2022)

According to past research and findings (Ma & Chang, 2022) concluded the below:

- Product knowledge has a favorable impact on customers' purchasing intentions and actions. As a result, this study concluded that product information provided through farmers' perspectives on food and agricultural education at the farmers' market will influence consumers' purchase intentions.
- Consumers' buying intentions are frequently favorably influenced by green perceived value. As a result, this study concluded that customers' perceptions of green value at the farmers' market will influence their buy intentions.
- Not only does trust influence product knowledge, but it also influences consumer buy intentions. As a result, this study concluded that consumers' trust in farmers and the agricultural goods they sell will improve the link between product knowledge and purchase intent.
- The influence of local connection on product knowledge is positive. Furthermore, the intensity of an emotional bond enhances buying intentions and actions. Moreover, the

amount of trust might interfere with local connections. As a result, the researchers investigated if local connection might improve the link between trust, consumer product knowledge, and buy intent.

The variables mentioned in the model are all covered in my model; however, trust and local attachment will be studied when studying intention to buy from proximity as when studying proximity these aspects among others are explored.

#### **2.4.2 Theories Adopted as a Measure Scale**

The goal of this study is to look at the factors that influence organic food buying intentions from proximity. "Attitude toward behavior, subjective norm, and perceived behavior control may all be used to predict intent to conduct various types of action with good accuracy". The theory of planned behavior, which includes these three elements, is a well-established theoretical framework (Ajzen, 1991). In social and psychological research, the theory of planned behavior has been widely accepted and applied to assess consumer behavior (Shah Alam & Mohamed Sayuti, 2011). Consumer intentions have been explained using the theory of planned behavior. In the retail food industry, its broad applicability makes it a useful model for determining customer preferences in the food sector (Kim Y. G., 2014). Each of the theory's primary categories is assessed using the Theory of Planned Behavior: attitude, perceived norm, perceived behavioral control, and intention.

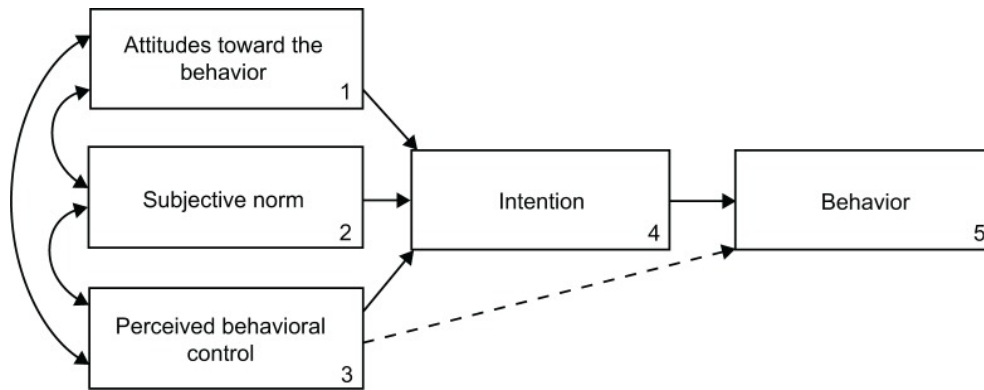


Figure 20 Theory of Planned Behavior (Ajzen, 1991)

Moreover, the Lancaster consumer demand theory will be of great use in my study. Customer demand is traditionally studied in terms of consumer choice under budget restrictions, with preference ordering utilized to optimize utility as prices vary. There is no way to use information on the qualities of commodities in this type of study. (Lancaster K. , 1971) presented a different theoretical approach based on the idea that all things have qualities or features that buyers want, not the items themselves. Consumers, for example, are interested in the nutrients and tastes in food rather than the food itself. Instead of using the usual theory of consumer demand, we applied the Lancaster consumer demand model to analyze organic food demand. The nature of organic food items is one of the factors that led to this decision. Organic and conventional food products are both accessible on the market. Organic foods, on the other hand, have certain distinct properties that distinguish them from conventional foods. Organic food items have specific qualities that distinguish them from conventional foods. Those customers who perceive and appreciate the credibility aspects of organic food items (healthy, environmentally friendly, etc.) are more likely to purchase organic food goods. In practice, customers compare not just the visible aspects of organic food products (such as search and

experience factors), but also the unobservable ones before choosing organic over conventional. (Lancaster K. 1., 1966)

## **2.5 Literature Review Conclusion**

Environmental challenges are one of the most pressing topics in the twenty-first century. Technological progress, demographic growth, and irrational use of the Earth's resources have culminated in an ecological catastrophe that necessitates immediate action at all levels, from local to international. To overcome world challenges, international collaboration must be deployed. According to modern science, humanity now lives in a dying planet as a consequence of a brutal natural disaster that is escalating into a civilization-wide crisis (Kochurov, 2014). The growing green movement, the number of environmental authorities in various countries, and the expanding environmental protection technology industry all mean that humanity has finally recognized the ecological threat (Hansen J. , 2004).

Nowadays, businesses are putting more effort into focusing their competitive advantage on networking with other businesses. Many businesses have sought to strengthen their supply chain management (SCM) in order to reduce costs and improve efficiency. In an organization's direct supply chain, (Ballou, 2004) addressed two perspectives on logistics: inbound logistics (raw material management) and outbound logistics (distribution of products). The key goal of GSCM is to incorporate environmental thinking into decision-making from the research and production phase to the post-disposal phase of materials, a process known as "closing the loop" (Handfield, Sroufe, & Walton, 2005) (Simpson & Power, 2005). Before putting their goods on the market, manufacturers must understand the societal, economic, and environmental conditions that must be addressed in the supply chain.

To address social, economic, and environmental problems, short food supply chains (SFSCs), a concept invented by (Marsden, Food matters and the matter of food: towards a new food governance? , 2000) is examined. A short supply chain is one with a small number of economic operators who are dedicated to collaboration, local economic growth, and strong regional and social links between manufacturers, processors, and customers.

The exchange of data and information between intermediaries in the agri-food network are, consequently, the fundamental variables supporting the seriousness and sustainable advancement of the SFSCs. It is fundamental for little farms and agrarian makers to collaborate inside coordinated short chains to deliver an adequate number of items and to make a similar approach with respect to the characteristics and quality of products.

Proximity is a key aspect of short food supply chain. Whether geographic, social, cognitive, institutional or organizational, proximity reduce environmental impact, ensure fresher products, support local economies and promote food transparency (Kneafsey, et al., 2013).

Consumers are becoming more aware of ecologically friendly production and distribution methods (Monteiro, Levy, & Claro, 2010), and they want to know where their food comes from (Seyfang, 2008) (Zagata, 2012). The food items are distinguished from their retail equivalents by their transparency and domestic origin (Zagata, 2012).

Consumers can easily follow the entire process of local food production from farm to table, which alleviates ethical and environmental concerns about food production. In terms of environmental advantages, the local food economy minimizes food transportation distances while also lowering carbon emissions. Meanwhile, it encourages farmers to switch to organic

farming, which is more ecologically friendly and increases the demand for organic food among consumers (Abate, 2008).

Consumers have more access to local food production, which improves the food's health and security (Brown, 2002). Farmers in SFSCs currently have individual experiences with selecting the quality of raw materials and keeping an eye on the production process. As a result, in the vast majority of situations, microbiological hazards may be managed. Farms may minimize the cycle of turnover by using a shorter chain and a smaller scale, and customers can acquire food goods quickly after they are produced. Cross-contamination is less likely on smaller farms since there are fewer types of food produced. Smaller farms also have a history of ensuring food safety and quality (Verraes, et al., 2015). On the other hand, some farms produce both fresh plants and animals, which makes cross-contamination through irrigation water or crops more likely (Verraes, et al., 2015). In addition, the farmers' capacity to prevent microbiological dangers may be jeopardized due to a lack of expert food safety knowledge.

Because local foods are often less processed and fresher, and there is a high level of transparency, local food minimizes the risk of food safety and security for consumers. Consumers may either visit their production locations or speak with producers to learn more about locally farmed foods (Brain, 2012).

According to research, people visit farmers' markets for a variety of reasons, including access to fresh local foods, support local agriculture, improve the local economy, assist local farmers and seek better food quality (Conner, Montri, Montri, & Hamm, 2009) (Baker, Hamshaw, & Kolodinsky, 2009).



Consumers are also interested in SFSC for food safety and security, pesticide-free products, and social connections. Other variables may alter depending on the location or the user; for example, convenience is crucial to some consumers but not to all. A portion of consumers were likewise worried about a product's pricing. A similar phenomenon was discovered by (Conner, Montri, Montri, & Hamm, 2009), who discovered that certain customers judged local foods to be of excellent quality and were prepared to pay extra for the benefit. However, some customers believe that local items should be cheaper. Some customers are also motivated to purchase at farmers' markets by a specialized lifestyle, such as cooking, baking, or a particular interest in certain sorts of food.

Consumers' desires for fresh, high-quality, and pesticide-free meals were cited by (Johnson & Endres, 2011) as the main motivations for choosing locally produced food goods. The second goal is to reduce transportation emissions while minimizing the environmental impact of the manufacturing process. Third, farmers' transportation, processing, and packaging costs should be reduced, allowing them to increase their profitability.

Consumers are considered one of the main stakeholders for any company and seeking satisfaction of their needs is crucial to ensure profits and business sustainability. People today are more aware of the environment, and environmentally conscious customer behavior has become more prevalent in the last decade. Recently, the term "green consuming behavior" was coined to describe behavior that minimizes any harmful impact on the atmosphere during the whole item buying, usage, and disposal period (Sheng, Xie, Gong, & Pan, 2019).

In order to understand what drives customers to buy from proximity, consumers' environmental attitude, behavior, knowledge, values, norms, beliefs, sensitivity, relationship with producers, product quality attributes, demographics and products' prices will be studied.

Attitude is defined by (Schiffman & Kanuk, 2004) as a favorable or negative predisposition that guides customers' behavior in a particular way. In their consumer-oriented definition, they assert that the term object refers to anything specific in consumer behavior, such as a product, product category, brand, or marketing. Although there are a variety of measuring tools available, the New Environmental Paradigm (NEP) scale is the most commonly used to assess environmental attitudes (Dunlap & Van Liere, 1978); established the New Environmental Paradigm (NEP) scale to assess respondents' attitudes about conserving natural balance, development limitations, achieving a steady-state economy, and the need to reject an anthropocentric perspective.

Moreover, (Kiełczewski, 2001) defines ecological awareness as "a person's attitude toward the natural environment, as well as a collection of knowledge and thoughts about it, as well as a system of values that this person applies to it in his action". Environmental awareness and phrases like environmental consciousness and environmental care are sometimes used interchangeably. According to (Ham, Mrćela, & Horvat, 2016), environmental awareness is defined as "the attitude toward the environmental ramifications of human conduct. Environmental awareness, on the other hand, "reflects people's concern for and comprehension of the environmental consequences of their actions" (Fu, et al., 2019).

The values, beliefs, and norms hypothesis (Stern, Dietz, Abel, Guagnano, & Kalof, 1999) was proposed to explain why people support social movements. They were especially enthusiastic about the environmental movement. The theory employs a number of concepts to describe environmental behavior. The three value types (biospheric, altruistic, and egoistic) are assumed to influence perceptions about human-environment ties, which in turn shape attitudes about the negative consequences of such a connection and the individual's responsibility to take

action. Personal norms will be activated as a result of these concepts, which could lead to a variety of environmental behaviors.

On another note, (Röhr, Lüddecke, Drusch, Müller, & Alvensleben, 2005) found that consumers are increasingly interested in learning more about the origins, safety, and wholesomeness of the food they buy. They also want to communicate directly with food suppliers, reducing the number of intermediaries in the food supply chain and boosting food traceability and faster market transfer between producers and customers.

Moreover, environmental, or ecological concern is a concept that allows people to be classed according to their level of worry for the environment. It has both attitudinal (the individual must show concern for ecology or the environment) and behavioral components (the individual must also exhibit conduct that promotes the maintenance of the ecological system components (Takala, 1991) (Sjoberg, 1989).

Over the past few years, the demand for consumers to be able to trace the food they eat has caused their desire to know how, where, and by whom food is produced to develop. Short chains are seen to effect customers' purchasing decisions and create a sense of trust when there are direct connections between the actors, and SFSCs are well known for reuniting farmers and consumers (Kirwan, Alternative strategies in the UK agro-food system: interrogating the alterity of farmers' markets. , 2004).

Studies showed that females, highly educated consumers, and older people are more inclined towards environmental awareness (Roberts, 1996) (do Paco, Raposo, & Walter, 2009). (Dietz, et al., 2002) (Eagly, 2009) (Luchs, et al., 2012).

Throughout the decision-making process, price is an important consideration (Ang, Leong, & Kotler, 2000). When determining the price level that consumers can pay for premium utilities and green goods, consumer income is the most important thing to remember. Premium services and goods are typically much more costly than basic services and products. According to studies, low-income people cannot afford quality green goods, but this does not rule out the possibility that low-income people are interested in green products. This suggests that, despite their favorable attitudes toward green consumption, consumers will not necessarily purchase environmentally friendly goods due to their high cost (Gleim, Smith, Andrews, & Cronin, 2013).

Regarding theories adopted as a measure scale, The theory of planned behavior (TPB) is a potential concept that connects customer environmental attitude with intention to purchase from proximity. According to the TPB, three variables—attitudes, subjective norms, and perceived behavioral control—have an impact on behavioral intentions (Ajzen, 1991).

Consumer environmental attitudes, which refer to the individual's ideas and values towards environmental issues, can be used to measure attitudes in the context of purchasing food locally. As buying food locally is in line with the concepts of sustainability and environmental responsibility, a positive attitude toward the environment would result in a favorable attitude about doing so.

The apparent social pressure to exhibit a behavior is referred to as subjective norms. This could include the impact of family and friends who emphasize local and sustainable food production in the context of purchasing food close to home. The intention to purchase from proximity would rise if there were a favorable subjective norm.

The term "perceived behavioral control" describes how a person feels they are able to carry out an activity. In the context of purchasing food close to home, this may include elements like accessibility and cost of available local food options. The intention to buy from proximity would rise if behavioral control was viewed as being more powerful.

Another theory that will be adopted is the Lancaster consumer demand theory, a framework for comprehending consumer behavior and decision-making in the context of buying locally is provided by (Lancaster K. , 1971) . It implies that a number of variables, such as the product's price, the consumer's income and budget, the consumer's likes and preferences, and the attributes of the product itself, affect consumer demand. When researching the intention to buy from proximity, it's crucial to take into account how these variables might be impacted by proximity, such as the possible price impact of lowered transit expenses. Additionally, it stresses how crucial consumer preferences are in determining consumer demand. It's crucial to comprehend the variables that affect consumer preferences for food obtained locally, such as freshness, taste, and perceived health benefits, while researching buying from proximity.

## **CHAPTER THREE: LEBANON AS A CASE STUDY**

Lebanon is a small Mediterranean country covering a complete region of 10,452 km<sup>2</sup>. Its populace has reached around 6 million individuals with a density of 575 people km. Besides, refugees establish 30% of Lebanon populace bringing about the most elevated per capita centralization of refugees on the planet (UNHCR, 2016).

Lebanon is portrayed by a Mediterranean atmosphere alongside fertile soils and an overall plenitude of water (FAO, 2014). In spite of these ideal climatic conditions and accessibility of regular assets, agricultural creation has diminished during the most recent years, particularly because of the control of farming terrains by Syrian refugees (MOE, 2015).

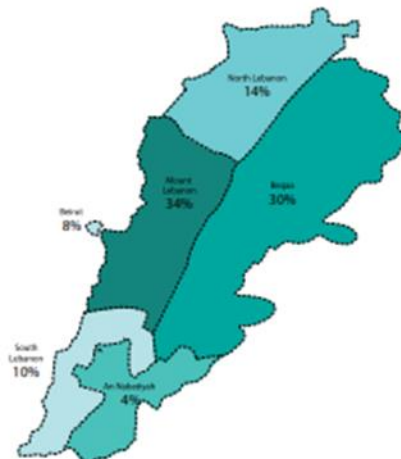
Lebanon's climate is characteristic of the Mediterranean region, with four distinct seasons that vary between rainy and dry periods. Temperatures will rise from about 1°C on the coast to 2°C on the mainland by 2040, and by 2090, they will be 3.5°C to 5°C higher, according to the PRECIS model. Rainfall is also predicted to fall by 10-20% by 2040, and by 25-45% by the year 2090, compared to the present. This will lead to drier and hotter environment (MOE U. , 2011).

Lebanon is a self-governing nation with a centralized political and administrative system. The Lebanese Parliament (128 seats) and the Council of Ministers, which issue regulations in the form of decisions and decrees, are involved in the decision-making process. The Environmental Protection Law (law no. 444/2002) serves as Lebanon's overarching legislative framework for environmental protection

and the National Council for the Environment (NCE) led by the Ministry of Environment is the one accountable for creating environmental policy and planning.

The agri-food sector is one of the significant contributors of the Lebanese economy. In 2018 (most recent accessible figures) it produced an expected 38% of the industrial sector output and around 2.9 of the nation's GDP, with an expected size of 1.6 Billion USD (Industry, 2018)

According to the Directory of Exports and Industrial firms in Lebanon (2017-2018), this sector is characterized by skilled labor who graduate yearly from colleges offering food quality and agro-industrial degrees. Agrofood companies represent the biggest portion of industrial enterprises in Lebanon, with 22% of organizations or around 1401 organizations associated with agro-industrial activities. Agrofood exercises are generally moved in Mount Lebanon where 43% of agro-industrial companies are found. The Bekaa district positions second as far as centralization of companies (18%), trailed by North Lebanon (11%), Beirut (8%), South Lebanon (8%), Nabatiyeh (6%), Baalback El Hermel (5%) lastly Akkar (1%) (Figure 21) (Lebanon, 2017-2018).



*Figure 21 Distribution of Agrofood Companies by District % / 2010 (Lebanon, 2017-2018).*

The most noteworthy portion of agri-food foundations is associated with the creation of dairy items and confectionary with almost 18% of absolute agri-food undertakings for every area. Baked products are important in the eating routine of Lebanese families, and along these lines bread shops are representing 16% of absolute agri-food organizations. Different areas of action with a high portion include processed food with 10% of agri-food foundations, trailed by the processing and preservation of grain and starch items with 9% of absolute enterprises (Figure 22) (Lebanon, 2017-2018)

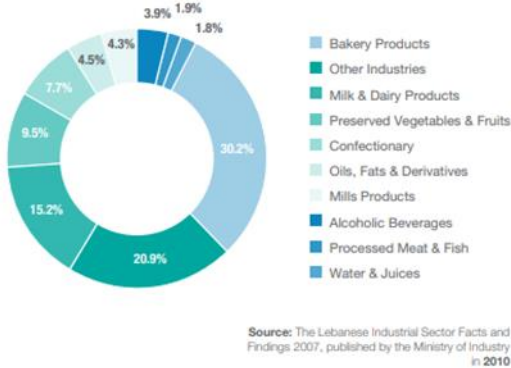


Figure 22 Agri-food Enterprises in Lebanon by Type of Production % | 2010 (Lebanon, 2017-2018)

### 3.1 Impacts of climate change

Changes in temperature and rainfall directly impact agriculture, making it one of the most vulnerable economic sectors to climate change. The limited supply of water and land resources



in Lebanon, combined with rising urbanization, adds to the country's potential growth challenges. In general, the direct impacts of climate change on agriculture are primarily related to reduced crop yields due to droughts, floods, or any extreme weather conditions.

The effects of human-caused carbon dioxide and other greenhouse gas emissions have been recorded by The Intergovernmental Panel on Climate Change (IPCC) scientific bodies (GHGs). Changes in climate, such as rising average temperatures, more severe weather events, rising sea levels, and ocean acidification, as well as the habitats, animals, human structures, and other aspects of life on Earth, are among these impacts. They've also modeled future emissions and their effects under a number of scenarios based on multiple assumptions about how humans can rein in the activities that cause emissions.

Climate change would cost Lebanon both directly and indirectly, through heat waves, droughts, hurricanes, and other natural disasters: Figure 23 depicts the trajectory of global greenhouse gas GHG emissions predicted by the Intergovernmental Panel on Climate Change (IPCC) through 2100 for the highest-emissions scenario (called RCP8.5) and the lowest-emissions scenario (RCP2.6) (IPCC). The predicted changes in global average surface temperature are depicted in Figure 24. Temperatures will rise on a near-linear trajectory over the century under the highest-emissions scenario, which reflects a continuation of current trends.. They will rise through the middle of the century under the lowest-emissions scenario before leveling off. Under RCP8.5, average surface temperatures in 2081-2100 will be 4–6°C warmer than they were in 1986–2006, and 2°C warmer under RCP2.6 (IPCC 2014; p. 10). These temperature rises will contribute to a 0.61°C increase between 1850 and 1900 and 1986 to 2005.

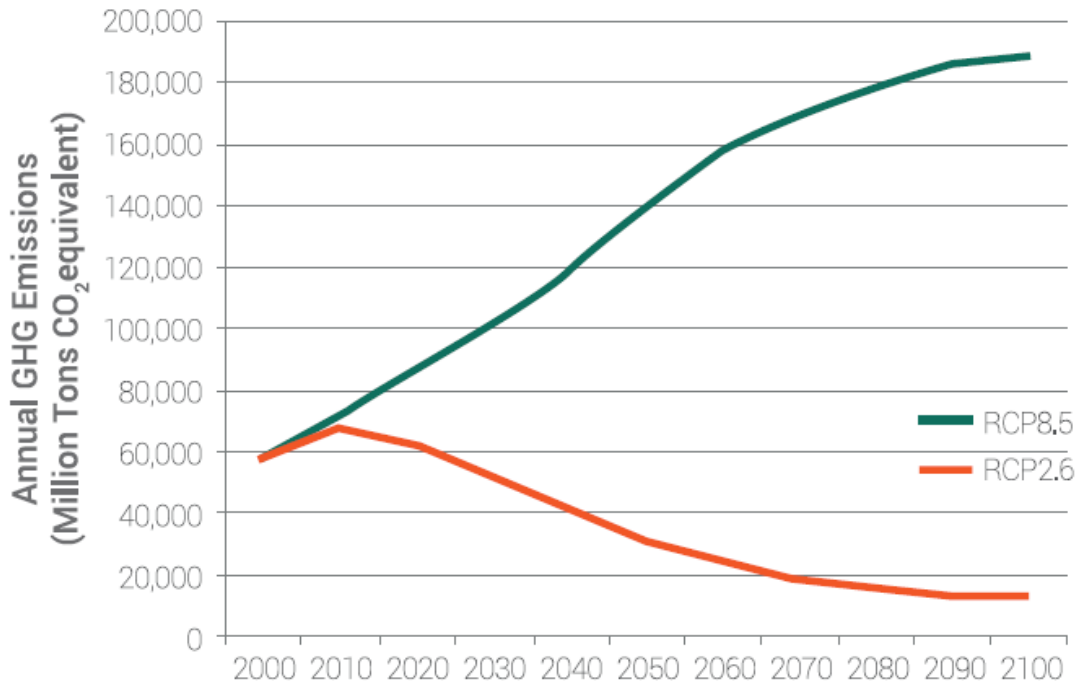


Figure 23 Actual GHG emissions, 2000 and 2010, and projected emissions under RCP8.5 and RCP2.6, 2020-2100 Source / (RCP, 2015) and (Myhre, 2013)

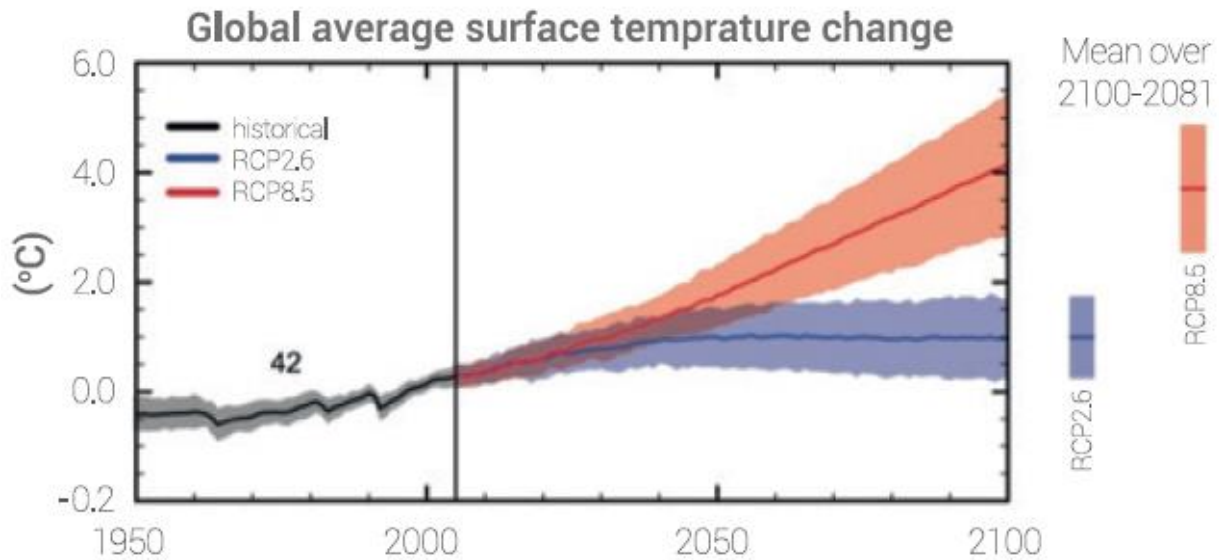


Figure 24 : Observed changes in annual average surface temperature, 1950–2010, and projections under RCP8.5 and RCP2.6, 2020-2100.

As shown in Figure 25, if current GHG emission patterns persist, Lebanon will face both direct and indirect economic costs as a result of climate change. Higher temperatures, changes in precipitation, and severe weather events such as storms will result in direct costs that would reduce agricultural production, harm human health, cause flooding, and cause similar damage to various segments of Lebanon’s economy and society. As direct costs hinder the country’s economic development, indirect costs will emerge. Lebanon’s Gross Domestic Product (GDP) would be reduced because of the slower growth, as would business activity. As a result, employees’ and households’ wages would fall, and government revenues and costs would rise.

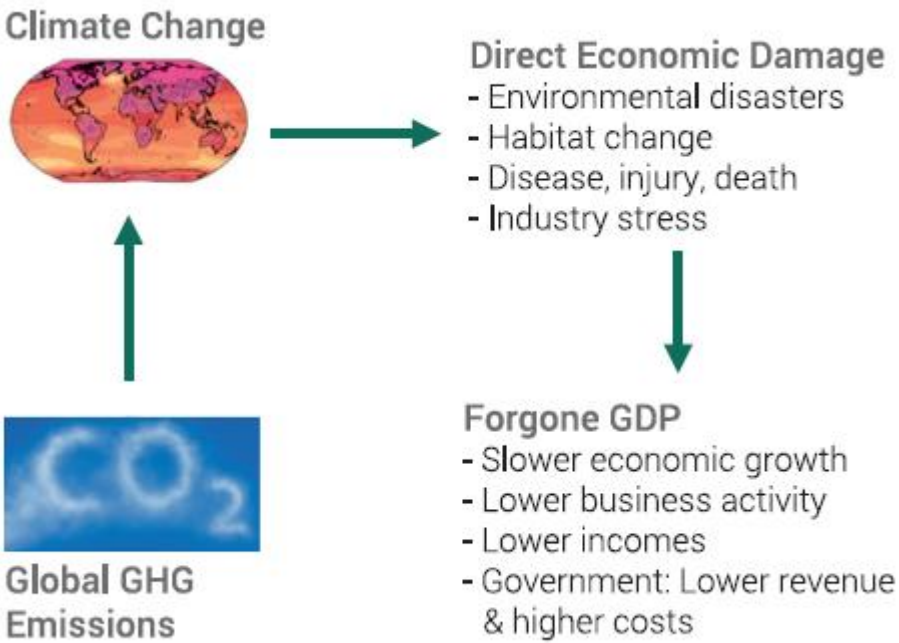


Figure 25: Climate change will impose costs on Lebanon by generating direct economic damage and slowing growth in GDP

Table 4 and Figure 26 show the estimated costs Lebanon will face in 2020, 2040, and 2080 as a result of accumulated global GHG emissions between 2015 and each of those years, according to the IPCC’s highest-emissions scenario. The top line depicts the predicted damage from higher temperatures and other climate changes on agricultural production, human health, flooding, ecosystem productivity,

and other factors in each year. Lebanon will incur costs of around USD 320 million in 2020, USD 2,800 million in 2040, and USD 23,200 million in 2080 as a result of this damage.

The research that underpins the second line acknowledges that these direct effects would slow Lebanon's economic development, as measured by GDP. If current trends continue, global GHG emissions will reduce Lebanon's GDP by around USD 1,600 million, or 3%, between 2015 and 2020. For Lebanon's households, industries, and government, this lost GDP will be a real cost, or a decrease in economic well-being. If current patterns persist through 2040 and 2080, Lebanon's GDP will decline by USD 14,100 million (14% ) in 2040 and USD 115,700 million (32% ) in 2080.

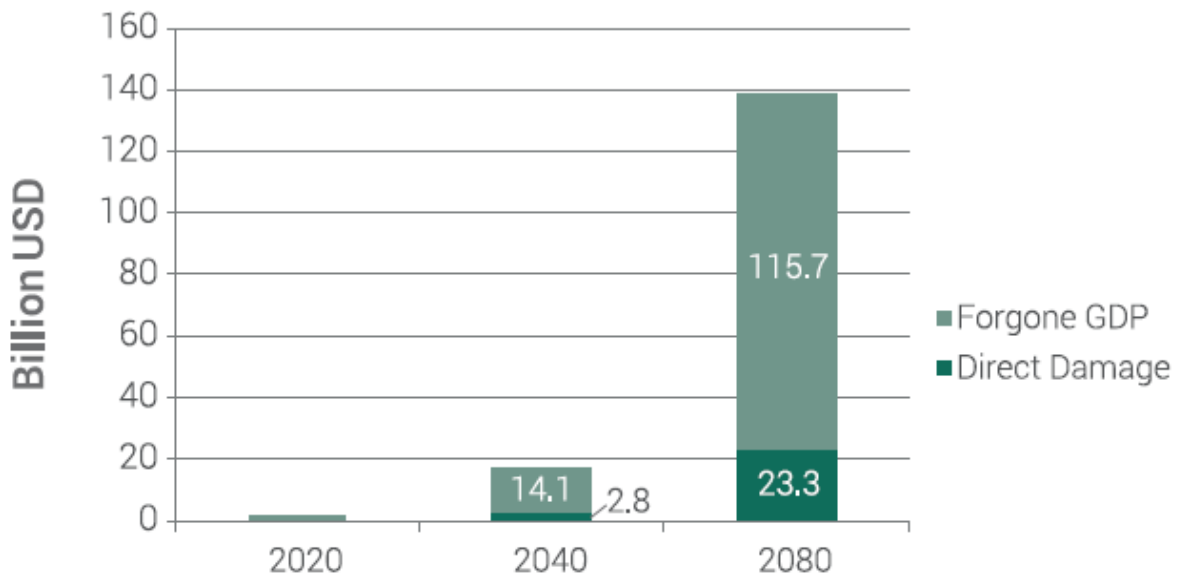
Total costs are estimated to be about USD 1,900 million in 2020, USD 16,900 million in 2040, and USD 138,900 million in 2080. When these totals are divided by the estimated number of households, the average cost per household in 2020, 2040, and 2080 is USD 1,500, USD 13,100, and USD 107,200. If the government's current position in the economy is retained, the overall cost in 2020 will be USD 610 million, USD 5,400 million in 2040, and USD 44,300 million in 2080.

Potential costs	2020	2040	2080
Direct annual damage from drought, etc. in Lebanon (millions)	USD 320	USD 2,800	USD 23,200
Forgone GDP in Lebanon (millions)	USD 1,600	USD 14,100	USD 115,700
Percentage reduction in GDP	3%	14%	32%
Total cost to Lebanon (millions)	USD 1,900 <sup>a</sup>	USD 16,900	USD 138,900
Average cost per household in Lebanon	USD 1,500	USD 13,100	USD 107,200
Government's share (millions)	USD 610	USD 5,400	USD 44,300

Numbers reflect the rounding rules described in the Introduction.

<sup>a</sup> Because of rounding, the total, USD 1,900 million differs slightly from the sum of USD 320 million and USD 1,600 million.

*Table 4 Potential costs in 2020, 2040, and 2080 from the cumulative effects of global GHG emissions in 2015 and subsequent years (2015 USD)*



*Figure 26 :Potential costs to Lebanon from the cumulative effects of global GHG emissions in 2015 and subsequent years*

### **3.1.1 Climate change would cost Lebanon's economy and culture in a variety of ways**

Every individual, family, farm, business, city, and region in Lebanon will pay a price as a result of climate change. Table 5 and Figure 27 summarize the costs for the economy and society segments for which data is available. In general, each segment's cost estimate is built on a distinct basis derived from relevant data or previous research.

Significant costs may arise as a result of the effects of climate change on agricultural production in Lebanon and food prices paid by Lebanese consumers. Higher temperatures, changes in precipitation, rises in soil aridity, and other factors will reduce Lebanon's total agricultural production by about USD 300 million in 2020, reducing the country's overall GDP by about USD 300 million. If current trends continue, potential rises in global food prices could cost Lebanese consumers USD 470 million by increasing food prices and inducing them to eat less food as a result of the higher prices.

Potential cost	2020	2040	2080
<b>A. Costs from impacts of climate change on agriculture and food supplies</b>			
1. Reductions in Lebanon's agricultural production	USD 300	USD 860	USD 2,300
2. Reductions in production of wheat and maize	USD 10	USD 17	USD 28
3. Reductions in fish harvest	USD 13	USD 32	USD 32
4. Increases in global food prices	USD 470	USD 1,700	USD 5,000
<b>B. Costs from impacts of climate change on water</b>			
1. Reductions in agricultural and domestic / industrial water supply	USD 21	USD 320	USD 1,200
2. Reductions in water supply for generation of hydroelectricity	USD 3	USD 31	USD 110
<b>C. Costs from climate-related natural disasters</b>			
1. Increases in droughts, floods/landslides, and storms	USD 7	USD 36	USD 1,600
<b>D. Costs from impacts of climate change on tourism</b>			
1. Reductions in attractiveness of Lebanon's coastal resources	USD 22	USD 160	USD 1,800
<b>E. Costs from impacts of climate change on electricity consumption</b>			
1. Increases in demand for cooling	USD 110	USD 900	USD 34,800
<b>F. Costs from impacts of climate change on human health</b>			
1. Increases in risk of death	USD 47,200	USD 54,700	USD 61,400
2. Increases in risk of illness and disability	USD 177,900	USD 194,300	USD 191,500
<b>G. Costs from impacts of climate change on ecosystems</b>			
1. Reductions in biodiversity	USD 62	USD 150	USD 330
2. Increases in land degradation	USD 29	USD 78	USD 170
3. Increases in sea level	USD 59	USD 140	USD 320
<b>H. Costs from impacts of climate change on society</b>			
1. Increases in violence from higher temperatures	USD 38	USD 840	USD 8,600
2. Reductions in workers' productivity from heat stress	USD 43	USD 160	USD 1,400
3. Reductions in workers' productivity from childhood undernourishment	USD 22	USD 51	USD 280
4. Increases in internal migration	USD 57	USD 130	USD 320

Numbers reflect the rounding rules described in the Introduction.

*Table 5 :Costs that climate change might impose on different segments of Lebanon's economy and society (million 2015 USD)*

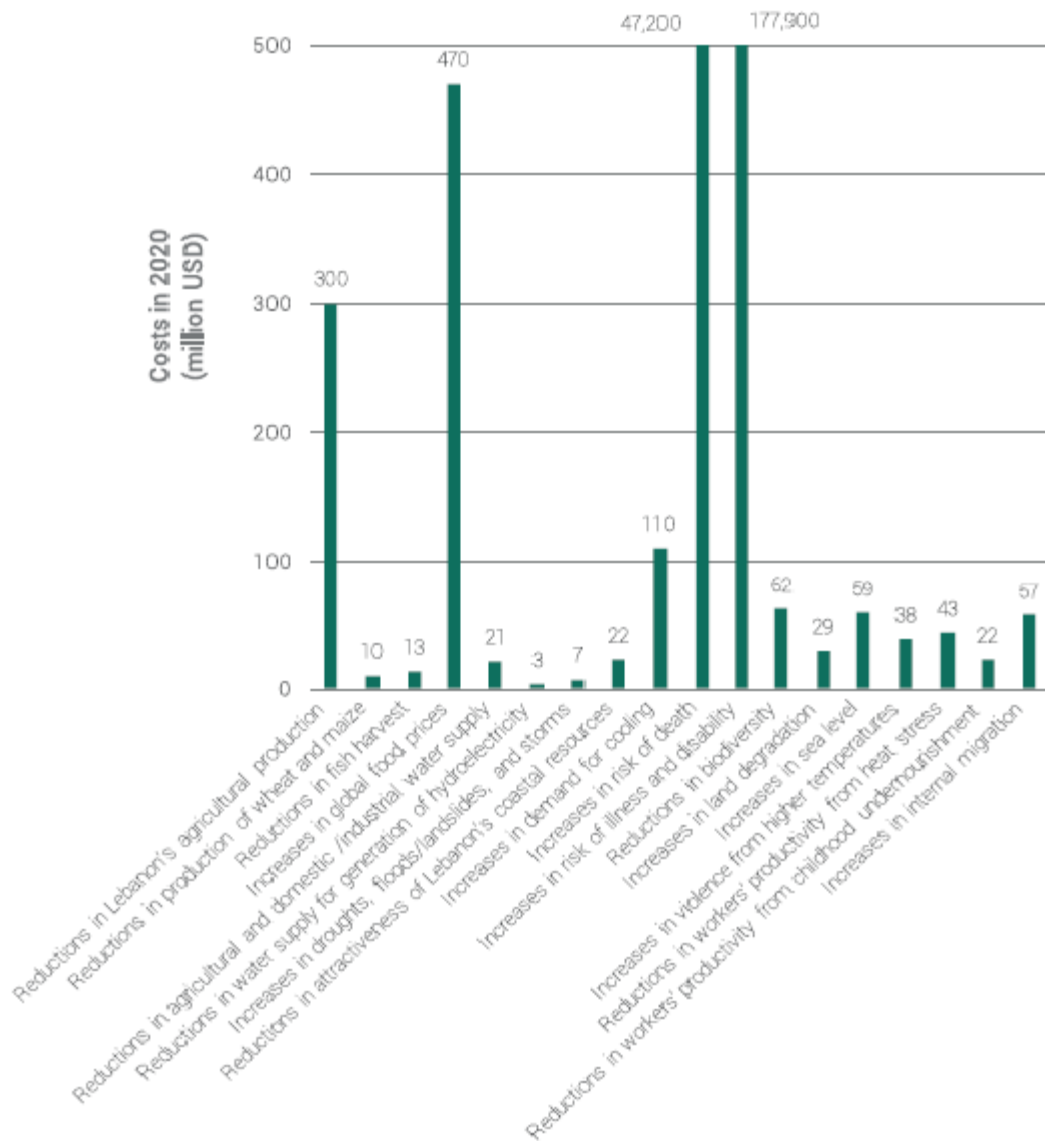


Figure 27 :Costs that climate change might impose in 2020 on different segments of Lebanon's economy and society (MoE, UNDP, & GEF, 2015)

(MoE, UNDP, & GEF, 2015)



## **3.2 Constraints and gaps**

### **3.2.1 Government structure**

Lebanon's legislative body, the Lebanese Parliament (128 seats), is divided into specialized committees, one of which is the Environment Committee. The Environmental Protection Rule (law no. 444/2002) acts as Lebanon's overarching legislative structure for environmental protection and management.

The Ministry of Environment is the UNFCCC focal point and the main national coordinator for climate change. The Ministry of Environment also chairs the National Council for the Environment (NCE), which is made up of officials from seven ministries (the Ministry of Environment, Finance, Interior and Municipalities, Agriculture, Public Works and Transport). Energy and Water, and Industry) as well as seven non-governmental organizations (Order of Doctors, Order of Engineers and Architects, Bar Association, Association of Banks, Association of Insurance Firms, representative of Non-Governmental Organizations (NGOs), and representative of the academic sector). The NCE has the responsibility of approving environmental policies and initiatives, as well as incorporating environmental concepts, such as climate change, into national development plans.

Laws 359/1994 and 738/2006, relating to the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol (KP), respectively, mandate work on climate change in Lebanon. The Lebanese Prime Minister signed the Paris Agreement in April 2016, and the draft ratification legislation has been approved by the relevant parliamentary committees. Lebanon submitted its Nationally Determined Contribution (NDC)

under the Paris Agreement, setting a 2030 goal of 15% reduction in GHG emissions as an unconditional target and 30% reduction conditional on financial, technological, and other factors.

In Lebanon, no new law expressly tackles climate change. However, a number of regulations have been enacted to address issues that could be linked to climate change, such as reducing air pollution from transportation (law 341/2001), reducing energy imports by developing local energy, including renewable energies (Council of Ministers, decision no. 13/2004), energy efficiency standards and labels, tax incentives on green products, and large-scale renewable energy development (Council of Ministers, decision no. 13/2004), and energy efficiency standards and labels.

### **3.2.2 Population profile**

In 2020, the population of Lebanon is expected to be 6.83 million, including migrant workers, Palestinians, and Syrian refugees. Between 2012 and 2013, Lebanon's population profile shifted dramatically as a result of an influx of Syrian refugees who spread across more than 1,200 villages across the region. Even though the majority of displaced Syrians live in rented housing or are hosted by Lebanese families, 4,231 informal settlements have sprouted across the country, primarily in the Bekaa and North Regions. The massive influx of displaced people has put a strain on already vulnerable environmental infrastructure, impacting energy demand and use, solid waste and wastewater generation and management, air quality, food consumption, and land use directly. (MOE, EU, & UNDP, 2014)

### **3.2.3 Geographic profile**

The landscape, geography and location of Lebanon allowed the presence of agriculture sector. The agriculture area are distributed between Bekaa (42.1%), Northern Lebanon (27.2%), Southern Lebanon (12.6%) and Mount Lebanon and Nabatieh (9%) each) (MOA,2013). However, with time the agriculture land is decreasing reaching less than 11% in 2011 (WorldBank, Lebanon - Country environmental analysis, 2011)In total the agriculture sector (including livestock) contributes to 5% of Lebanon's GDP.

### **3.2.4 Economic profile**

The macroeconomy of Lebanon is in shambles as a result of several crises. The economy entered a financial crisis in October 2019, triggered by a sudden halt in capital inflows, resulting in banking, debt (including sovereign default), and exchange rate crises. To combat COVID-19, the government placed a lockout in late March 2020. Finally, a huge explosion shook the Port of Beirut (PoB) on August 4, 2020, destroying most of the port and heavily damaging dense residential and industrial areas within a 1- to 2-mile radius. In less than a year, Lebanon has had three governments.

In less than a year, Lebanon has had three governments. In 2020, real GDP is expected to fall by 19.2 percent. Such a large contraction in economic activity is supported by high frequency indicators. Real GDP is expected to contract by another 13.2% in 2021, owing to exceptionally high uncertainty (WorldBank, Lebanon Publication Economic Update, 2020)

The economy of Lebanon has a variety of structural flaws, including a lack of basic infrastructure (e.g., roads, water, electricity and telecommunications). Conflicts have harmed infrastructure, which has been harmed by underinvestment and inefficient management

throughout the years. Because of a lack of investment in new capacity and an outdated energy subsidy scheme, the economy continues to face severe electricity shortages.

### **3.2.5 Financial gaps and constraints**

Additional financial resources are needed to continue improving and consolidating existing technological and institutional capacities to carry out planned climate actions and monitor their progress and effects on national emissions. Direct financial assistance is inadequate and inflexible enough to ensure full and reliable reporting, as well as the implementation of nationally prioritized mitigation and adaptation steps. It is important to increase the funds available to countries and increase flexibility to facilitate the launch of new activities aimed at enhancing climate change monitoring and implementation.

Financial regulations may offer small-scale farmers assistance and financial advantages. Small farmers frequently have trouble finding markets and resources. Financial policies can encourage small-scale farmers to engage in short food supply chains and create direct relationships with customers by offering financial assistance, technical support, and infrastructural development.

### **3.2.6 Industry**

Large industrial units can be located in rural and remote areas, mostly manufacturing operations that require large surface areas to function. The largest industrial complexes are found outside of Beirut and Mount Lebanon, especially in North Lebanon and Bekaa.

According to the Ministry of Industry, approximately 75% of industries were developed prior to the enactment of the decree 8018/2002 “Permitting of Establishments.” This problem has

significant implications for industrial enterprises' compliance with recent permitting regimes, including environmental protection standards.

The Ministry of the Environment is in charge of ensuring that industrial establishments comply with the Environmental Compliance Decree 8471/2012 and its related decisions (202/1, 203/1, and 271/1 – 2013). To comply with the decree, water and air pollution abatement steps must be implemented based on the scale and form of each industrial establishment.

In the first half of 2020, Lebanon's primary and secondary sectors were under pressure due to the country's economic crisis and the negative effects of Covid 19. Agricultural imports did not drop, although exports grew as local goods became more competitive to international buyers. Industrial exports contracted due to difficulties importing raw materials used in their production.

In the agricultural sector, exports increased during the first five months of the year, while imports decreased marginally. Agricultural exports rose by 14% in the first five months of 2020.

Compared to an 11.5 percent growth in the same timeframe the previous year. In the first five months of 2020, agricultural imports dropped by 25.6 percent, compared to a full 0.4 percent in the same timeframe of 2019.

It's worth noting that developing Lebanon's agricultural sector is critical for ensuring self-sufficiency and reducing the need to import food, especially for goods that could be produced locally. As a result, foreign currency exports would be reduced, and the local economy would be more stable, reducing its dependency on the external sector.

Short food supply chains are becoming more prevalent in Lebanon gradually thanks to a combination of consumer demand, farmer initiatives, government backing, and the goal for a

more resilient and sustainable food system. It gives farmers the chance to expand their marketing channels, establish personal connections with customers, and highlight the distinctive aspects of Lebanese agriculture. The Lebanese government is increasingly supporting small-scale farming and local food distribution networks. To conserve agricultural land, offer financial support, encourage sustainable practices, and promote the consumption of locally grown food, policies and programs have been created. This assistance contributes to the development of favorable conditions for short food supply chains. Moreover, consumer demand for locally sourced, sustainably produced food has been growing. People are looking for openness in the food system because they want to know where and how their food is made. In order to satisfy customer preferences, farmers now use short food supply chains as a result of the rising demand for locally sourced goods.

In the industrial sector, both imports and exports were under pressure; in particular, industrial sector imports dropped by 53.2 percent annually in the first five months of 2020, after growing by 11.4 percent in the same period of 2019. Externally, industrial exports fell 9.1% from the previous year's pace in the first five months of 2020, compared to an increase of 8.8% in the same timeframe of 2019.

(BankAudi, 2020)

### 3.3 Agriculture

In regional markets, Lebanese exporters profit from a high understanding of product quality and customer satisfaction. Agricultural exports totaled USD 193.1 million in 2019, increasing at a CAGR of 2% from 2010 to 2019, with a decrease between 2014 and 2017 due to the closure of border areas with Syria (Figure 28).

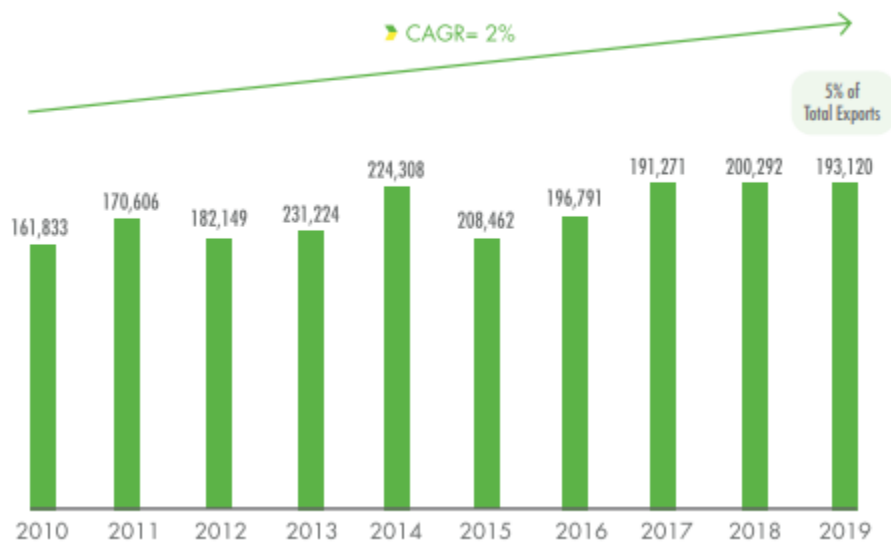
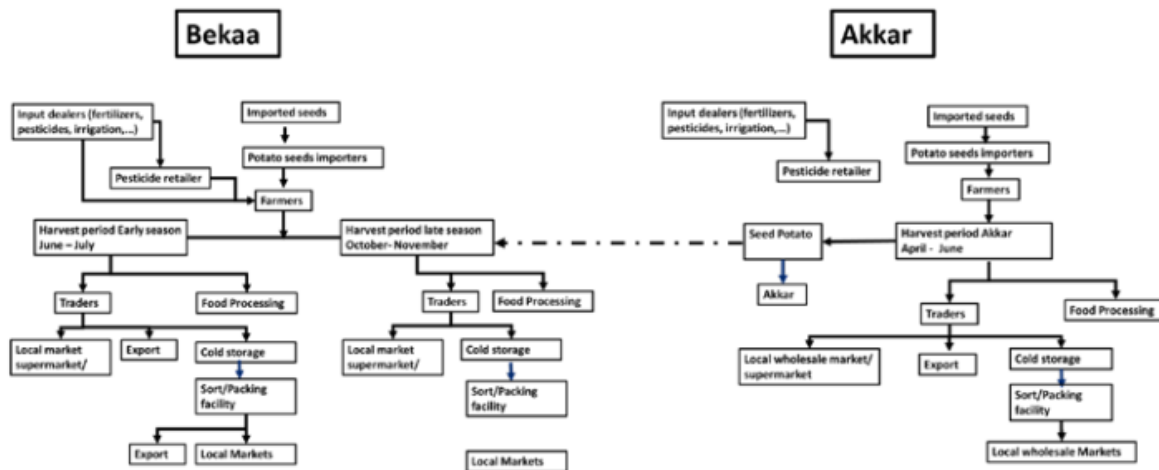


Figure 28 :Evolution of Lebanese Agricultural Exports USD Thousands / 2010-2019 (LebaneseCustoms, 2020)

### 3.3.1 Crop production

Fruits, vegetables, olives, cereals, tubers, and legume crops are Lebanon’s major agricultural crops. Owing to land scarcity, cereal production has decreased in favor of high-value crops such as vegetables. Lebanon is self-sufficient in fruits and vegetables, though open market competition is pushing imports of these goods.

Wheat and barley are the most common cereals grown, with forage crops such as alfalfa, vetch, corn, oats, and sorghum also being grown. Most of the barley grown in the arid areas of the Bekaa (Hermel and El Qaa) is used as grazing land for livestock. Following recent incentives, it is predicted that forage crop production will increase.



Source: FAO Mission, 2020.

Figure 29 :Value chain scheme for potatoes (FAO, FAO Mission To Assess The Impacy of the Financial Crisis on Agriculture in the Republic of Lebanon, 2020)



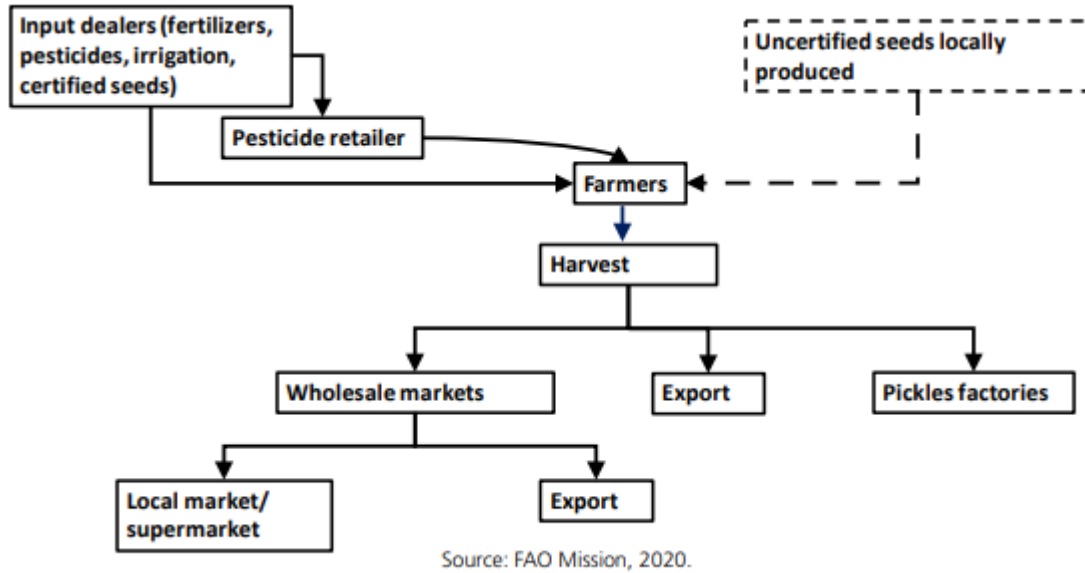


Figure 30: Lebanon – Value chain for vegetables (FAO, FAO Mission To Assess The Impact of the Financial Crisis on Agriculture in the Republic of Lebanon, 2020)

### 3.3.2 Animal production

The livestock industry accounts for roughly 30% of overall output value (FOA, 2011). Despite the fact that animal production is considered secondary to crop production, the poultry and dairy sectors in Lebanon are both important in terms of production and quality. The poultry industry is the only one that meets domestic demand, and it is regulated by a small number of companies that use closed systems to produce high-quality broilers and eggs. Cattle are predominantly raised for milk production, with the majority of stock being raised on both large and small farms. Beef production is limited, and live animals must be imported (in addition to imported chilled and frozen cuts) (FOA, 2011).

Short food supply chains can be encouraged and supported in Lebanon by the agriculture industry through various ways.

Farmers can set up and take part in farmer's markets, where they sell their fresh products to consumers directly. These markets give customers a chance to interact with local farmers, find out more about their goods, and buy fresh, seasonal fruit. Moreover, to communicate with customers directly, the agriculture sector might make use of online platforms and e-commerce websites. Farmers can create their own online storefronts or take part in online marketplaces that support direct sales, doing away with middlemen and allowing customers to easily acquire fresh products. Furthermore, the agricultural industry can launch educational campaigns to inform consumers about the advantages of assisting local farmers and maintaining short food supply chains. This can involve spreading awareness of the value of eating in season, organic farming methods, and the environmental and health benefits of locally grown food.

The agriculture industry in Lebanon may boost the local economy, assist small-scale farmers, minimize food waste, promote food quality and safety, and contribute to the sustainability and security of the nation's food supply by strengthening short food supply chains.

### **3.4 The Most Popular Environmental Policy Instruments**

The environmental principles according to the Article 4 of the law 444/2002 state the following:

- Achieving precaution through adopting cleaner production processes
- Prevention through the employment of the best and most prominent technology available.
- The famous Polluter-Pays-Principle which states that the polluters themselves have to pay for the whole control and prevention techniques against pollution.
- Attaining the conservation of biodiversity over all the economic activities
- Adopting preventive measures against degradation of natural resources

- Offering the participation of the public by making the access to information free
- Achieving cooperation between the three main key players in this scenario: citizens, local authorities and central government
- Having the local customs and values recognized in rural areas
- Employ efficient pollution monitoring systems
- Consider offering economic incentives in order to encourage people to comply and help in controlling pollution.
- Putting the EIA process into use in order to allow for environmental pollution degradation.

Similar to most laws, the environment law 444/2002 does require application decrees which can be somehow complex and sometimes followed by a prolonged political debate. In order for law 444/2002 to be fully implemented it needs 36 application decrees in total. Obviously, such an achievement is not forecasted to occur overnight and most probably not expected to occur in the coming decade (MOE & UNDP, UNDP.org.lb, 2011) Great delays have been witnessed in the policy making process due to the fact that ministers and new governments share the tendency to shelve all previously drafted policies and start all over again with the new team of professional advisors that they assign.

The ISO 9001 quality management standard and 14001 environmental quality management standards are among the ISO's most generally known principles. In Lebanon, research examines identified with the execution of worldwide intentional guidelines among the modern area have so far concentrated on quality management systems. Even though not compulsory and not identified with the current public approaches, barely any businesses have deliberately obtained the ISO

14001 affirmation (ISO,2009). Additionally, scarcely any endeavors were made to smooth out intentional EMS among the industrial sector (UNIDO, 2005)With the foundation of the ‘‘Euro-Mediterranean free trade area’’ in 2010 and Lebanon’s going through increase to the Euro-Med Association Agreement and the WTO, more opportunities will probably arise. However, more rivalry and challenge will confront the industrial sector to conform to the prerequisites of these arrangements, especially with respect to ecological balance. In this manner, the area needs to respond rapidly to these dynamic changes in the worldwide market requests through advancing ISO 14001 EMS certification. The certification will help the sector to beat streamlined commerce hindrances, keep a practical relationship with the European Union market (one of Lebanon’s significant trading partners), show ecological responsibility, and gain competitive advantage over its rivals.

To fix some of the sector’s problems, the MoA developed several programs, including the ‘‘Development of the Agriculture Sector Strategy 2010-2014’’ and the ‘‘Ministry of Agriculture Strategy 2015-2019.’’ The 2015-2019 Strategy, which has been extended to 2020, aims to:

- Ensure that the food is healthy and of good quality.
- Increase agriculture’s contribution to the country’s economic and social growth
- Encourage the long-term conservation of environmental and genetic resources.

While the Strategy’s goals were noble, it does not appear that successful agricultural policies to achieve the objectives were enforced. However, several steps are being pursued to improve Lebanon’s readiness to adopt Article 13 of the Paris Agreement on transparency:

- Minister of Environment Decision 99/1, which encourages the private sector to report GHG emissions and related activity data to the Ministry of Environment on a voluntary

basis. The latter aims to conduct an assessment to evaluate the initiative's importance and scalability in order to better inform Lebanon's climate change policy.

- Collaboration between the Ministry of the Environment and the Ministry of Industry, which entails data collection by demanding that specific activity data be included in regular procedures.
- Collaboration between the Environment and Finance Ministries, which includes data requests in the online tax declaration template. A first round of data collection for companies registered with the Broad Taxpayer Office will begin in 2018.
- The Lebanon Climate Act is an initiative aimed at involving the private sector and non-state actors in climate action in Lebanon. A series of training courses has been held to assist businesses in assessing their level of participation, recognizing potential civil society and municipal stakeholders, and creating a climate change implementation, monitoring, and reporting plan.
- Transparency legislation, which gives the public access to information and requires all government agencies to publish key documents with performance metrics online. The legislation is a step forward in improving transparency and public accountability, and it will help with climate change transparency efforts.
- The Management and Information System for Climate Action (MISCA), an online information system that monitors the progress of Lebanon's Nationally Determined Contribution's energy goal. The Environment Ministry wants to extend the MISCA program to include other ministries. (MOA, Ministry of Agriculture Strategy , 2015-2020)

By incorporating environmental concerns into agriculture policies, Lebanon can support the development of short food supply chains that benefit both farmers and consumers while also fostering a more sustainable and resilient food system. Environmental regulations support efficient and sustainable short food supply chains by promoting sustainable resource management and minimizing waste in the food production and distribution process.

### **3.5 Enhancing Efficiency and Competitiveness of Agri-food Value Chains 2020-2025**

This strategy put by the MOA will result in:

- enabling Lebanese farmers, including smallholders, to participate in agri-food value chains by improving the organizational capacity of Lebanese value chain players to integrate (both horizontally and vertically), thereby increasing their participation in value addition generation.
- enabling the upgrading of supply chain networks and postharvest handling processes, as well as wholesale and local markets. Priority initiatives include: organizing wholesale markets and increasing transaction transparency (e.g., through e-payments, blockchain growth, etc.); developing permanent and seasonal agricultural farmers' markets for direct sale; engaging in the technology and information system of post-harvest handling systems to mitigate food loss and waste; and establishing incubators.
- promoting agricultural investment from both abroad and within the country Parallel studies would be needed to overcome obstacles to financial product creation and access by promoting a matchmaking between market and offer of financial services, such as encouraging the development of new goods tailored to agri-food value chains or providing funding for a guarantee scheme.

- establishing favorable opportunities for the agriculture and food sectors, as well as increased use of locally manufactured primary products. Creation of olive oil, dairy and cheese industries, conventional and artisanal food ingredients, Lebanese wine, ready-to-eat packaged food, and promotion of the Mediterranean diet, as well as healthier eating habits, are all possible strategies.

**At the supply chain stage:**

- promoting and organizing cooperative work and farmer associations and organizations (targeting smallholder's producers). This policy would maximize farmers' involvement in agri-food supply chains by encouraging cooperative work and farmer groupings. This would benefit value chain players' bargaining power, including their ability to affect regulation, as well as more equitable value-added generation across the value chain.
- Eliminating barriers to participation (transaction costs, risk, and a lack of business information) as well as improved horizontal and vertical integration would provide benefits (especially for producers). Lebanese farms and agribusinesses' technological inefficiency contributes to unsustainable activities and decreased resistance to environmental shocks and stressors. This necessitates targeted actions through the agri-food sector with the aim of promoting ethical development and use activities, as well as increasing production and protecting ecosystem resources.

Major steps will also be made to reverse ground, soil, water, and other natural resource depletion, mitigate emissions, and implement more energy-efficient strategies, resulting in improved climate change adaptation and mitigation, including:

- minimizing carbon emissions in forests and wooded lands

- adopting of new technological technologies, increased access to climate financing and insurance, and improved extension/technical assistance are all needed for the proposed activities.
- promoting the sustainable use of natural resources (soil, pastures, trees, and fisheries), minimizing environmental and natural resource destruction by more sustainable cultivation, food production, and logistics activities (e.g., smart agriculture, organic farming), as well as more educated and knowledgeable operators. Improve the effective use of irrigation water and increase the availability of irrigation water supplies, including water harvesting and storage, improved delivery and governance, the development of hill lakes and water tanks for greater water quality, and encouraging the implementation of modern irrigation techniques. In the agriculture sector, promote and encourage the use of renewable energies.
- promoting of low-carbon technology, reduction of agricultural emissions (at the farm level), promoting the re-use of agricultural waste, development of compost from animal farms and agricultural goods, including through the establishment of relevant regulatory system, and more efficient information and education programs on responsible food consumption are all priority initiatives.

(MOA, Enhancing Efficiency And Competitiveness Of Agrifood Value Chains, 2020-2025)

### **3.6 Supply Chain in Lebanon**

Based on a report done by the (WFP, Exploring Food Assistance Programmes: Evidence for Lebanon, 2015), the supply chain in Lebanon is divided between long and short supply chains. Fruit and vegetable supply chains vary by season and, to some extent, by commodity. Farmers in Bekaa, who are mostly not organized in cooperatives, sell locally grown fruit and



vegetables to wholesalers on commission at Feruso/central Bekaa's market. During the local commodity marketing season (May–October), other markets around the country and the retail industry get their supply from the central market. Imported food takes over as local demand dwindles, but through direct delivery to more decentralized markets. Because of its proximity to raw material supply, the Bekaa valley is also home to the majority of the fruit and vegetable processing industry.

Breaking down the data by region, most traders in three areas (BMS, Bekaa, and North Lebanon) depend on long supply chains, with importers as entry level (Figure 31). However, each region has its own distinct characteristics. As one would imagine, traders in BMS are either connected to global vendors or work with very small supply chains: their proximity to Beirut's main entry port and the comparatively short transport distances minimize the steps taken to push products down to consumers. Local vendors, especially cash vans, play a prominent role in Bekaa (beyond the long supply chain), reflecting the fact that certain retailers are only tangentially related to the rest of the country's market environment or are only connected by sales representatives. In this case, optimizing voucher value by sales and concessions in contracted shops may be less successful than affecting higher levels of the supply chain, so additional traders may also be required to receive their profit share. Until cash van traders, who will simply pass the discounts on to deals and incentives would need to be arranged at supply chain stages.



*Figure 31 Imported food supply chain breakdown*

The overwhelming majority of the traders (95%) sell a mix of imported and local foods (Figure 32). Few people focus solely on local food (especially retailers) or imported food (mostly wholesalers). Long supply chains for imported products are favored by the majority of traders (52 percent, see Table 6), while local food is supplied via a variety of supply chains, none of which is dominant.

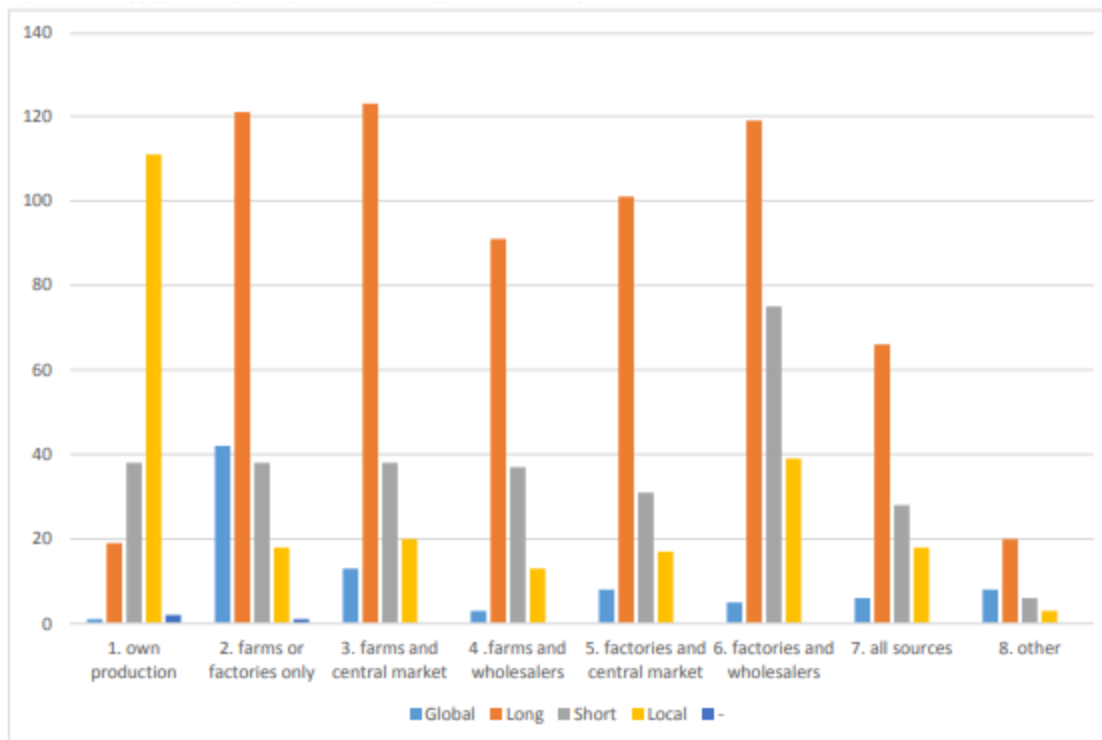


Figure 32 Supply chains for imported and local food (number of traders)

Local food	Imported food					Total	Global	Long	Short	Local	NA
	Global	Long	Short	Local	NA						
1. own production	1	19	38	111	2	171	0%	1%	3%	9%	0%
2. farms or factories only	42	121	38	18	1	220	3%	9%	3%	1%	0%
3. farms and central market	13	123	38	20	0	194	1%	10%	3%	2%	0%
4. farms and wholesalers	3	91	37	13	0	144	0%	7%	3%	1%	0%
5. factories and central market	8	101	31	17	0	157	1%	8%	2%	1%	0%
6. factories and wholesalers	5	119	75	39	0	238	0%	9%	6%	3%	0%
7. all sources	6	66	28	18	0	118	0%	5%	2%	1%	0%
8. other	8	20	6	3	0	37	1%	2%	0%	0%	0%

Table 6 Imported and local food sources

Some traders perform a dual function by growing their own vegetables or dairy products; this is a way to complement the product offering as imported foods are often bought from local suppliers. This is common in Bekaa, where 21% of traders have organized their businesses in this manner. Traders in global supply chains, especially in BMS, tend to connect only with local farms or factories.

### **3.6.1 Suppliers**

The Lebanese market has seeds, rootstock, and other gardening products. International breeders are frequently contacted by suppliers. Obtaining seeds and plant materials is not a difficulty for farmers in general. Fertilizers and insecticides are sold by agrochemical companies to farms. These businesses cater to a wide range of crops. Over 75 providers have registered in the Bekaa alone (USAID, 2014b).

Fertilizers, crop protection, irrigation, greenhouses and equipment, and other technical supplies are given by a variety of small and large businesses, with costs and quality ranging from cheap to high. Few of them have worldwide links, both in terms of providing partners and sales, as well as cutting-edge technology and supplementary agronomist-led advising services. Robinson Agri and Debbane are the top international providers. In Lebanon, there are 45 commercially available cold storage facilities. Despite the fact that cold storage is available, the facilities are insufficient in terms of capacity and refrigeration quality (USAID, Table Grape Value Chain Assessment Report., 2014b). More than 90% of input sales are conducted on credit because farmers want supplies early in the season but are unable to pay until harvest. As a result, input providers offer farmers loans to cover expenditures at the start of the season. Pesticides and liquid fertilizers account for about 15 to 20% of total production costs (USAID, Table Grape Value Chain Assessment Report., 2014b).

### **3.6.2 Producers & Processors**

Hobby, small, medium, and big farms are all available. According to the 2010 agricultural census, there were around 170,000 farm owners, 8.6% of them were females, and the average age was 52 years (55 for females). The average size of a farm is 1.36 hectares.

Approximately 70% of the farms are less than 1 hectare, another 26% are between 1 and 6 hectares, and the remaining 4% are larger than 6 hectares (WUR, 2017). A GLOBALG.A.P. accreditation is held by a restricted number of fruit and vegetable growers. The manufacturing industry is undergoing a transformation to become more market-oriented. Seasonally, fruits and vegetables are self-sufficient.

Processors play a key part in the value chain of fresh fruits and vegetables since they buy goods that aren't fit for export or retail and process or add value to them.

### **3.6.3 Distributors**

Wholesalers and distributors purchase from wholesale markets and importers, then distribute on a regular basis to the retail market, restaurants, and catering enterprises. Those that sell to fresh produce and small grocery stores often cover five to six of these locations. The distribution mark-up is between 10% and 15%. (USAID, Table Grape Value Chain Assessment Report., 2014b).

The wholesale market and fruit and vegetable distributors account for around 60% of overall output. The wholesale market doesn't provide any further value. There is no pre-packing at the wholesale market since farmers sort their products in the field (USAID, 2014a). The major channel to local customers is Beirut's wholesale market. For example, around 80% of avocados grown in the South and sent to the Saida wholesale market are resold to the Beirut wholesale market (70%) and the Tripoli wholesale market (40%) respectively (10 percent ). The remaining 20% of Saida supplies are sold to local juice stands, restaurants, merchants, and hotels, as well as other wholesale markets throughout Lebanon (USAID, 2018b).

Traders exert influence over the market by setting the purchase price, purchasing from farmers in a variety of methods, and delivering through domestic or international channels. They may engage daily laborers for harvesting, sorting, and packaging, as well as pay for transporting the boxed products to the export market and negotiating trade negotiations (ILO, 2015).

### **3.7 Main Actors in The Agri-food Industry in Lebanon**

Lebanese government's reports have indicated that, about 97% of Lebanese private enterprises can be considered as Micro, Small, and Medium Enterprises (MSMEs). Presently, there are 1245 registered agri-food companies in Lebanon, representing 18.2% of the industrial activity in the country (UNESCO, 2017). The majority of agri-food output is sold locally, with sales totaling \$1,655.5 million. According to customs data, the sector's total exports in 2017 totaled \$500.2 million. Prepared foods, such as vegetables, fruits, and nuts, account for the majority of this category's exports (Tabch, 2018) . The main actors in the agri-food industry in Lebanon are the farmers, assemblers, producers, processors, distributors, wholesalers, retailers, consumers (Abebe, 2019). Moreover, government agencies and organizations, farmers and farmers' associations and cooperatives, the agri-food industry, private investors, civil society, academia, and research and development partners are all relevant actors in the agri-food market (MOA, Lebanon National Agricultural Sector, 2020-2025) .

Figure 33 illustrates the vegetable value chain in Lebanon that includes the main actors in the agri-food industry in Lebanon.

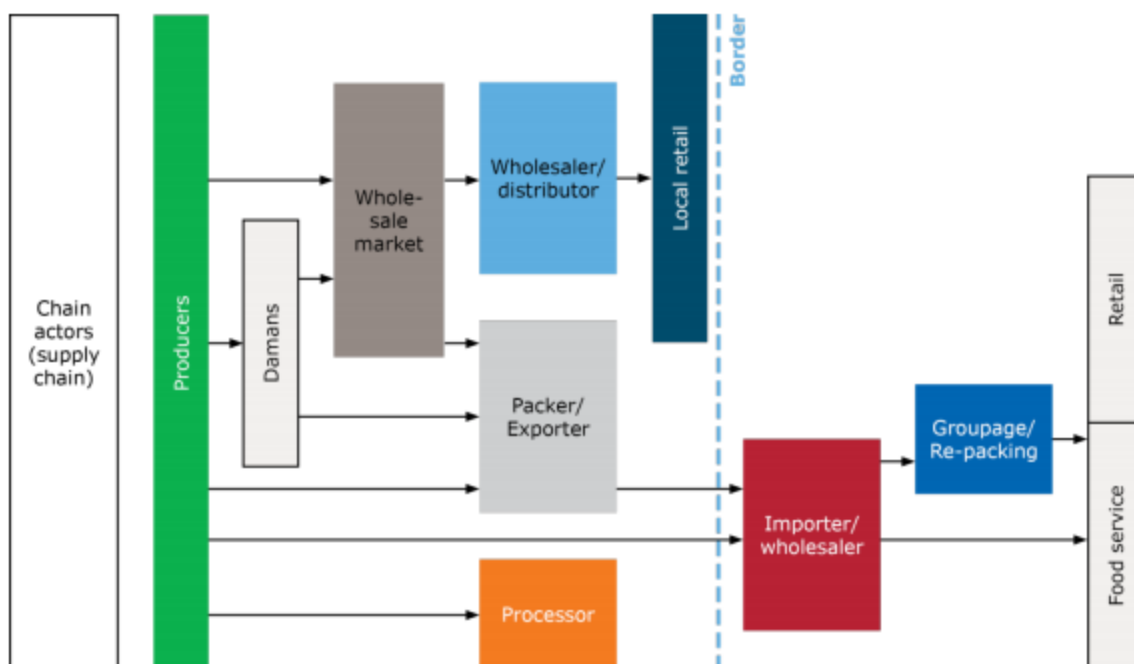


Figure 33 Vegetable Value Chain in Lebanon (CBI, 2016)

### 3.7.1 Producers

The size of the vegetable farms varies from small to large. In 2010, the average farm area was 1.36 hectares. Most farms mix open fields and safe agriculture. Just a small percentage of farmers are experts in greenhouse production. There is no way to know how many greenhouse farmers there are. The total greenhouse area is projected to be 3,900 ha. The greenhouse area is projected to grow gradually, based on the global economy and the geopolitical situation in the Middle East region, due to the growing demand for high quality and high value fresh vegetable goods.

Dammans and middlemen are the buyers of smaller and medium-sized farmers' goods. Dammans are large or medium-sized farmers who collect or buy goods from other local producers and sell them to wholesalers and exporters at wholesale markets. They are distributors or exporters sometimes. For fruit products, the damman method is more general.

The goods are not purchased by the middlemen; instead, they are stored, (re)packaged, and sold to the buyer. They pay the manufacturer later, based on the outcome of the negotiations. The producer is more or less reliant on middlemen for the price he receives for his goods, putting him in a vulnerable situation. The middlemen, on the other hand, strive to keep the situation acceptable for all parties involved; otherwise, the manufacturer may seek out other middlemen or wholesalers. The position of middlemen is being debated because small farmers have no opportunity to upgrade their greenhouses.

Land for vegetable production is owned or rented by small farmers. Greenhouses are used for growers who own property or have long-term leasing agreements due to family relations. Growers who rent land on a yearly basis should not invest in greenhouses because they are risky. In some areas, such as Kefraya and Kerbet Qanafar, small growers pay their rent with half of their harvest. Growers would be discouraged from investing in better technology to manufacture higher-quality vegetables as a result of this situation.

Despite the presence of a significant number of agricultural cooperatives in Lebanon (317 in 2009, Augier & Blanc, 2009), small farmers usually do not participate when it comes to marketing their crops, preferring instead to export them directly to wholesale markets. As a result of their low volume of output, small farmers have a poor role in the value chain. Large growers market their goods to wholesalers and exporters, as well as direct to importers in some situations.

The agriculture production sector in Lebanon is becoming more market-driven. With new varieties and advanced planting techniques, growers are extending the growing season and implementing postharvest practices. This method is aided by input from vendors.



### 3.7.2 Wholesalers

In Lebanon, there are nine wholesale markets, two of which are smaller. Local supply is connected to domestic outlets and export markets through wholesale markets in manufacturing regions like Akkar and the Bekaa. During off-season production times, these wholesale markets are also used as trading markets, supplying the regional demand with mostly imported goods.

Some smaller markets, such as Baalbeck in the Bekaa valley, are primarily for household use. Traders have little connections to the broader wholesale markets. Typically, poorer-quality goods are traded at lower cost. It is standard practice to discard unsold merchandise.

Since wholesale markets are available to all consumers, vegetable delivery is heavily distributed through various distribution networks. Small shops and restaurants, hotels and nearby stores, as well as consolidated supermarkets like Spinneys, Carrefour, and Monoprix, receive distribution.

Greenhouse vegetables are often more expensive than open-field vegetables due to their higher consistency. Because of their darker color, greater flavor, and market demand, some exporters and high-quality traders favor open-field vegetables and are willing to pay higher prices for them. Because of their high external consistency, greenhouse vegetables are often sold to restaurants and hotels.

Wholesale industries are privately owned companies. The services range from mediocre to moderate, and the pricing structure is vague. The majority of the trading is conducted on consignment, and merchants are paid a commission of 7-10% of the purchase price. While goods are sorted and rated to some degree, there is no quality control scheme in place at the national or

wholesale levels. The majority of export goods are sent to Gulf countries with no specification standards. Quality specifications, similar to those needed for export to the EU, are planned to be implemented (e.g. GlobalGAP).

### **3.7.3 Distributors**

Fresh goods are purchased at wholesale markets and from importers by distributors, who then sell them to local retailers, stores, restaurants, and hotels. Depending on the industry, the distribution mark-up (on producer prices) is 15-25 percent (CBI, 2016).

### **3.7.4 Exporters**

In Lebanon, the fruit and vegetable supply chain employs some 45 exporters. Exporters usually purchase their goods from wholesalers, but they may also buy directly from major farmers and/or dammans. A few major farmers also export their own goods. As previously said, shipments are mostly to Gulf states, and no quality standards are currently in place. There is a preference for high-quality goods. When shipping to Europe, goods must follow strict quality standards (GlobalGAP and HACCP). This is especially true for greenhouse goods, which can be considered high-quality and are increasingly aimed at the high-end and export markets.

### **3.7.5 Processors**

When crops aren't of high enough quality to be exported, processors play a part in the fresh vegetable chain. On the other and, greenhouse vegetables are sold unprocessed due to their high quality.

### **3.7.6 Retailers**

With a growing abundance of shopping stores, such as supermarkets and hypermarkets, the domestic market has shifted quickly. There are currently ten domestic and foreign retail

organizations active, and this number is expected to increase. Admic, Bou 160halil, Carrefour, Fahed Supermarket, Goodies, Le Charcutier, Monoprix, O&C, Spinneys, and TSC are all worth mentioning. Since about half of the population lives in Beirut and Tripoli, the majority of stores are based there.

### **3.7.7 Institutional Parties**

Institutional parties are farmer cooperatives, business support organizations, trade organizations and education & research.

Individual farmers may benefit from farmer cooperatives' expertise and assistance in undertaking joint activities in terms of processing, supply chain activities, cost control, and/or expanding market access. Specific farmers' prices would be reduced if they did so themselves. While there are 1,350 cooperatives registered, only a small percentage are active. Cooperatives are more involved in organizing training for growers on cultivation issues, rather than developing outreach activities and encouraging growers to become more business focused.

With four regional chambers, the Federation of Chambers of Commerce, Industry, and Agriculture (FCCIA) promotes value chain participants, with agriculture and agro-processing as priority sectors. Export promotion, seminars and courses on a variety of topics (food safety, managerial skills, and so on), market knowledge, research facilities, technical assistance, and extension services are all supported.

The national government created the Investment Development Authority of Lebanon (IDAL) as a national investment and export promotion agency. Agriculture and agro-industry have been identified as the sectors with the greatest potential. IDAL provides export promotion programs (data on export markets, entry to export markets, technical assistance, and subsidizing

participation in international trade shows), as well as the AGRI PLUS initiative (since 2011) for fresh produce exporters and cooperatives (streamlining production, packaging improvement, marketing and promotion and financial support of packaging costs).

The Ministry of Agriculture oversees agricultural science, expansion, and education, which promotes the value chain of fresh vegetable produce. Applied research is carried out by the Lebanese Agricultural Research Institute (LARI). It operates several experimental stations in various parts of the world to assist in the resolution of problems. LARI also performs export testing (soil, water) and provides free weather and technical information. The MoA's key feature, particularly for small farmers, is extension service, which has a large infrastructure and good country coverage.

Influencers are members of the systemic community, both domestically and globally, who have an influence on the value chain's operation. The national government has first-mover advantage through its Ministries of Agriculture (MoA), Industry (MoI), and Economics and Trade (MoET) (MoET). The Ministry of Agriculture is a key player in building a legal and regulatory system as well as upgrading infrastructure to attract investments and boost agricultural productivity and marketing.

The Central Bank of Lebanon offers subsidized loans for every agricultural project with a loan volume of more than 50 million Lebanese pounds over a term of up to seven years. Kafalat offers guarantees for commercial bank loans to SMEs in the agriculture sector of up to 400,000 USD (IDAL, 2017).

The current key pillars are: issuing effective regulations, improving the MoA's organizational framework and role, modernizing agricultural infrastructure and improving

natural resource productivity, improving agricultural extension, and imposing control over agricultural goods, inputs, and so on. Developing agricultural value chains (improving quality, manufacturing, marketing, and export), providing a credit scheme for small and medium-sized projects, and conserving natural resources are all important goals. The Ministry of Economy and Trade is in charge of trade strategy. There is currently no national or sector-level export policy. The MoET, on the other hand, provides import figures, tariffs, and other trade data. LEBEX, the Lebanese Export Promotion Agency, was recently formed as a public-private partnership (CBI, 2016).

(Rujis, 2017)

### **3.7.8 Consumers**

Consumers in Lebanon are becoming more conscious of ethical and sustainable production. They seek to ensure that food and beverage makers follow best practices at every stage of the production process, from raw materials to finished product delivery. Many clients want to ensure that the things they're buying adhere to international standards (HACCP; GMP; ISO certified). Customers also appreciate hearing that food manufacturers have a corporate social responsibility policy in place, are benevolent, and give back to their communities (Tabch, 2018).

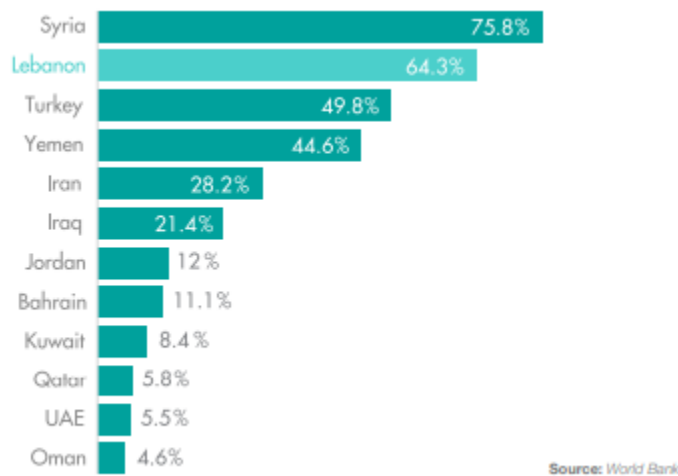
As our main focus is on short food supply chains in Lebanon, it is worth noting that most important players are the producers and consumers as well as institutional parties. The emphasis moves in short food supply chains to relationship-building, increasing transparency, and assisting local economies. A more resilient and locally focused food system is encouraged by the direct connections between farmers, producers, and consumers. These connections also develop a

feeling of community and support sustainable practices. Producers and farmers are crucial. They are actively engaged in growing crops, managing cattle, or making food. Since they are more likely to sell their goods directly to customers, farmers with short food supply chains frequently have tighter ties to them. To meet the unique needs of local customers, they may engage in activities like organic farming, small-scale production, or niche items. Short food supply chains involve active participation from consumers as well. They can interact with farmers and other producers face-to-face, inquire about the source and quality of the food they buy, and learn more by doing so. Consumers with short food supply chains frequently give priority to elements like freshness, regional production, environmentally friendly procedures, and local farmer support. They might take part in activities like farmer's markets, internet platforms, or community-supported agriculture (CSA) programs, which put them in touch with producers directly. Moreover, short food supply chains can be facilitated and supported by governmental entities and policymakers. They can enact laws and policies that support sustainable agriculture, encourage regional production, save farmland, and aid in the development of local food networks and farmer's markets. Government assistance can help short food supply chains survive and expand by fostering a positive business climate for farmers and stimulating consumer demand for regional goods.

### **3.9 Lebanon as a Case Study**

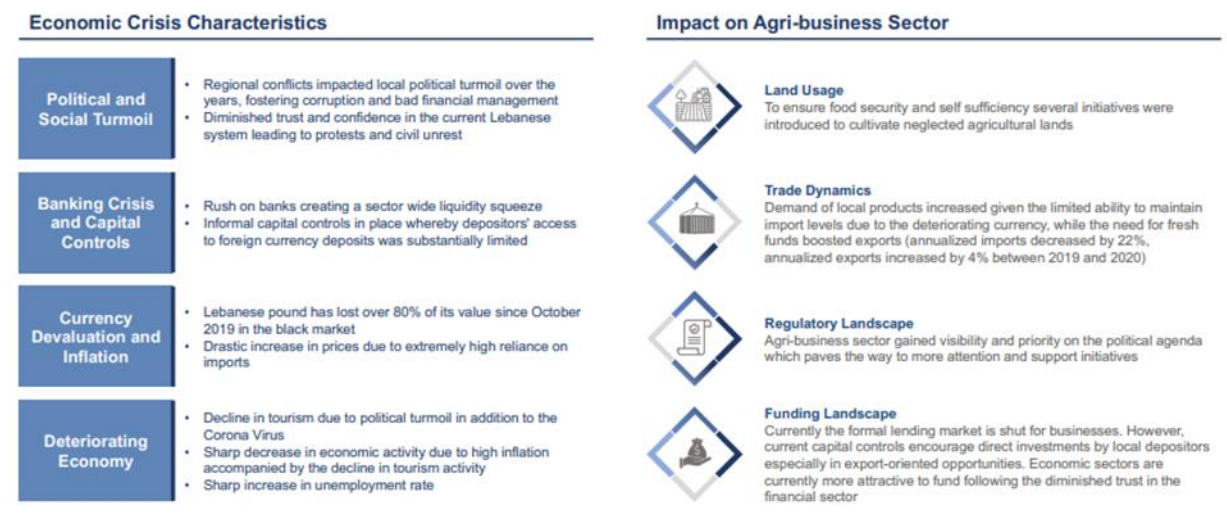
As mentioned in the description above, Lebanon has all the important factors that can boost the Agri-food industry. It has all the main factors of production, land with abundance of resources, skilled educated labor, enterprise and capital. Lebanon has the second-largest

agricultural land share in the Middle East, estimated at 63 percent, facilitating the growth of a sustainable agriculture processing industry. Furthermore, Lebanon has the highest precipitation rate among its neighbors, averaging 661 mm per year, facilitating the production of a wide range of crops (60+ types of crops and 10+ livestock products) Figure 34. The industry benefits from a low-cost labor force that will help it expand and grow. Many public and private colleges, such as the American University of Beirut (AUB), USEK, Balamand, and others, offer agriculture and food industry research programs. Around 30,000 students were enrolled in undergraduate and graduate engineering and agri-food programs in 2018. Lebanon also has a number of applied research centers, such as AUB’s AREC center in Bekaa and the Lebanese Agricultural Research Institute (LARI), which promote R&D and contribute to the sector’s growth and innovation (WorldBank, The World Bank, 2018).



*Figure 34 Agricultural Land of Total Land Area % | 2016*

The economic crisis that occurred by the end of 2019 had positive impacts on the Agri business ( Figure 35) (Ibrahim, Saleme, Sleiman, & Saad, 2020).

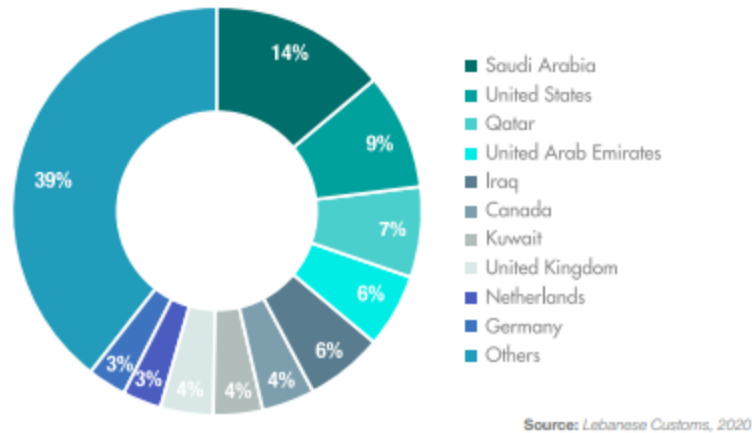


*Figure 35 Economic Crisis & Its Impact on the Agri-Business Sector*

Due to the economic crisis, we are living now, companies are heading more toward exportation as exporting their merchandise will provide them with dollars and thus, they prefer selling with a dollar currency rather than internally pricing at the Lebanese Lira rate, which lost its value with respect to the US dollar by 83% (Forbes, 2020). By mid-2019 1 USD was equal to 1,500 L.L., in 2021, 1 USD is equal to 20,000 L.L. and sometimes more. During the first 8 months of 2020, agri-food imports fell by 29.4% while exports increased by 21.8% (Audi, 2020).

Exports of agricultural products from Lebanon are heavily concentrated in the Gulf Cooperation Council (GCC) area, with little diversification to other areas. Saudi Arabia receives the highest share of Lebanese agri-food exports (14 percent), led by the United States (9 percent), Qatar (7 percent), the United Arab Emirates (6 percent), and Iraq (6 percent) ( Figure 36) (LebaneseCustoms, 2020).





*Figure 36 Export Destination for Agri-food Products % | 2019*

The devaluation of the currency will be an attractive factor to investors with foreign currencies who will find the land and labor very cheap with respect to their countries and this will lead to a boost in the industry. Nevertheless, when foreign companies invest, they will be obliged to follow international standards and this proves the importance of understanding EMS, how can it be implemented and what factors along the supply chain will be the main contributors to this implementation.

On the other hand, other companies are preferring to sell internally due to the high amount of foreign currency sent from expats to their families. Students, physicians, and other highly trained employees are among the people who have fled the nation since the economic crisis began in 2019 estimating between 400,000-500,000. The Crisis Observatory at the American University of Beirut recently warned that Lebanon is entering a third wave of mass emigration, citing three alarming indicators: the high percentage of Lebanese youth who want to leave (77 percent according to a survey last year, the highest percentage among Arab countries), the mass migration of medical and education personnel, and the current crisis's expected duration (Saoud, 2021). Remittances in Lebanon relate to migrant inflows as well as short-term employee

income transfers (personal remittances). In the third quarter of 2020, remittances to Lebanon increased to 917.10 USD million, up from 817.30 USD million in the second quarter (Economies, 2021). Thus the foreign currencies sent to Lebanon is increasing the spending value of families who will be able to spend money on more expensive products ( ex. Eco-friendly organic products). Never the less the fact that the families who are receiving transfers are educated skillful ones who have proven to be more interested in eco-friendly products (Chan T. , 1996) (Roberts, 1996) (do Paco, Raposo, & Walter, 2009) (Hoffmann & Muttarak, 2020).

# **CHAPTER FOUR: RESEARCH COMPONENTS MODEL & HYPOTHESIS**

## **4.1 Research Methodology**

To meet the study's objectives, I will use a positivist research paradigm. As a result, a quantitative research approach will be used. In particular, a survey approach will be utilized to collect and analyze quantitative data from a large sample of customers buying from agri-food products produced by Lebanese companies. In principle, when investigating the intention of buying from SFSCs, I will collect and analyze data in numerical form, and test theory by looking at the relationships between independent variables (environmental awareness, attitude, knowledge, values, sensitivity, health) and dependent variable (intention of buying from proximity). The impact of specific moderating variables (demographics, price of eco-friendly products, geographical area) will be investigated as well to conclude another function where the dependent variable will be the environmental buying customer behavior and the independent variable will be the intention to buy and the effect of the moderating variables on the relation.

## **4.2 Research Design**

The term "research design" refers to the type of research that will be conducted as well as the expected outcomes (Babbie & Mouton, 2001). To put it another way, the research design is the plan for gathering and analyzing the relevant data needed to provide empirical support for a study; it includes the data sources, the research method(s) or technique(s) used to perform the research, and the sampling procedure (Zikmund, 2003). According to Kumar (Kumar R. , 2011),

research design is "a plan, structure, and method of investigation devised to acquire solutions to research questions or challenges."

Given that this study follows a positivistic research paradigm, the next section will go through the quantitative research methods used in the current study.

Quantitative analysis will be adopted and can be done using a variety of approaches. Correlational, developmental design, interviews, and survey analysis are also used in descriptive research. These research techniques can be used in experimental and explanatory comparative research to varying degrees.

The research examines the distinctions between the two traits of the sample population using the correlational research approach. According to (Leedy & Ormrod, 2001) , the degree to which a researcher finds statistical similarity between two characteristics is dependent on how well those characteristics have been measured. As a result, relevance and durability are critical factors that influence correlation coefficients. The aim of a correlational analysis, according to (Bold, 2001), is to decide whether two or more variables are related. According to (Creswell, 2003), correlation is a statistical test that establishes patterns between two variables. The statistical analysis of the study issue can be done in a progression or series of observations using a conventional correlation test that yields a "r" result. In a method known as the Pearson Correlation Coefficient, the r coefficient is expressed as a decimal integer (Cooper & Schindler, 2001).

Survey techniques employed in this thesis, are used to generate data from participants' answers to questionnaires. The bulk of these questionnaires are closed-ended, enabling the researcher to waste little time elaborating on their responses. Questionnaires for surveys should

be simple to understand and respond to. Survey questionnaires are typically emailed or given out by researchers.

### **4.3 Research Strategy**

In this thesis the correlation strategy will be adopted after collecting data through surveys and structured interviews. Correlation is often used to determine measurement reliability and validity. Moreover, correlational analysis may serve to provide converging support for a hypothesis by expanding this trade-off between internal and external validity. In this way I can gain greater confidence in the validity of their hypothesis if it is backed by both a true study with high internal validity and a correlational analysis with high external validity.

After collecting the data, I will study which independent variables have a positive correlation with the dependent variable, which have negative and which has no correlation using regression analysis.

### **4.4 Sampling**

In this case, sampling saves time and money by lowering costs and reducing human requirements. Sampling can produce more precise and dependable results than censuses in several circumstances. Because of the high number of works involved in a survey, errors may increase. A smaller group working on a sample is easier to oversee than a bigger group working on the entire population.

Once the decision to use sampling has been taken, the target population must be determined. By properly characterizing the population, it is possible to identify the appropriate sources from which to gather data.

#### **4.5 Research Model**

Based on the literature review as a first step and the models presented above, I'll look into the impact of environmental sensitivity & awareness, knowledge, values & beliefs, norms & health consciousness on environmental attitude and then will assess the relationship between environmental attitude & intention to buy from proximity. Other variables such as the product itself, price of environmentally friendly products, trust, demographics, and geographic location are also going to be studied with regard of their impact on the intention to buy from proximity.

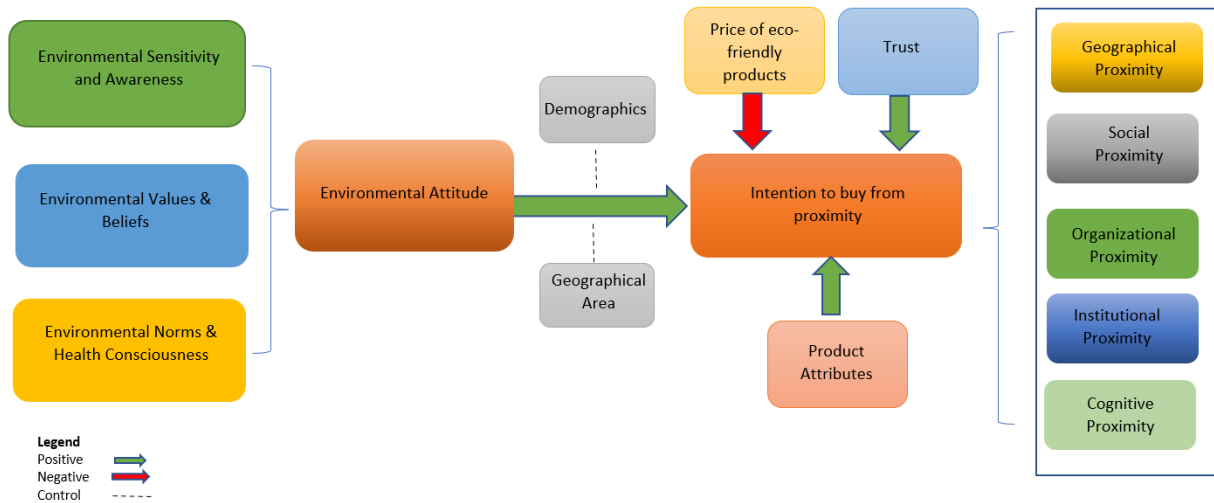


Figure 37 Research Model

## 4.2 Thesis Model Variables

### 4.2.1 Dependent Variables

The dependent variable in this study is the intention to buy from proximity. Proximity according to (Dubois, 2018) can be identified as geographical, social, or organizational. institutional or cognitive. Moreover, researchers are also curious about what drives people to the farmers' market. From a theoretical approach, (Conner, Montri, Montri, & Hamm, 2009) suggested that buyers receive three separate values from local food. The first is that the distance between the manufacturing plant and the market is shorter. The second consideration is food quality, which mostly indicates freshness. Face-to-face discussion is the third sort of social interaction. Furthermore, various locations have distinct definitions of quality, ranging from environmental sustainability to animal welfare to rural tradition, local knowledge, and culture.

Moreover, people go to farmers' markets for a number of reasons, according to study, including access to fresh local foods, supporting local agriculture, improving the local economy, assisting local farmers, and seeking higher food quality (Baker, Hamshaw, & Kolodinsky, 2009) (Conner, Montri, Montri, & Hamm, 2009).

Food safety and security, pesticide-free goods, and social ties are all reasons why consumers are interested in SFSC. Other characteristics may vary based on the area or the user; for example, convenience is important to some but not all customers. A fraction of customers was also concerned about the price of a product. (Conner, Montri, Montri, & Hamm, 2009) identified a similar phenomenon, in which certain customers assessed local items to be of great quality and were willing to pay more for the benefit. Some shoppers, however, consider that local things should be less expensive. A specialized lifestyle, such as cooking, baking, or a specific interest in certain types of food, can also inspire people to shop at farmers' markets.

Consumers' demands for fresh, high-quality, pesticide-free meals were identified by (Johnson & Endres, 2011) as the primary drivers of local food purchases. The second objective is to decrease transportation emissions while limiting the production process' environmental effect. Third, transportation, processing, and packaging expenses for farmers should be decreased, allowing them to improve their profits.

Consumer trust is crucial when deciding whether to buy food from SFSCs, and when it does, it may have a positive behavioral influence, according to (Giampietri E. , Verneau, Del Giudice, Carfora, & Finco, 2017) .By building trust with consumers, it may be possible to remove consumer misunderstanding and foster unprecedented levels of customer and producer loyalty in SFSC.



## 4.2.2 Independent Variables

A number of independent variables will be postulated to influence the dependent variable previously discussed. The purpose of this section is to define these variables and discuss how they will affect the dependent variable.

### *4.2.2.1 Environmental Sensitivity & Awareness*

Ecological sensitivity refers to the importance placed on environmental or ecological concerns. Environmental sensitivity is a phrase used to indicate ecological sensitivity, or more properly, "affective reaction, sensation." It includes questions such as how important individuals believe environmental issues are, how much they know about environmental issues, and how much money government agencies spend on environmental protection (Thiery-Seror, 1996). Thus, the more consumers have higher environmental sensitivity the more consumers will establish an environmental identity and have the intention to buy from proximity.

Environmental awareness, according to some researchers, can be generally described as an attitude toward the environmental implications of human action (Ham, Mrćela, & Horvat, 2016). Environmental awareness may also be described as a person's ability to comprehend the connection between human activities, environmental quality, and their desire to participate in environmental activities (Liu, Vedlitz, & Shi, 2014) (Umuhire & Fang, 2016). Individuals that are environmentally aware are people who are aware of environmental issues and are worried about the impact of their business on the environment, according to this study (Gadenne, Kennedy, & McKeiver, 2009). Customers who are aware of the serious environmental situation we are in and the effect that companies have. It is hypothesized that the greater the

environmental awareness that customers have, the more likely they will establish an environmental identity and have the intention to buy from proximity.

#### *4.2.2.2 Environmental Knowledge, Values & Beliefs*

A customer's capacity to know/understand environmental ideas, concerns, and challenges, as well as model their actions, is defined by their environmental knowledge. In the context of eco-friendly product consumption, this information frequently aids in the activation of one's moral duty to engage in pro-environmental conduct (Han & Hyun, 2017). Consumers are becoming increasingly interested in learning more about the origins, safety, environmental practices and wholesomeness of the food they purchase. Consumers are also using social media to not only express their shopping and consumption preferences, but also to evaluate other people's suggestions and thoughts. This allows many food enterprises to gain consumer trust and loyalty, as well as a positive reputation (Röhr, Lüddecke, Drusch, Müller, & Alvensleben, 2005). Thus, the more consumers know about the environmental practices they will establish an environmental identity and have the intention to buy from proximity. Environmental values will be defined for the sake of this study as important life goals or standards that act as guiding principles in life. They may serve as a foundation for the creation of attitudes and as recommendations for behavior (Poortinga, Steg, & Vlek, 2004). The relationship between environmental care and knowledge, as well as the intention of customers to consume green products, was discovered to be mediated by functional and emotional values. The findings imply that if the functional value is deemed enough, eco-conscious clients will opt to re-consume green products (Demir, Rjoub, & Yesiltas, 2021). In other words, it is assumed that the more a consumer subscribes to environmental values, the more likely he or she will establish an environmental identity and will have an intention to buy from proximity.

#### *4.2.2.3 Environmental Norms & Health Consciousness*

Consumers have better access to local food production when they buy close to home, which increases the food's health and security (Brown, 2002). Because there are fewer varieties of food grown on smaller farms, cross-contamination is less frequent. Smaller farms have a track record of maintaining food safety and quality (Verraes, et al., 2015). Consumers' demands for fresh, high-quality, pesticide-free meals were identified by (Johnson & Endres, 2011) as the primary drivers of local food purchases. Thus, the more consumers have higher health consciousness the more they will establish an environmental identity and have the intention to buy from proximity.

#### *4.2.2.4 Environmental Attitude*

(Schiffman & Kanuk, 2004) describe attitude as a positive or negative predisposition that influences customers' behavior in a specific way. The influence on the environment, (Kelley, et al., 2019) underlined the necessity of studying customer sentiments regarding environmentally friendly packaging. For example, while (Akroush, Zuriekat, Al Jabali, & Asfour, 2018) claimed that attitudes influence intention, others claimed that attitudes and generations influence purchase behavior (Kelley, et al., 2019). In essence, the customer's assessment of the benefits of having an environmental management system will decide this attitude. It is believed that the more positive a customer's attitude toward an environmental management system is, the more likely he or she will establish an environmental identity and will have the intention to buy from proximity.

#### *4.2.2.5 Price of Ecofriendly Products*

Throughout the decision-making process, price is an important consideration (Ang, Leong, & Kotler, 2000). Previous research on price sensitivity and its relationship with the

intention to purchase an ecologically friendly product as a preceding factor has revealed that high prices have diminished consumers' environmental attitudes and behavior. Customers may be hesitant to purchase green items since they are more expensive than traditional ones (Malik, Singhal, & Tiwari, 2017).

#### *4.2.2.6 Product Attributes*

Garvin provides eight important quality dimensions or categories that may be used to structure strategic analysis: Performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality (Garvin, 1987).

#### *4.2.2.7 Trust*

Over the past few years, the requirement for consumers to be able to trace the food they eat has caused their desire to know how, where, and by whom food is produced to develop. Through direct contact and frequent interactions with farmers, consumers can establish a sense of trust that is mostly based on shared knowledge and mutual understanding (Hartmann, Klink, & Simons, 2015). In reality, through the typical SFSCs' face-to-face initiatives, producers and consumers can communicate, share, and exchange knowledge about food products, the production process, and their own personal values (Renting H. M., 2003). This lessens information asymmetry and encourages long-lasting, fresh loyalty.

### **4.2.3 Control Variables**

The controlling factors in the model will be addressed in detail in this section.

#### *4.2.3.1 Geographical Area*

Agrofood producers are generally established in Mount Lebanon where 43% of agro-industrial companies are found. The Bekaa district positions second as far as centralization of companies (18%), trailed by North Lebanon (11%), Beirut (8%), South Lebanon (8%), Nabatiyeh (6%), Baalback El Hermel (5%) lastly Akkar (1%) (Lebanon, 2017-2018).

Thus people living in agricultural areas might be more environmentally concerned and are more likely to establish and environmental identity and have the intention to buy from proximity.

#### *4.2.3.2 Demographics*

Several research have investigated the impact of demographic factors on environmental antecedents and behavior. These authors describe a variety of theories that have previously been investigated. The age, gender, education, and disposable income of the participants will be considered in this study.

In terms of age, (Roberts, 1996) found that the age factor has a significant impact on environmentally conscious customer behavior. According to the poll, older customers are more prone to engage in such conduct. Another study of Portuguese consumers (do Paco, Raposo, & Walter, 2009) found that those in the age categories 25-34 and 45-54 are the most ecologically conscious. Moreover (Sogari, Pucci, Aquilani, & Zanni, 2017) found out that some generations may be more environmentally friendly than others.

Concerning gender, studies showed that the female gender exhibits higher long-term consumer behavior. Women are more receptive to new experiences and are more interdependent than men, which explains this phenomenon (Dietz, et al., 2002) (Eagly, 2009) (Luchs, et al., 2012). Moreover, women consider pro-environmental behavior to be more than males, and the difference is substantial. Women are also more motivated (altruistically) than males. Furthermore, in terms of attitudes, the findings show that women are more worried about environmental concerns than males. Finally, women are more likely than males to engage in pro-environmental activities (30.95 percent vs 29.56 percent, respectively) (Vicente-Molina, Fernández-Sainz, & Izagirre-Olaizola, 2018).

With regards to education, three researches on demographics and environmental awareness found that people with a higher degree of education are more likely to engage in ecologically beneficial actions (Chan T. , 1996) (Roberts, 1996) (do Paco, Raposo, & Walter, 2009) (Hoffmann & Mutarak, 2020).

Finally in terms of income, it was illustrated that low-income individuals cannot purchase premium green items, but this does not rule out the possibility that low-income people are interested in green products (Gleim, Smith, Andrews, & Cronin, 2013). The data reveals a favorable link between income and green product spending. In other words, when income rises, customers will purchase more green items in the market (Norimah, et al., 2019).

As a conclusion, older people, who are most likely to be females, with higher education and high-income levels are more environmentally concerned, are more likely to establish and environmental identity and have the intention to buy from proximity.

#### 4.2.4 Research Hypothesis

- H1: There is a positive relationship between consumer environmental awareness and the intention to buy from proximity.
- H2: There is a positive relationship between consumer environmental sensitivity and the intention to buy from proximity.
- H3: There is a positive relationship between consumer environmental knowledge and the intention to buy from proximity.
- H4: There is a positive relationship between consumer environmental values, beliefs and the intention to buy from proximity.
- H5: There is a positive relationship between consumer environmental norms and the intention to buy from proximity.
- H6: There is a positive relationship between consumer health consciousness and the intention to buy from proximity.
- H7: There is a positive relationship between consumer environmental attitude and the intention to buy from proximity.
- H8: There is a positive relationship between product quality and the intention to buy from proximity.
- H9: There is a negative relationship between the price of local products and the intention to buy from proximity.
- H10: There is a positive relationship between consumer trust and the intention to buy from proximity.
- H11: Demographics (age, gender, family size, educational level, marital status, disposable income) controls the relationships between the independent variables

(environmental awareness, attitude, knowledge, values, beliefs and norms, sensitivity, health consciousness, product quality and trust) and the dependent variable the intention to buy from proximity.

- H12: The geographical area controls the relationships between the independent variables (environmental awareness, attitude, knowledge, values, beliefs and norms, sensitivity, behavior and health consciousness) and the dependent variable the intention to buy from proximity.



## **CHAPTER FIVE: DATA ANALYSIS**

This chapter outlines the results of data analysis. The study predicted a positive relation between environmental awareness, attitude, knowledge, values, beliefs and norms, sensitivity, behavior and health consciousness and the intention to buy from proximity. Moreover, the quality, price, and relation with the producers (trust) was studied.

In order to study the research hypotheses, factor analysis was done to reduce the number of factors describing the variables and then spearman correlation as well as linear regression was done using SPSS to formulate a model and analyze the relationship between the dependent and independent variables.

The total of 252 surveys were analyzed by factor analysis, spearman correlation and regression model using SPSS version 26. Online surveys were used to gather the data. By requiring respondents to provide a response to each survey question, there were no missing values. Data screening and data processing for missing values were therefore not required.

A reliability statistics test was done resulting with a Cronbach's alpha between 0.8 and 0.9 which is a good result and indicates reliability.

### **Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.877	.883	14

*Table 7: Reliability Statistics*

Confirmatory factor analysis CFA was examined to verify the validation of items on the constructs. A dataset's principal components factor isolates the most variance. This method is used to break down many variables into smaller components (Hair J. F., 2007). Varimax rotation, also known as Kaiser-Varimax rotation, was used as it optimizes the variance of the squared loadings, where "loadings" refers to correlations between factors and variables. This typically leads to low factor loadings for the other variables and high factor loadings for a smaller subset of the variables. The remaining components are all multi-eigenvalued (Stephens, 1996). Simply said, the outcome is that a few key variables are emphasized, making it simpler to understand your findings. Items that did not have significant factor loadings on any factors ( $< 0.50$ ), and factors with eigenvalues of less than 1 were considered for deletion (Hair J. F., 1998). Based on these criteria and an examination of the representativeness of each item identified as a candidate for deletion, final choices about item deletion were made.

- The factor analysis that was done to reduce the number of factors concluded the following factors:

<b>Section</b>	<b>Factor 1</b>	<b>Factor 2</b>
Environmental Sensitivity & Awareness	Environmental Sensitivity	Environmental Awareness
Environmental Knowledge,	Environmental Values &	Environmental Knowledge

Values & Beliefs	Beliefs	
Environmental Health Consciousness & Norms	Environmental Health Consciousness	Environmental Norms
Environmental Attitude	Environmental Attitude	-
Price	Income	Price
Quality of the product	Product Manufacturing	Product Flavor
Proximity	Quality	Trust

*Table 8: Factor Analysis*

### **5.1 Descriptive Analysis of the Sample**

The purpose of this section is to describe the sample respondents. Demographic information collected included (age, gender, educational level, family size, marital status, geographical area and disposable income). The total sample comprised 252s respondents: 59.1 % females and 40.9% males. The respondents' age was mostly distributed between 2 groups age range: 43.3 % (<30) and 39.3% (between 30 and 45) which suggest a rather young age sample. Around three quarters of the respondents are university level holders (31.7 % holding a master's degree and 42.1% an undergraduate degree). This indicates an educated sample. Around half of the sample are married (51.2%) and 31% of the sample come from a family constituted of 4 members. Most of the sample live on the coast of Lebanon (21% in the North and 19.8 % in the South). These geographical areas are known to have agricultural lands. And finally, the majority of the respondents' disposable income is between 50\$ and 300\$ (42.1%) and this is due to the crash in the economy and devaluation of the currency. It is worth noting that when asked about what proximity means to the sample more than 50% of the sample associated proximity with

geographical presence, trust building and sharing of knowledge. The figures below show the detailed percentages.

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<30	109	43.3	43.3	43.3
	30-45	99	39.3	39.3	82.5
	46-60	35	13.9	13.9	96.4
	>60	9	3.6	3.6	100.0
Total		252	100.0	100.0	

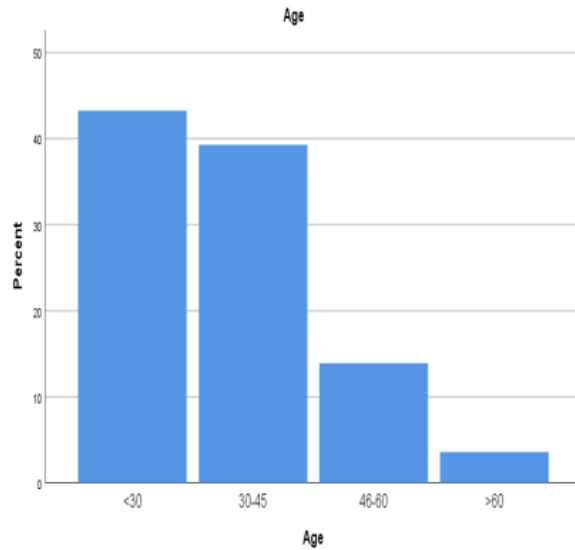


Figure 38 : Age

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	103	40.9	40.9	40.9
	Female	149	59.1	59.1	100.0
Total		252	100.0	100.0	

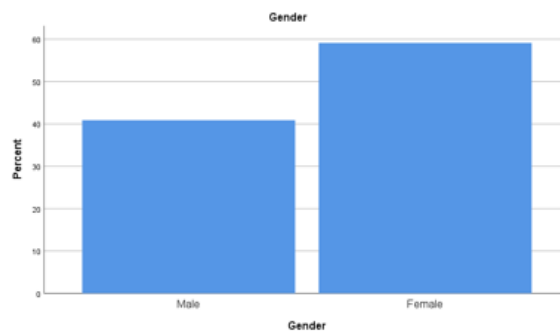
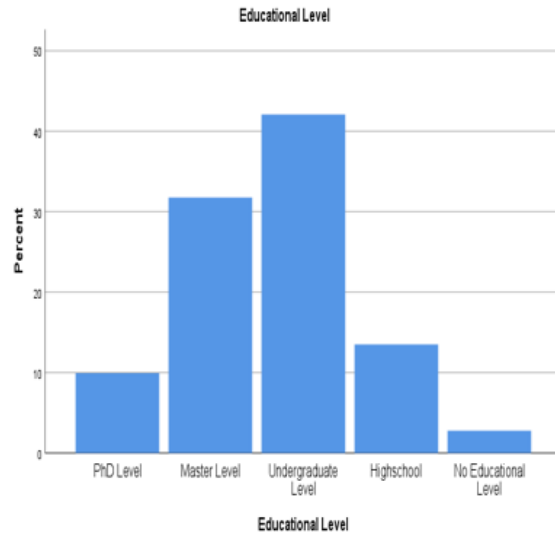


Figure 39: Gender

**Educational Level**

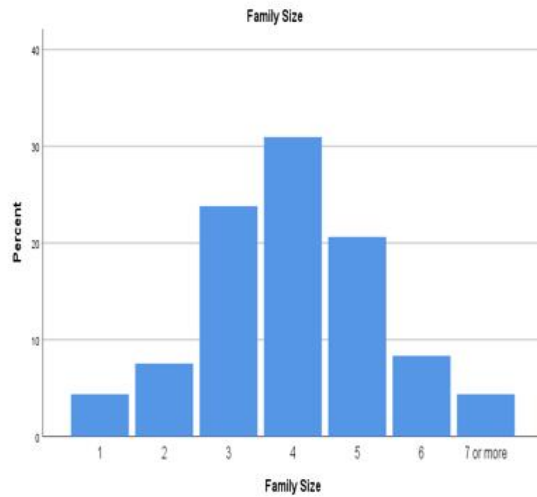
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PhD Level	25	9.9	9.9	9.9
	Master Level	80	31.7	31.7	41.7
	Undergraduate Level	106	42.1	42.1	83.7
	Highschool	34	13.5	13.5	97.2
	No Educational Level	7	2.8	2.8	100.0
	Total	252	100.0	100.0	



*Figure 40: Educational Level*

**Family Size**

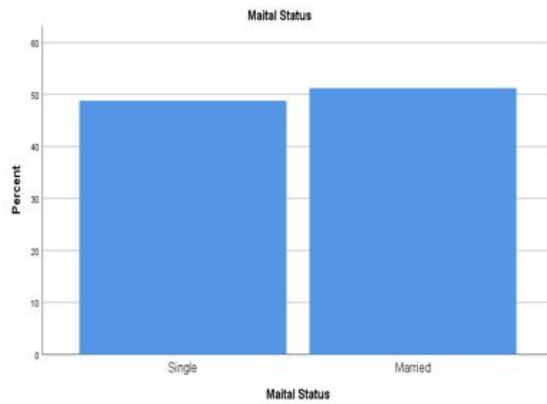
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	4.4	4.4	4.4
	2	19	7.5	7.5	11.9
	3	60	23.8	23.8	35.7
	4	78	31.0	31.0	66.7
	5	52	20.6	20.6	87.3
	6	21	8.3	8.3	95.6
	7 or more	11	4.4	4.4	100.0
Total		252	100.0	100.0	



*Figure 41: Family Size*

**Marital Status**

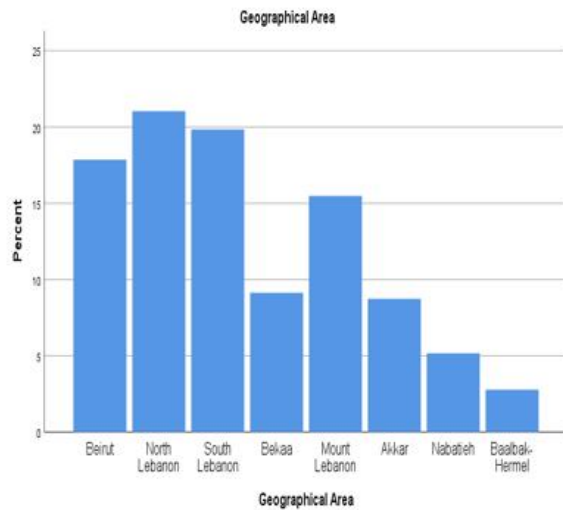
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	123	48.8	48.8	48.8
	Married	129	51.2	51.2	100.0
	Total	252	100.0	100.0	



*Figure 42: Marital Status*

**Geographical Area**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Beirut	45	17.9	17.9	17.9
	North Lebanon	53	21.0	21.0	38.9
	South Lebanon	50	19.8	19.8	58.7
	Bekaa	23	9.1	9.1	67.9
	Mount Lebanon	39	15.5	15.5	83.3
	Akkar	22	8.7	8.7	92.1
	Nabatieh	13	5.2	5.2	97.2
	Baalbak-Hermel	7	2.8	2.8	100.0
	Total	252	100.0	100.0	



*Figure 43: Geographical Area*

Disposable Income					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 50\$	35	13.9	13.9	13.9
	50\$-300\$	106	42.1	42.1	56.0
	301\$-550\$	57	22.6	22.6	78.6
	551\$-800\$	20	7.9	7.9	86.5
	801\$-1050\$	10	4.0	4.0	90.5
	more than 1050 \$	24	9.5	9.5	100.0
	Total	252	100.0	100.0	

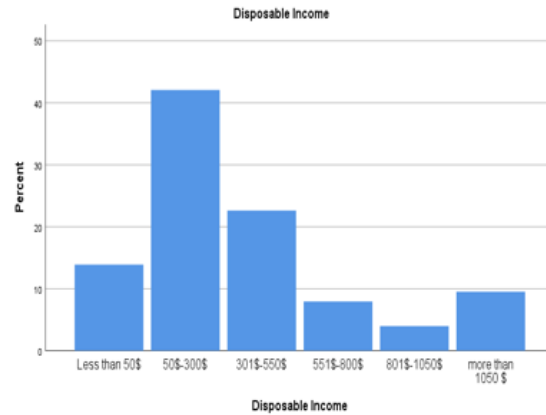


Figure 44: Disposable Income

Which of the below definitions appeal to you more when explaining proximity? You may select more than one.	Percentage
the short distance and direct interaction between producers and consumers	53.5%
the development of trust relationships between agriculturalists and consumers	59.1%
the agreement on environmental and social practices between producers and consumers	49.2%
the common knowledge of farmers and customers regarding production processes	54.7%
the ways prices are set/negotiated, and the duration of the trade relationship	26.5%

Table 9 Proximity Definition

Proximity can be defined in different ways whether geographical, social, organizational, cognitive or institutional (Dubois, 2018). The sample associated proximity with the short distance between them and the producer as well as the common knowledge sharing and trust relationship between the actors giving that proximity according to (Edelmann, Fernanda, Quiñones-Ruiz, & Penker, 2019) means to them more as geographical, cognitive and social.

## 5.2 Spearman Correlations

		FAC_Proximity	
Spearman's rho	Age	Correlation Coefficient	.070
		Sig. (2-tailed)	.266
		N	252
	Gender	Correlation Coefficient	-.026
		Sig. (2-tailed)	.681
		N	252
	Education al Level	Correlation Coefficient	.060
		Sig. (2-tailed)	.342
		N	252
	Family Size	Correlation Coefficient	-.117
		Sig. (2-tailed)	.063
		N	252
	Marital Status	Correlation Coefficient	.081
		Sig. (2-tailed)	.201
		N	252
	Geographi cal Area	Correlation Coefficient	-.050
		Sig. (2-tailed)	.428
		N	252
Disposabl	Correlation Coefficient	-.083	



e Income	Sig. (2-tailed)	.187
	N	252
Mean	Correlation Coefficient	.399**
Environm	Sig. (2-tailed)	.000
ental	N	252
Sensitivity		
Mean	Correlation Coefficient	.464**
Environm	Sig. (2-tailed)	.000
ental	N	252
Awarenes		
s		
Mean	Correlation Coefficient	.347**
Environm	Sig. (2-tailed)	.000
ental VBN	N	252
Mean	Correlation Coefficient	.428**
Environm	Sig. (2-tailed)	.000
ental	N	252
Knowledg		
e		
Mean	Correlation Coefficient	.240**
Health	Sig. (2-tailed)	.000
Conscious	N	252
ness		

Mean	Correlation Coefficient	.407**
Norms	Sig. (2-tailed)	.000
	N	252
Mean	Correlation Coefficient	.449**
Environm	Sig. (2-tailed)	.000
ental	N	252
Attitude		
Mean	Correlation Coefficient	.484**
Price	Sig. (2-tailed)	.000
	N	252
FAC_Inco	Correlation Coefficient	0.465
me	Sig. (2-tailed)	.000
	N	252
Mean	Correlation Coefficient	.221**
Product	Sig. (2-tailed)	.000
Manufactu	N	252
ring		
Mean	Correlation Coefficient	.264**
Flavor	Sig. (2-tailed)	.000
	N	252
Mean	Correlation Coefficient	.751**
Quality	Sig. (2-tailed)	.000

	N	252
Mean	Correlation Coefficient	.858**
Trust	Sig. (2-tailed)	.000
	N	252
FAC_Prox	Correlation Coefficient	1.000
imity	Sig. (2-tailed)	.
	N	252

*Table 10 Spearman Correlations*

- As shown in the correlation table between the intention to buy from proximity and the variables the significant bivariate association was noticed between the intention to buy and all variables, since the p-value is less than 0.005, except the demographics (age, gender, marital status, family size, disposable income and geographical area).
- The correlations are positive indicating a relationship that travels at the same trajectory. As environmental sensitivity, awareness, VBN, knowledge, health consciousness, norms, attitude, product price, income, product manufacturing, product flavor, product quality and trust increase the intention to buy from proximity increases.
- Since the higher the rho coefficient is the higher stronger the magnitude relationship then is results in having trust (0.858), quality (0.751), product price (0.484), income (0.465) environmental awareness (0.464) and environmental attitude (0.449) as the strongest magnitude.

The analysis's findings showed that respondents:

- correlate greatly trust with the intention to buy from proximity. Farmers and customers are reconnected by SFSCs (Kirwan, 2004), and these face-to-face encounters foster

consumer trust that influences their decision to buy products from short chains (Holloway & Kneafsey, 2000). Trust, according to (Ding, Veeman, & Adamowicz, Functional food choices: Impacts of trust and health control beliefs on Canadian consumers' choices of canola oil. , 2015), is a complicated and difficult-to-measure concept that is crucial for decision-making, particularly when there is little or difficult-to-assess information available, as is the case when buying food. Because it may address the loss of both knowledge and control over the supply chain as well as influence food choices, customer trust can therefore play a crucial role in resolving this issue, particularly in the case of SFSCs.

- value quality and relate it to the intention to buy from proximity. In fact, farmers are given a channel that is suited to small (and even variable) numbers and high/special quality, which are nonetheless valued on the market, through short food supply chains. Customers now have higher expectations for many food-related qualities as quality, integrity, safety, variety, and services (Van der Vorst, 2005).
- consider price when intending to buy from proximity. The consolidation of economic viability, environmental sustainability, and social interaction characteristics is closely correlated with the detachment from all intermediate stakeholders of a conventional supply chain, as they permit fair prices that are not disproportionate to the food real value, allow for reduction in the environmental impact of food, and establish new social relations (Le Velly, Goulet, & Vinck, 2021).
- consider a relation between income and buying from proximity. According to Robinson and Farmer, main costs include time, gas, materials, equipment, and various types of fees like insurance, licensing fees, etc. This is one of the reasons why customers at farmers'

markets tend to have higher income and better educated because they are more likely to spend more for foods from the proximity (Robinson J, 2017).

- consider environmental awareness is related to the intention to buy from proximity. Local food systems offer numerous social advantages, including ecologically friendly growing techniques, high-quality, fresh food, community involvement, re-connections between rural and urban regions, and regional economic growth. By becoming closer to producers, consumers become more aware of these environmental societal advantages, building knowledge and trust as the foundation of their business relationship. These advantages frequently underpin local food system practices (Karner, Eisinger, & Niemeier, 2010).
- attitudes regarding buying from proximity were favorable. According to (Anvar, 2014), customers' beliefs also shape their attitudes, which are then translated into their intentions and behavior. This is in line with Ajzen's theory of planned behavior. The researchers went on to say that there was a positive association between behavior and attitude, which makes it clear that people are more inclined to purchase local foods if they have a positive attitude about green products.

### 5.3 Model Summary

Table 11: Model Summary

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.918 <sup>a</sup>	.843	.835	.38996439	.843	106.857	12	239	.000

a. Predictors: (Constant), Mean Trust, Mean Product Manufacturing, Mean Environmental VBN, FAC\_Income, Mean Environmental Awareness, Mean Norms, Mean Flavor, Mean Environmental Knowledge, Mean Quality, Mean Environmental Sensitivity, Mean Health Consciousness, Mean Price

This table generated in a linear regression test in SPSS is Model Summary. It gives the details about the characteristics of the model. In this case trust, product manufacturing, environmental VBN, income, environmental awareness, norms, flavor, environmental knowledge, quality, environmental sensitivity, health consciousness, price.

- The R-value which represents the correlation between the dependent and independent variables is greater than 0.4 (in this case 0.918) which leads to further analysis.
- R-squared which represents the total variation for the dependent variables that could be explained by the independent variables. A value greater than 0.5 shows that the model is effective enough to determine the relationship. In this case 84.3% is explained.
- In multiple regression, the adjusted R-square demonstrates the generalization of the results, or the variation of the sample results from the population. A minimal difference

between R-square and Adjusted R-square must exist. In this case the value is 0.835 which is not far than 0.843.

The model summary table is sufficient to go on to the following step as a result.

## 5.4 ANOVA Table

Table 12: ANOVA

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	194.999	12	16.250	106.857	.000 <sup>b</sup>
	Residual	36.345	239	.152		
	Total	231.344	251			

a. Dependent Variable: FAC\_Proximity

b. Predictors: (Constant), Mean Trust, Mean Product Manufacturing, Mean Environmental VBN, FAC\_Income, Mean Environmental Awareness, Mean Norms, Mean Flavor, Mean Environmental Knowledge, Mean Quality, Mean Environmental Sensitivity, Mean Health Consciousness, Mean Price

The following table's elements are important for understanding the findings:

- P-value/Sig value: Typically, the study's significance level is set at the 5% level or the 95% confidence interval. Consequently, the p-value must be lower than 0.05. It is .000 in the table above. The outcome is significant as a result.

- the F-ratio measures how well the total regression model fits the data. According to the table,  $F(12, 239) = 106.857$ ,  $p .0005$ , the independent factors statistically substantially predict the dependent variable (i.e., the regression model is a good fit of the data).

### 5.5 Coefficient Table

The relationship's strength, or how important a variable is to the model and how much it affects the dependent variable, is shown in the table below. The hypothesis testing for a study is aided by this analysis.

		Coefficients <sup>a</sup>						
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-2.236	.207		-10.784	.000	-2.644	-1.827
	Mean Environmental Sensitivity	-.064	.052	-.045	-1.246	.214	-.166	.037
	Mean Environmental Awareness	.073	.033	.080	2.210	.028	.008	.137
	Mean Environmental VBN	.027	.035	.028	.763	.446	-.042	.096
	Mean Environmental Knowledge	.018	.031	.020	.585	.559	-.042	.078
	Mean Health Consciousness	-.038	.034	-.043	-1.108	.269	-.105	.029



Mean Norms	.031	.029	.041	1.070	.286	-.026	.087
FAC_Income	.002	.114	.002	.022	.983	-.221	.226
Mean Price	.073	.079	.095	.918	.360	-.084	.230
Mean Product Manufacturing	-.038	.043	-.029	-.881	.379	-.123	.047
Mean Flavor	.052	.026	.064	1.963	.051	.000	.103
Mean Quality	.398	.047	.305	8.438	.000	.305	.491
Mean Trust	.482	.031	.581	15.645	.000	.422	.543

a. Dependent Variable: FAC\_Proximity

*Table 13: Coefficient Table*

The above table shows the following results:

- There is a significant effect between the intention to buy from proximity and environmental awareness, quality and trust since the sig. value are 0.000 and 0.028 which are less than the acceptable value which is 0.05. This means that with a 1% increase in environmental awareness, quality and trust, the intention to buy from proximity will increase by (0.73) (0.398) (0.482) respectively.
- This result indicates that when customers' environmental awareness increases, their intention to buy from proximity increases.
- Quality showed significance as well and proved that with the increase in quality by presenting fresher products with higher quality the intention to buy from proximity increases.
- Trust as well has a positive significance as customers believe that when they can trust the producers with their production methods to provide pesticide free products and ensure food safety and security their intention to buy from proximity increases.

- The constant in this model is negative 2.323 which indicates that without the price, quality and trust the customer is not willing to buy from proximity.

The below equation based on this model is extracted:

$$Y_{\text{intention to buy from proximity}} = -2.323 + (0.73) \text{ environmental awareness} + (0.398) \text{ quality} + (0.482) \text{ trust} + e$$

The above results gives us several indications towards the Lebanese case study. First, many Lebanese consumers prioritize trust and quality when it comes to their food. Short food supply chains, which involve direct relationships between consumers and local producers or farmers, often provide a sense of transparency and assurance about the origin and quality of the food. This can be particularly appealing in a country where concerns about food safety and quality have been raised in the past. Second, Lebanon has a rich agricultural heritage, and some consumers are motivated to support the local economy by purchasing food directly from local producers. Short food supply chains facilitate this connection, allowing consumers to contribute to the local agricultural sector and promote sustainable farming practices. Third, short food supply chains often emphasize the use of fresh and seasonal produce. Many Lebanese consumers appreciate the taste and nutritional benefits associated with consuming food that is harvested at its peak. Additionally, short supply chains reduce the time between harvest and consumption, which can enhance the overall freshness of the products. Finally, growing awareness of environmental issues has influenced consumers towards sustainability. Short food supply chains typically involve fewer transportation miles and less packaging, reducing the carbon footprint associated with food distribution. Lebanese consumers concerned about the environment may be more inclined to support these sustainable practices.

It is interesting to note that based on the correlations and regressions it is concluded that there is a relation between environmental sensitivity, awareness, VBN, knowledge, health consciousness, norms, attitude, product price, income, product manufacturing, product flavor, product quality, trust, and intention to buy from proximity however the environmental awareness, quality and trust are more important than the environmental attitude as a whole. This indicates that the consumer is taking into consideration the environmental aspects, however the product itself as well as the relation with the producer means much more to them and is more significant to increase their intention to buy from proximity.

Thus, based on all the above and based on the model suggested, the H1, H8 and H10 are the ones significant.

- H1: There is a positive relationship between consumer environmental awareness and the intention to buy from proximity.
- H8: There is a positive relationship between product quality and the intention to buy from proximity.
- H10: There is a positive relationship between consumer trust and the intention to buy from proximity.

The literature indicated that the variables in the model will give a positive result and will support the hypothesis, however it should be noted that this thesis was conducted in a developing country passing through an economic and political crisis which affects the results.

When looking at the price for example, I believe the result is based on a cultural foundation as when you buy from your neighbor shop you will have several advantages: the negotiation of the price, the neighbor sense were you will automatically have a better price with comparison to buying from a stranger and finally the concept of a tab bill sheet in which a person is not obliged

to pay directly for the items and can always have the option on paying at the beginning of the month.

Moreover, the price of the domestically produced foods is much cheaper than foreign food products due to subsidies from the government, low labor cost and lobbying whereas the cost of foreign food products is higher due to high logistic, transportation and traffic costs.

Regarding the environmental variables what justifies their insignificance may be due to the difference in language interpretation of the terms. In Arabic the word awareness means the ultimate level you can reach regarding any topic so I believe that the sample put the other variables like attitude, VBN, knowledge sensitivity under the umbrella of awareness Moreover, maybe the phrases were not clear enough to a sample who are not very knowledgeable in this science and this explained the big number of neutral answers.

# **CHAPTER SIX : CONCLUSION, CONTRIBUTIONS & LIMITATIONS**

## **6.1 Recapping the Thesis**

Chapter 1, the introduction of this research, sheds light on the long-term stability of the supply chain that depends on the connection between the buyers and the sellers. In recent years, short food chains (SFSCs) have become more prevalent (Aguar, DelGrossi, & Thomé, 2018) . They can promote employment growth, improve customer food quality, and promote local and regional growth (Aguar, DelGrossi, & Thomé, 2018) (Falguieres, et al., 2015).

The aim and objectives of this thesis were found upon the need to investigate the environmental attitude, awareness, values, beliefs and norms, knowledge & environmental sensitivity of consumers as well as the relationship with the producers and price of the products and study what from the mentioned drive their intention to buy from proximity if they do.

Moreover, the chapter mentioned the research objectives, questions and conduct of study as well as the research procedure that was divided into eight phases. The chapter also stated the research philosophy and approach. In this research the research philosophy is positivism one in which the understanding of the social world is based on an objective way where I dissociated myself from personal values generating brief, clear, and concise discussions. The research approach is based on quantitative approach a questionnaire is conducted and data is gathered and analyzed using SPSS.

Chapter two conducted a systematic literature review to analyze and integrate existing empirical SFSCs studies with a focus on their sustainability. Proximity in SFSC is studied as

well. On another hand consumers environmental attitude, awareness, values, beliefs and norms, knowledge & environmental sensitivity, trust, price and product quality attributes are explored. The chapter concluded with presenting previous models as well as the theories adopted as a measuring scale.

Chapter three included a thorough study on Lebanon as it is the base of the study. The agri-food industry is studied, and the different supply chains present as well as the main actors and sectors were discussed.

Chapter four explained the research methodology, design, strategy, and the design of data collection in detail. Moreover, it introduced the thesis model and explained the variables. All hypothesis were stated.

With the explicit research process guide from chapter four, quantitative data collected from consumers through online questionnaire collection were presented in chapter five. Then the results were analyzed and linked back to the theoretical material in Chapter two through hypotheses measurement.

A quick review of this thesis' earlier chapters demonstrates the sets of theoretical and empirical contributions that this work has produced. This study can be used to highlight potential directions for further research. This chapter's examination of the major empirical results and appraisal of the study's goals and objectives is followed by a discussion of these contributions and future research.

## 6.2 Key Empirical Findings

The key empirical findings are from the data analysis of 252 consumers in Lebanon. The discussion of this study results in 4 sections. The first section discusses environmental awareness, sensitivity, knowledge, values & beliefs, norms, health consciousness and attitude. The second section tackled the price of environmentally friendly products, the third asked quality dimension questions and the fourth presented the questions about proximity, trust, and intention to buy from SFSCs.

The outcomes of the study revealed that respondents: highly correlated trust with the intention to buy locally. SFSCs help to re-connect farmers and consumers, and these in-person interactions increase consumer trust, which affects their choice to purchase goods from short chains. Customer trust can therefore play a critical role in resolving this issue, particularly in the case of SFSCs, as it may address the loss of both information and control over the supply chain and influence food choices. Moreover, they value quality and connect it to the desire to purchase locally. Today's consumers have increased expectations for many aspects of food, including quality, integrity, safety, variety, and services. Price and income had a relation as well with the intention of buying from proximity. Consumer attitude and awareness relation with the intention to buy from proximity was favorable as well. Moreover, based on the regression model environmental awareness, quality and trust were the most significant. Thus, based on all the above and based on the model suggested, H1, H8 and H10 are the ones significant.

Research Questions	Answers (hypothesis evaluation)	Results
1. Does consumer environmental attitude affect the intention to buy from proximity?	H1: There is a positive relationship between consumer environmental awareness and the intention to buy from proximity.	Supported
	H2: There is a positive relationship between consumer environmental sensitivity and the intention to buy from proximity.	Rejected
	H3: There is a positive relationship between consumer environmental knowledge and the intention to buy from proximity.	Rejected
	H4: There is a positive relationship between consumer environmental values, beliefs and norms and the intention to buy from proximity	Rejected
	H5: There is a positive relationship between consumer environmental norms and the intention to buy from proximity.	Rejected
	H6: There is a positive relationship between consumer health consciousness and the intention to buy from proximity.	Rejected
	H7: There is a positive relationship between consumer environmental attitude and the intention to buy from proximity.	Rejected
2. How product quality attributes impact the intention to buy from SFSC?	H8: There is a positive relationship between product quality and the intention to buy from proximity.	Supported



3. How does price affect the intention to buy from proximity?	H9: There is a negative relationship between the price of local products and the intention to buy from proximity.	Rejected
4. Does the relationship with the producers and trust affect the intention to buy from proximity?	H10: There is a positive relationship between consumer trust and the intention to buy from proximity.	Supported
5. Do demographics affect the consumer intention to buy from proximity?	H11: Demographics (age, gender, family size, educational level, marital status, disposable income) controls the relationships between the independent variables (environmental awareness, attitude, knowledge, values, beliefs and norms, sensitivity, health consciousness, product quality and trust) and the dependent variable the intention to buy from proximity.	Rejected
	H12: The geographical area controls the relationships between the independent variables (environmental awareness, attitude, knowledge, values, beliefs and norms, sensitivity, behavior and health consciousness) and the dependent variable the intention to buy from proximity.	Rejected

*Table 14: Research Questions*

## **6.3 Contributions**

### **6.3.1 Theoretical Contributions**

This thesis adds to the expanding knowledge base on managing short food supply chains and buying from proximity as well as the larger body of knowledge about consumer environmental attitude.

By focusing solely on the practical practices of SFSCs and their influence on the social, economic, and environmental elements of sustainability, a thorough literature assessment has been carried out. Because there is a lack of empirical data in the literature that examines the connection between sustainability and SFSCs, this examination of the literature is essential for further investigation. The thesis focuses on the environmental sustainability pillar and the effect of consumer environmental attitude on the intention of buying from proximity.

However, much recent research in this field has concentrated on Europe and other developed economies, and there is little empirical data from developing countries. It's important to research SFSCs in developing countries as one of the key benefits of SFSCs is that they can increase access to locally grown, fresh food. Additionally, they can support small-scale farmers and producers who may have trouble competing with big agribusinesses and having limited access to markets. Additionally, SFSCs can lessen the environmental impact of long-distance travel and the use of packing materials, which can help to maintain the environment.

This study highlights the significance of carrying out this empirical research in the Lebanese case. Theoretical frameworks have also been taken from current literature and analyzed.

This distinctive and innovative model contributes to the theories from the following areas by creating and adopting a theoretical framework that matches the Lebanese setting in this study.

The study created a relation between consumer environmental attitude and intention to buy as well as short food supply chain. It covered two main areas taking into consideration main factors such as quality attributes, trust and price. This model creates an interesting approach and by utilizing SPSS, this study offers a more reliable way to investigate the validity and reliability of the quantitative study in the SFSCs area, which is a growing statistical approach in supply chain management.

Moreover, it showed that short food supply chains challenge the traditional understanding of the linear and globalized food system. The thesis can contribute to the theoretical understanding of alternative food systems and their potential to reshape the dominant food system paradigm. It can explore concepts such as food sovereignty, resilience, and localization within the broader framework of food systems theory.

On the other hand, studying consumer attitudes and behavior towards short food supply chains can provide theoretical insights into the factors influencing consumer choices in the context of food purchasing. The thesis can contribute to the theoretical understanding of factors such as trust, quality perception, environmental concerns, and the role of local economies in shaping consumer preferences.

Furthermore, short food supply chains often operate within specific governance structures and policy frameworks. The thesis can explore the theoretical implications of alternative governance models and policies that support and promote short food supply chains. It can

contribute to theories of food governance, policy-making, and institutional arrangements that foster sustainable and localized food systems.

And finally, short food supply chains have the potential to address issues of food justice and equity by providing access to fresh, nutritious food in underserved communities. The thesis can explore the theoretical dimensions of food justice, equity, and food security in relation to short supply chains, shedding light on the potential for these models to address inequalities in the food system.

These theoretical implications can contribute to the academic discourse in various disciplines, including food studies, agricultural economics, sustainability studies, sociology, and public policy. They can help advance our understanding of alternative food systems, consumer behavior, governance, sustainability, and social justice in the context of short food supply chains.

### **6.3.2 Practical Contributions**

Academic scholars and governmental agencies are working with SFSCs participants to analyze their shared actions and motives in SFSCs practices. Participants and policymakers can benefit from the study's practical implications by having a greater understanding of and ability to manage sustainable SFSCs.

The thesis indicates that taking part in SFSCs is a favorable approach and the development of interactions with consumers to foster a pleasant working environment, as well as the establishment of collaborative venues through which fellow farmers could share information create a trust relationship with consumers and exchange knowledge, are effective incentives for farmers to work together on SFSCs practices. Farmers should be motivated to create sustainable

planting and marketing practices to showcase high-quality and environmentally friendly goods by realizing the benefits of adopting and implementing sustainability in their SFSCs.

Moreover, the study discovered the effect of the influence of the adoption of environmentally sustainable SFSCs on customers' intention to buy. Through their participation in SFSCs, customers may support local growth by purchasing goods made in the area. Therefore, the most important drivers to improve customers' intention purchasing behavior in SFSCs include fair trade for farmers, increased animal welfare, greater environmental protection through fewer food miles and pesticide consumption, and the most prevalent concern about food quality. As a result, working with farmers to build sustainable SFSCs increases customer motivation, which can enhance food quality, farmer earnings, and local economic growth.

Finally, this research will aid in the creation of local and regional policies to support and monitor sustainable farming practices and to entice farmers and consumers to embrace SFSCs practices to support local development.

### **6.3.3 Lebanon Contributions**

A region where the Mediterranean Sea meets rough mountain ranges, where ancient ruins coexist with contemporary buildings, and where the people are as friendly and inviting as the sun that shines upon their land, Lebanon is a country of great beauty and a rich cultural legacy. However, for those who have visited Lebanon themselves, this small country has a particular place in their hearts that goes beyond its aesthetic and cultural appeal. It is a location that stirs up a range of feelings, from the pure delight of indulging in its vibrant food scene to the agonizing sorrow of seeing its battles and hardships. In spite of hardship, hope and fortitude flourish in Lebanon, a country of opposites, and even in the worst of circumstances, the fierce determination of its inhabitants can be seen. Anyone who has had the honor of calling it home or merely

experiencing its magic will always bear a lasting impression of this location that captures the imagination, stirs the soul, and leaves an everlasting impression.

In Lebanon, there are many different actors involved in the manufacturing, distribution, and retail of food goods, making the food supply chains complicated and multidimensional.

A broad agricultural industry in Lebanon produces a range of crops, including fruits, vegetables, grains, and cattle, at the production level. Small-scale farmers who frequently sell their food directly to customers or at neighborhood markets cultivate a lot of these products. Larger agribusinesses, however, also contribute significantly to the production of some products, like citrus fruits and tobacco.

Short food supply chains, which connect producers and customers directly, cutting out middlemen and shortening the distance that food travels, have gained popularity in Lebanon in recent years. This prompted the creation of programs like farmers' markets, community-supported agricultural projects, and online channels that link customers with regional producers.

Short food supply chains (SFSC) in Lebanon should be studied for a number of reasons:

1. Food security: Due to a number of circumstances, including economic instability, political instability, Beirut port explosion and the COVID-19 pandemic, Lebanon has been experiencing a food security crisis. The SFSCs can contribute to a rise in the accessibility and availability of locally produced food, enhancing the nation's food security.
2. Economic advantages: Researching SFSCs in Lebanon can reveal chances to boost the regional economy. Supporting regional producers can boost the economy by generating money, jobs, and other benefits.

3. Environmental advantages: SFSCs can lessen the carbon impact brought on by long-distance travel and the usage of packing materials. They can support the preservation of natural resources and sustainable farming methods.
4. Health benefits: Locally grown food is frequently more wholesome and fresher than food that has traveled great distances. Studying SFSCs in Lebanon can support the development of healthy eating habits and enhance general health.
5. Cultural preservation: SFSCs can support cultural diversity and help maintain traditional food systems. Through the assistance of SFSCs, Lebanon's unique culinary culture may be cherished and perpetuated.

The thesis results show that Lebanese people value trust, product attributes, and environmental awareness when intending to buy food items from proximity.

The Lebanese culture is fundamentally based on trust, which also applies to the culinary sector. Customers in Lebanon prefer to purchase food from reliable vendors including neighborhood farmers, small-scale producers, and family-run businesses. Locally produced food goods with an open supply chain have a higher chance of earning their trust. When choosing which foods to buy, Lebanese customers frequently rely on recommendations from friends and family and word of mouth.

Additionally, Lebanese customers value product qualities because they want to know what they are consuming and purchasing. Consumers in Lebanon place a high value on fresh, high-quality food, and they are prepared to pay more for goods that live up to their expectations. They prefer natural and organic items and are interested in those that are free of harmful substances,

hormones, and antibiotics. Consumers in Lebanon are also interested in the nutritional content of the food they eat, and they favor healthy foods.

Finally, Lebanese consumers are placing a greater emphasis on environmental awareness. Lebanese customers are more inclined to support sustainable methods because they are concerned about the effects of food production and distribution on the environment. They favor purchasing food items that are made locally, have little environmental impact, and are packed sustainably. Consumers in Lebanon are also more willing to support businesses and goods with a solid environmental track record.

In conclusion, Lebanese consumers place a high value on trust, product attributes, and environmental awareness when deciding whether to purchase food from proximity because these aspects are consistent with their cultural values, preferences, and concerns. Lebanese consumers can make knowledgeable judgments about the food they eat and support environmentally friendly activities by giving these things priority.

#### **6.4 Limitations & Future Recommendations**

Despite the research's substantial contributions, several limitations must be noted since they may serve as the foundation for future studies on sustainable SFSCs in Lebanon and the related literature.

Firstly, the current study highlighted and added the linkage between environmental sustainability and environmental consumer attitude and intention to buy from SFSCs, however it



would be interesting to study the economic and social impact and intention to buy from proximity.

Secondly, consumers perspective was only taken due to the instable situation in Lebanon as consumers can be reached online, however taking the farmers perspective can also be a future direction. Future research can address this limitation by obtaining data from farmers to understand their perspective of sustainable SFSCs and why farmers might participate in SFSCs.

Thirdly, the participation of elderly individuals may be limited since the questionnaire is distributed through a well-known talking app on mobile devices. The participants' age distribution, which is more evenly distributed across the younger and middle-aged (9\252 participants), also reflects this pattern. Even while the analyses of customer viewpoints may not be significantly affected by this distribution, future research that repeats the same survey using a different platform (for example, a face-to-face interview with more elderly consumers) might assist to analyze the possible difference.

Fourthly, the results of the survey were gathered in 2022 in the peak of the economic and political crises in Lebanon. The economic crisis in Lebanon has had an impact on the intention to buy from short food supply chains. The crisis has caused the Lebanese currency to depreciate, inflation to rise, and shortages of necessities like food. As a result, many consumers are struggling with their budgets and may choose to buy the cheapest food available, regardless of where it comes from or how it was made.

Additionally, the crisis has disrupted supply networks, making it harder for customers to find locally produced food goods and for small-scale producers to access markets. As a result,

there has been a change in consumption patterns toward less expensive imported items, which may be seen as more accessible and economical.

The crisis has, however, also brought attention to the value of regional food production and the potential advantages of short food supply chains. Consumers are looking for alternatives that offer greater security and resilience as they become more aware of the risks of global supply networks. Demand for programs like farmers' markets and community-supported agriculture initiatives has risen as people seek out ways to support regional farmers and have access to nutritious, fresh food.

It would be interesting to redistribute the questionnaire after this situation ends as the results may vary when the currency stables again and the situation goes back to a healthy economic one.

Fifthly, Lebanon has many factors that make the adoption of SFSC difficult. It may be challenging to properly deliver locally produced food to consumers due to a lack of infrastructure, such as transportation networks and storage facilities. For SFSCs in Lebanon, the lack of laws and rules promoting regional food production and distribution might be a major obstacle. Additionally, small-scale farmers and producers might find it difficult to get the funding and technology they need to grow and distribute food locally. Finally, political instability and conflict can disrupt food production and distribution networks, making it difficult to establish and maintain SFSCs.

Sixthly, the study used the theory of planned behavior as a base for the model creation as in social and psychological research, the theory of planned behavior has been widely accepted and applied to assess consumer behavior (Shah Alam & Mohamed Sayuti, 2011). Moreover,

consumer intentions have been explained using the theory of planned behavior and in the retail food industry, its broad applicability makes it a useful model for determining customer preferences in the food sector (Kim Y. G., 2014).

However other theoretical perspectives can be used for future studies. The below theories can be recommended:

- The Innovation Diffusion Theory (IDT): focuses on how new products or ideas spread within a population. In the context of organic food, this theory can be used to examine how awareness and adoption of organic food spread among consumers in emerging markets, considering factors such as perceived benefits, compatibility with existing values, complexity, trialability, and observability.
- Social Cognitive Theory (SCT): SCT emphasizes the influence of observational learning, self-efficacy, and outcome expectations on individuals' behavior. In the context of organic food purchasing, SCT can be used to explore how consumers' exposure to information, role models, and their confidence in their ability to make organic food choices affect their behavior.
- Consumer Ethnocentrism Theory: Consumer ethnocentrism theory suggests that consumers' attitudes and behaviors are influenced by their preference for domestic products over foreign alternatives. In the context of organic food, this theory can be used to investigate the extent to which consumers in emerging markets exhibit ethnocentric tendencies and how it affects their decision to purchase organic products from domestic or foreign sources.
- Value-Expectancy Theory: This theory posits that individuals' behavior is driven by the perceived value and expected outcomes of that behavior. In the context of organic food,

this theory can be used to examine consumers' perceptions of the value and benefits associated with organic food, including health benefits, environmental sustainability, and product quality, and how these perceptions influence their purchasing decisions.

Finally, this study took Lebanon as a case study solely however comparing the results with a study done on a developed country as well will give new insightful results. Conducting a comparison study of sustainable SFSCs between developed and developing countries advances this topic as future research may be built on the related conceptual framework in developed countries.

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## **APPENDIX A: QUESTIONNAIRE**

In comparison to traditional (longer) supply chains, short food supply chains (SFSCs) use as few intermediaries as possible, linking local producers with local customers more directly. This PhD study is conducted through the Universite Le Havre-France This thesis is prepared to study the effect of (environmental awareness, sensitivity, knowledge, values & beliefs, norms and health consciousness) in creating environmental attitude and the intention to buy from proximity. The questionnaire will ask you a few questions about the topic, thus think about your environmental approach and your buying habits before answering. Your response will remain anonymous. Your

participation is entirely voluntary. The questionnaire will not take more than 20 mins. Thank you for you cooperation.

**I. To what extent do you agree or disagree with the below statements:**

Construct	Statement	Strongly Agree	Agree	More or Less Agree	Undecided	More or Less Disagree	Disagree	Strongly Disagree	Reference	
<b>1.Environmental Sensitivity &amp; Awareness</b>	Discussions around environmental preservation is of interest for me								(Zaiem, 2005) (Lin & Chang, 2012) (Giebelhausen, Chun, Cronin, & Hult, 2016) (Peter & Honea, 2012)	
	Cleaning rivers and forests appeal to me.									
	I'm upset when I think about how industrialists produce pollution									
	I'm concerned that a lot of the food I eat contains pesticides.									
	Organic food product usage should be encouraged more and more.									
	I am aware of:									
	how individual lifestyle choices have an impact on									

	the environment								Mr̃cela, & Horvat, 2016) (Liu, Vedlitz, & Shi, 2014) (Umuhire & Fang, 2016) (Gadenne, Kennedy, & McKeiver, 2009). (Michalský & Hooda, 2015)
	the effects of unsustainable food production on one's health								
	the need of environmentally food sustainable production								
	how SFSCs (short food supply chain) reduce greenhouse emissions and carbon footprint								
<b>2. Environmental Knowledge, Values &amp; Beliefs</b>	When purchasing food items, I look for eco-labels and certifications.								(Biswas & Roy, 2015) (Han & Hyun, 2017). (Röhr, Lüddecke, Drusch, Müller, & Alvensleben, 2005) (Mostafa, 2007) (Zagata, 2012)
	Before making a food purchase, I want to learn more about eco-friendly								

	items.								
	Understanding the food products' inputs, processes, and effects concern me.								
	I know how to choose food items and packaging that will limit the amount of garbage that ends up in landfills.								
	I am familiar with the environmental terms and symbols seen on food product packaging.								
	The presence of resource scarcity and pollution has put life on Earth at jeopardy								(Biswas & Roy, 2015) (Poortinga, Steg, & Vlek, 2004). (Demir, Rjoub, & Yesiltas, 2021).
	Nature's balance is delicate								

	and easily disrupted.								
	We're getting close to the limit of what the planet can take..								
	If things continue on their current path, the environment's long-term viability and that of future generations will be jeopardized.								
<b>3. Environmental Norms &amp; Health Consciousness</b>	My family believes that I should purchase organic foods instead than non-organic foods.								(Asif M. , Xuhui, Nasiri, & Ayyub, 2018) (Poortinga, Steg, & Vlek, 2004). (Demir, Rjoub, & Yesiltas, 2021). (Giampietri, Finco, & Del Giudice, 2016)
	Most of the individuals I respect would prefer to buy organic food over non-organic food.								
	When shopping, the								



	majority of the individuals that matter to me agree that I prefer to purchase in local Short Food Supply Chains (SFSCs).								
	I think of myself as a health-conscious consumer when I purchase for my family.								(Asif M. , Xuhui, Nasiri, & Ayyub, 2018) (Brown, 2002) (Verraes, et al., 2015) (Johnson & Endres, 2011) (Yi, 2019) (Brain, 2012)
	To maintain my family's health, I carefully select foods.								
	When it comes to my personal diet, I don't select my foods carefully.								
	I avoid cooking for my family foods with additives and preservatives								

	I believe that local foods minimize the risk of food safety and security for consumers								
<b>4. Environmental Attitude</b>	Buying eco-friendly foods appeals me								
	Eco-friendly foods are safer and more dependable								
	Most of the food in the market contain harmful pesticides								
	Quality is related to whether the food product is eco-friendly or not.								
	Eco-friendly foods have a great nutrient content								
	SFSC (short food supply chain)								

	products mean they are more environmentally friendly								
	I trust buying eco-friendly food from local markets								

**II. To what extent do you agree or disagree to the below statements concerning the price of eco-friendly products.**

<b>Construct</b>	<b>Statement</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>More or Less Agree</b>	<b>Undecided</b>	<b>More or Less Disagree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Reference</b>
<b>5.Price</b>	When there are discounts on eco-friendly food items, I prefer to buy them.								(Krishna & Balasubramanian, 2018) (Ang, Leong, & Kotler, 2000) (Malik, Singhal, & Tiwari, 2017) (Kneafsey, et al., 2013)
	I research the prices of eco-friendly and standard food products before purchasing.								

	I don't buy eco-friendly food products due of its high price..									
	Eco-friendly food products can be priced a premium because they contain no chemicals or pesticide residue.									
	Local food products present higher quality that justifies their price.									
	I am willing to pay more to buy food product from proximity when my income allows									

**III. To what extent do you think the below attributes important when evaluating the quality of a product.**

<b>6.Quality Dimension</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>More or Less Agree</b>	<b>Undecided</b>	<b>More or Less Disagree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Reference</b>
the food product's taste								(Garvin, 1987)
the food product's smell								
the food product's color								
the food product's freshness								
the food product's health benefits								
the size of the packaging								
ease of preparing the food product								
Food product preservation techniques								

**IV. Which of the below definitions appeal to you more when explaining proximity? You may select more than one.**

- the short distance and direct interaction between producers and consumers
- the development of trust relationships between agriculturalists and consumers
- the agreement on environmental and social practices between producers and consumers
- the common knowledge of farmers and customers regarding production processes

- the ways prices are set/negotiated, and the duration of the trade relationship

**V. Consumers intend to buy from proximity (short food supply chain companies) (local products) due to several reasons. In your opinion, how important to you are the following reasons.**

<b>7. Reasons behind intention to buy from proximity</b>	<b>Extremely Important</b>	<b>Very Important</b>	<b>Moderately Important</b>	<b>Neutral</b>	<b>Slightly Important</b>	<b>Low Importance</b>	<b>Not at all Important</b>	<b>Reference</b>
Local food chains offer a high level of transparency								(Brain, 2012)
Local food chains offer direct contact with producers								(Johnson & Endres, 2011)
Local food chains offer fresher food								(Conner, Montri, Montri, & Hamm, 2009)
I want to support local agriculture								(Baker, Hamshaw, & Kolodinsky, 2009)
I want to improve								

the local economy								
I want to encourage local farmers to seek better food quality								
I buy local for food safety and security								
I buy local to acquire pesticide free food products								
I buy local to develop social connections								
I buy local because it is convenient								
I trust local producers								
I trust local products								
Local food minimizes the risk.								

**VI. Rank the below drivers behind the intention of buying food products produced through short food supply chain from 1-12 (1-most important to 12 least or not important).**

<b>8. Drivers</b>	<b>Rank</b>
Taste of the food product	
Quality of the food product	
Food safety	
Nutritional health	
Price	
Locally produced	
Convenience	
Fair Trade	
Environmental Impact	

**VII. Select the below agri-food sectors in Lebanon that you would intend to buy from proximity.**

- Fruits & Vegetables
- Dairy products
- Chocolate, Biscuits & Sweets
- Coffee & Nuts
- Oil, Fat & Derivatives
- Wines & Alcoholic Beverages
- Pickles, Jams & Canned Foods
- Spices & Herbs
- Meat & Poultry
- Fish

**VIII. Briefly explain what is “short food supply chain” to you.**



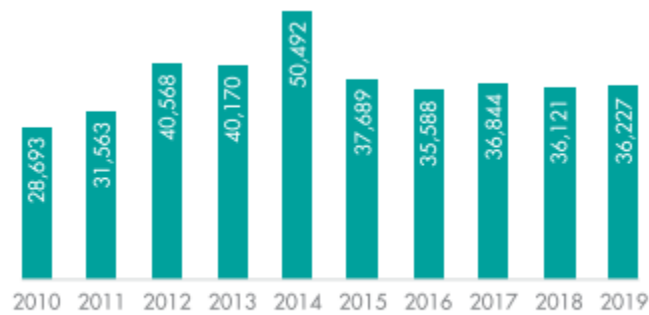
**IX. Demographics**

<p><b>9. Age</b></p>	<p><input type="checkbox"/> &lt;30  <input type="checkbox"/> 30-45  <input type="checkbox"/> 46-60  <input type="checkbox"/> &gt;60</p>	<p><b>10. Gender</b></p>	<p><input type="checkbox"/> Male  <input type="checkbox"/> Female</p>
<p><b>11. Educational Level</b></p>	<p><input type="checkbox"/> PhD Level  <input type="checkbox"/> Master Level  <input type="checkbox"/> Undergraduate Level  <input type="checkbox"/> Highschool  <input type="checkbox"/> No Education</p>	<p><b>12. Family Size</b></p>	<p><input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5  <input type="checkbox"/> 6  <input type="checkbox"/> 7 or more</p>
<p><b>13. Marital Status</b></p>	<p><input type="checkbox"/> Single  <input type="checkbox"/> Married</p>	<p><b>14. Geographical Area</b></p>	<p><input type="checkbox"/> Beirut  <input type="checkbox"/> North Lebanon  <input type="checkbox"/> South Lebanon  <input type="checkbox"/> Bekaa  <input type="checkbox"/> Mount Lebanon  <input type="checkbox"/> Akkar  <input type="checkbox"/> Nabatieh  <input type="checkbox"/> Baalbak-Hermel</p>
<p><b>15. Disposable Income</b></p>	<p><input type="checkbox"/> Less than 50\$  <input type="checkbox"/> 50\$-300\$  <input type="checkbox"/> 301\$-550\$  <input type="checkbox"/> 551\$-800\$  <input type="checkbox"/> 801\$-1050\$  <input type="checkbox"/> More than 1050\$</p>		

**APPENDIX B: Main Sectors in The Agri-Food Industry- Names and Description**

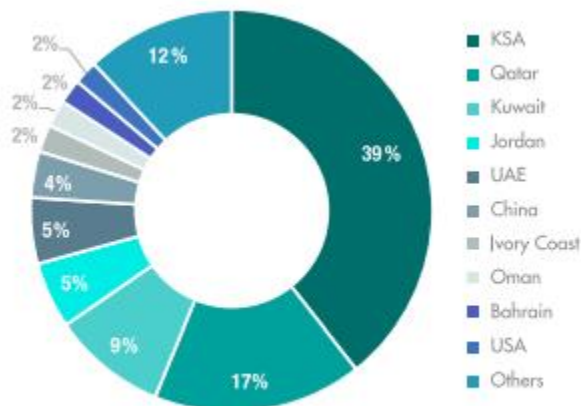
**Chocolate, Biscuits, Sweets Companies**

Around 2018 and 2024, the global chocolate industry is estimated to expand at a CAGR of about 7.0 percent, from around USD 103 billion in revenue in 2017 to around USD 162 billion in revenue in 2024. In Lebanon, there are more than 120 chocolate-producing firms, with more than half of them based in Mount Lebanon. During the period 2010-2019, exports of chocolate and other food preparations containing chocolate rose at a CAGR of 2.6 percent, with Saudi Arabia becoming the largest export market (figure 45 & 46). In the GCC countries, there is a big untapped export opportunity for chocolate from Lebanon: in Saudi Arabia alone, there is more than USD 4.4 million of untapped potential, and in Kuwait, more than USD 1.4 million.



Source: Lebanese Customs, 2020

Figure 45 Chocolate Exports USD Thousand | 2010-2019



Source: Lebanese Customs, 2020

Figure 46: Chocolate Exports from Lebanon by Destination % / 2019

Al Baba Sweets	Alpina sarl	Amigo Chocolate	Anis Jaafar & Sons Co
Borjak Company sarl	Cadbury Adams Middle East sal	Cedar	Chelba sal
Chocolat Paladin	Chopin Co. for Sweets Manufacture & Trade	Dandy	Details Commercial Group DCG sarl
El Kaissi Est. for Chocolate & Cadies - Crystal Candy- Kaissi	Elsa sal	Ethel Chocolate	Fouad Bahous Trading & Industrial Co
Ghandour	Ghrawi Group sal - Bassam Ahmad Ghrawi	Good Days sarl	Hallab Sweets
Healthy Food sal	HMBR Manufacturing & Trading Co. sal (Malco)	La Roche Chocolate Factory	Larissa Catering
Linda Chocolate	Lychee: Akkad for Manufacturing of	Mahmoud Daoud Makari Est. for	Mak International sal

	Chocolate	Sweets Industry	
Master Chewing Gum & Candies Factories sal	Mayrig sal	Merico - Merhej co. for Industry & Commerce sarl	Mohammed Fareed Attar sons
Omran Industrial Food	Oussayma Ghrawi Est.	Patchi	Poeme
Pralino - La Maison du Chocolat- Elias Hamaoui & Co	Prunelle sarl	Rodin	Saaddine Nahlous & Sons Est
Seif for Trade and Industry-Seiftco	Souchet sarl	The Cookers sarl	Wilbi sarl

*Table 15: Chocolate, Biscuit, Sweets Main Companies*

### **Dairy Products**

MENA countries are projected to account for 24% of global dairy imports in 2027, followed by South East Asia (12%) and China (13%), with developing countries accounting for 20% of total. Lebanon has a lot of room to expand its market share in the region's dairy production to meet rising demand.

About 100 dairy factories are located in Bekaa (45%) and Mount Lebanon (31%), respectively<sup>19</sup>. Exports of dairy products totaled around USD 3.9 million in 2019, with Iraq (28%) and Qatar (11%) leading the list of destinations (figure 47, 48).

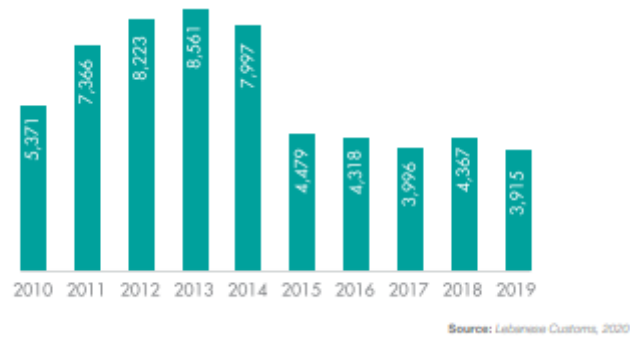


Figure 47 Milk and cream, not concentrated nor containing additives exports USD Thousand | 2010-2019

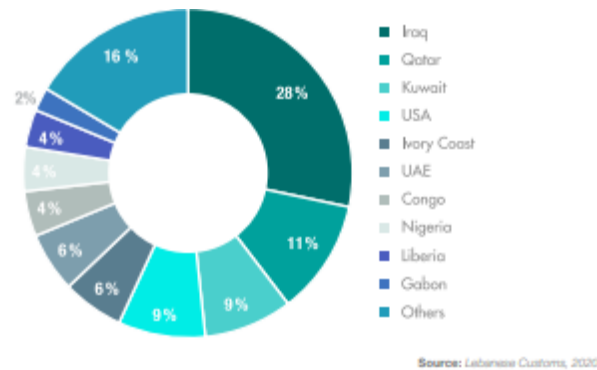


Figure 48 Dairy Products Exports from Lebanon by Destination % | 2019

Dairy Khoury and Company sal	Karoun For Dairies s.a.l	Liban lait	Societe Tabbara Pour Le commerce
Trappistes	Taanayel	Khoury Dairy	Candia

Table 16 Dairy Products Main Companies

### Coffee & Nuts

Over the next years, the global demand for dried fruits and edible nuts is forecast to expand at a CAGR of approximately 5.3 percent, reaching USD 242,000 million in 2024, up from USD 178,000 million in 2019.

In Lebanon, there are approximately 100 roasteries, with 50 percent in Mount Lebanon and 24 percent in Bekaa. Dried fruit and nut exports totaled USD 45 million in 2019, with Saudi Arabia (17%) and the United States (10%) leading the list of destinations (figure 49 & 50). Saudi Arabia (USD 7.7 million), Egypt (USD 2.25 million), and Spain have the most untapped export opportunities (USD 1.69 million).

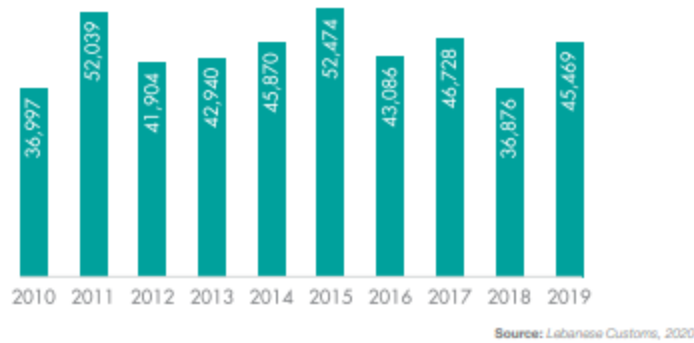


Figure 49 Lebanese Dried Fruits & Nuts Exports USD Thousand / 2010-2019

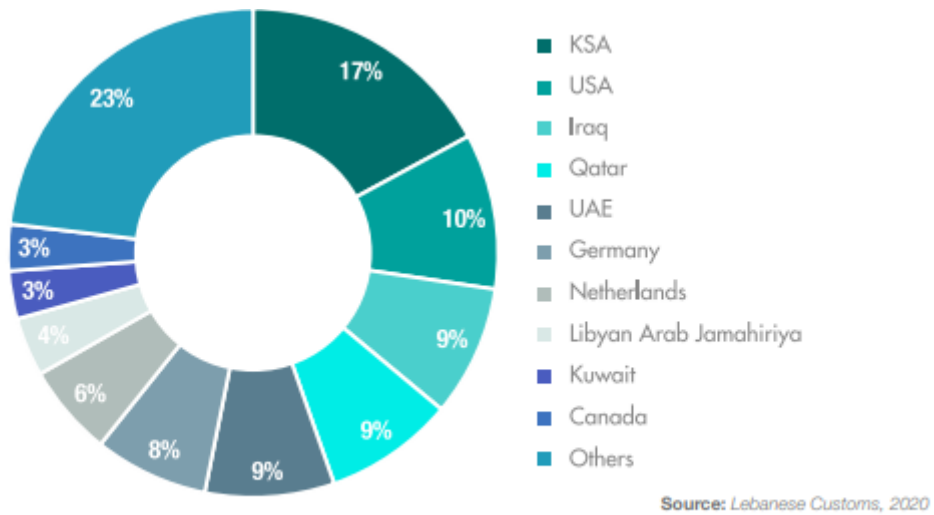


Figure 50 Dried Fruits and Nuts Exports from Lebanon by Destination % / 2019

Al - Rifai Roastery	Al Halabi Nuts	Al Kazzi Trading Ets	Arome et Delices -A & D
Automatic Brewers sarl	Café Abi Nasr	Castania nuts	Choucri Hamasni
Diabco s.a.r.l	Foods Industrial Corporation s.a.r.l (Fodico)	Sannine Roastery	Shahbaz Nuts s.a.l
Societe Michel Najjar	Super Brazil Company s.a.l		

*Table 17 Coffee and Nuts Main Companies*

### **Oil, Fat and Derivatives**

The olive oil industry is leading the MENA region's strong demand for edible oils, with a CAGR of 5% forecast by 2021, outpacing the global average of 4% 11. While middle-class customers demand more luxury goods, the production of extra virgin olive oil, the highest quality olive oil made without the use of solvents, has growth potential.

In Lebanon, there are approximately 100 oil mills, with 25% based in North Lebanon and 25% in Nabatieh. In 2019, exports totaled about USD 22 million (figure 51), with the United States (24%) and Saudi Arabia (13%) leading the list of destinations (Figure 52). The majority of

the untapped export demand capacity for Lebanese olive oil is in Saudi Arabia Arabia (USD 2.8 million), Italy (USD 470,000) and Brazil (USD 320,000).

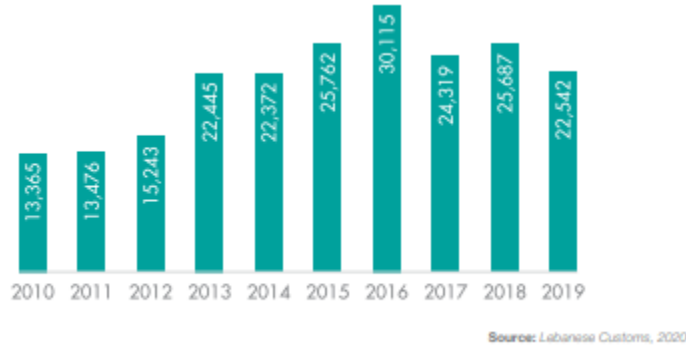


Figure 51 Olive Oil Exports USD Thousand / 2010-2019

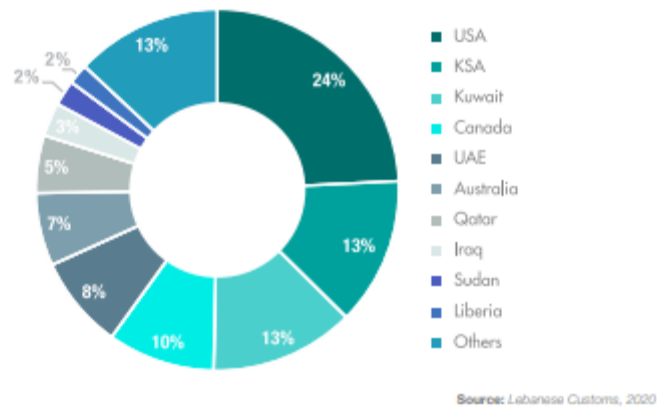


Figure 52 Olive Oil Exports from Lebanon by Destination % / 2019

Atyab s.a.r.l - Boulos Olive Oil	Bio Gourmet	Daher Foods	Green Pack
Hasbaya Olive Oil	Industrial Kingdom s.a.r.l	Kobayter Freres s.a.l	Lakkis
Lebolive	Local International	Maalouf Industry &	Nafez Farah Co.



	Company	Trading s.a.l	
Olive Harvest	Olive Trade	Saifan	Slim Oil (Pulper

Table 18 Oil, Fat and Derivatives Main Companies

**Wines & Other Alcoholic Beverages**

North America and Europe dominate the global wine markets, which were estimated at around USD 302 billion in 2017 and are forecast to rise at a CAGR of around 5.8% between 2017 and 2023.

In Lebanon, there are about 50 wineries, with 47 percent in Mount Lebanon and 36 percent in Bekaa. In 2019, Lebanese wine exports totaled USD 21 million, with the United Kingdom (33%) and the United States (17%) leading the list of destinations (Figure 53 & 54). Lebanese wine has an untapped export demand value of USD 1.07 million in Canada and USD 1.07 million in Sweden (USD 630,000).

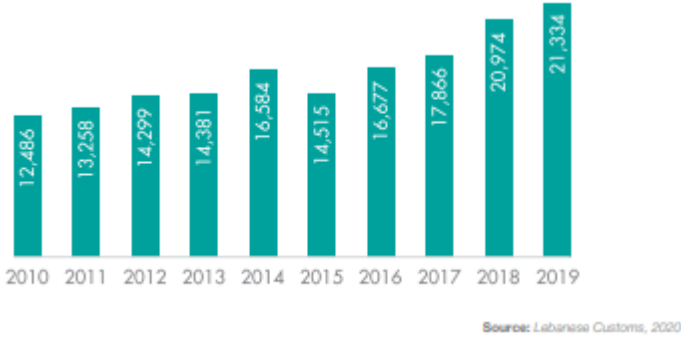


Figure 53 Lebanese Wine Exports USD Thousand | 2010-2019

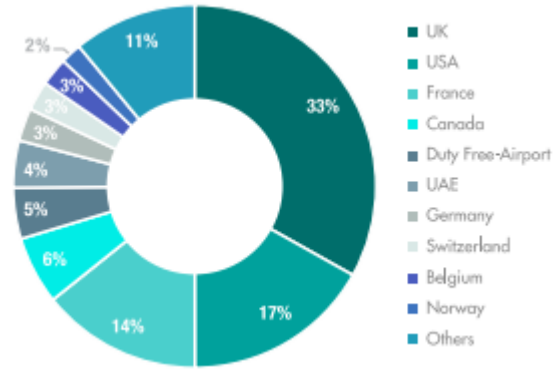


Figure 54 Wine Oil Exports from Lebanon by Destination % | 2019

Abou Sleiman's Industrie	Agriculture for karam Industry & Commerce for Karam (A KICK) sarl	Alcart sal	Bou Nader Bros Co
Brasserie Almaza	Château Ksara s.a.l	Chateau Musar sal	ChateauBelle-vue
Domaine Des Tourelles	Fakra Trading & Industries - Grand Seigneur sarl	Kassatly Chtaura - Solvid	Lebanese Beverage Co
Massaya	Societe Georges Jammal et Fils sarl	Viva Beer sal	Zouheir & Ramez Bou Nader Trd. Co

Table 19 Wines & Other Alcoholic Beverages Main Companies

(LebaneseCustoms, 2020)

### Pickles, Jams and Canned Foods

Pickled cucumbers come in a variety of flavors, including sweet, sour, spicy, and dill. Pickle exports totaled US\$544.3 million globally in 2019. This is a 2.7 percent rise in value since 2015, but a -16.6 percent decrease from 2018 to 2019.

Suppliers in European countries sold the most pickles in terms of dollar value in 2019, with sales totaling \$306.4 million, accounting for more than half (56.3%) of the global figure. Asian exporters came in second with 28.5 percent, while North America accounted for 14.4 percent of global pickle shipments. Suppliers from Africa (0.5%) and Latin America (0.2%), except Mexico but including the Caribbean, contributed smaller numbers and Oceania 0.2 %.

Among the top exporters, the fastest-growing exporters of pickles since 2015 were: Netherlands (up 94%), Lebanon (up 81%), Spain (up 60.4%) and China (up 58.6%). (Workman, 2020).

Al Dayaa Products	Al Rabih-Sonaco s.a.r.l	Al Wadi Al Akhdar / Dove	Alfa Interfood s.a.l
Annabil Est	Aoun Food Co.	Atayeb Al Rif	Baladi Est. For Commerce & Agriculture sarl
Cortas	DOMANCO	Golden Star	Hanna Sayegh & Sons
M.M. EL Yaman & Co. sarl	Mechaalany Foods	Middle East Commercial Center(Conserves	Mounir Bissat Factories

		Taanayel)	
Mymoune sarl	Naas Food Company sal	Société Abdo Saleh pour le Commerce et l'Industrie sarl	Tiba Foods

Table 20 Pickles, Jams and Canned Foods

**Spices & Herbs**

In 2018, Lebanon exported \$10.9 million worth of "ginger, saffron, turmeric (curcuma), thyme, bay leaves, curry, and other spices." In volume terms, sales of spices from Lebanon fell 2.12% in 2018 relative to 2017. Exports decreased by \$ 238 thousand (total exports from Lebanon in 2017 were \$11.2 million) Figure 55 (TradeEconomy, 2021).

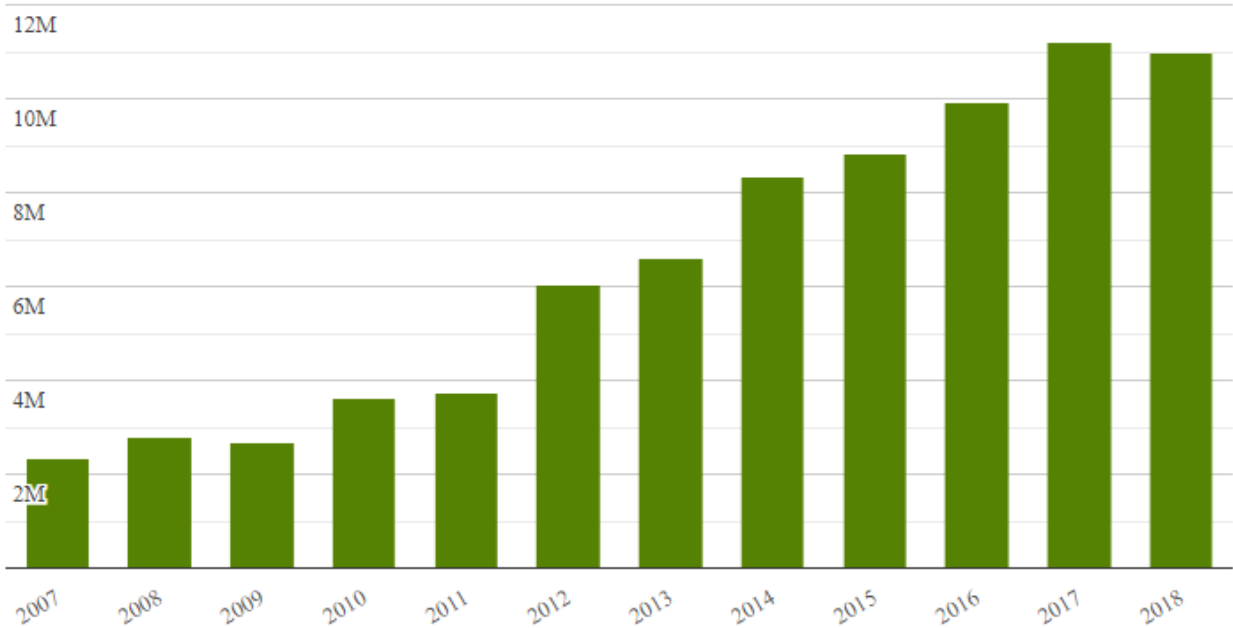


Figure 55 Exports of Spices and Herbs Lebanon\ 2007-2018 (TradeEconomy, 2021).

Top export destinations of spices from Lebanon in 2018:

Germany with a share of 17% (1.86 million US\$)
Sweden with a share of 13.2% (1.45 million US\$)
Netherlands with a share of 9.15% (1 million US\$)
Canada with a share of 7.78% (855 thousand US\$)
Saudi Arabia with a share of 6.23% (684 thousand US\$)
United Kingdom with a share of 5.75% (632 thousand US\$)
USA with a share of 4.29% (472 thousand US\$)
United Arab Emirates with a share of 4.06% (446 thousand US\$)
Qatar with a share of 3.74% (411 thousand US\$)
Kuwait with a share of 3.22% (353 thousand US\$)

*Table 21 Top export destinations of spices from Lebanon in 2018*

Abido Company For Trading & Industry s.a.l	Adonis Spices	Delta Group	Lebanese co. For Modern Food Industry s.a.r.l- Gardenia Grain D'or
Malek Bros & Co.sarl	Nabat	Riachi Trading	Zinatat sarl

*Table 22 Spices and Herbs Main Companies*