EFFECTIVENESS OF SUSTAINABILITY CERTIFICATIONS AND THEIR CORRESPONDING LABELS AMONG DAIRY PRODUCTS CONSUMERS A COMPARISON BETWEEN NETHERLANDS AND DENMARK

Thesis

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ABBREVIATIONS

KI1	Key Informant1: Big Retailer 1 from Netherlands
KI2	Key Informant2: Small Retailer 2 from Netherlands
KI3	Key Informant3: Dairy Processor 1 from Netherlands
KI4	Key Informant4: Dairy Processor 2 from Netherlands
KI5	Key Informant5: Big Retailer 3 from Netherlands
KI6	Key Informant6: Big Retailer 4 from Denmark
KI7	Key Informant7: Dairy Processor 3 from Denmark
KI8	Key Informant8: Small Retailer 5 from Denmark
KI9	Key Informant9: Dairy Processor 4 from Denmark
KI10	Key Informant10: Big Retailer 6 from Denmark
SDGs	Sustainable Development Goals
NL	Netherlands
EU	European Union
DSF	Dairy Sustainability Framework
RQ	Research Question
SRQ	Sub Research Question
FAW	Farm Animal Welfare
SC	Sustainable Certified
TFP	Total Factor Productivity

ABSTRACT

The current intensification of the agricultural production system continues to cause public concern about its sustainability owing to the increasingly negative effects of its operations on the environment, the economy, and society's well-being (Weiland et al., 2021). The key public concerns about impacts include the escalating consumption of natural resources, soil degradation, greenhouse gas emissions, food safety, food security issues, animal disease incidences, animal welfare-related issues, Etc. (Janssen & Langen., 2017). Over the past few decades, apart from food quality, food safety, and related issues, European consumers have shown an increasing interest in the sustainable consumption of food products (Grunert et al., 2014). As a result, food supply chain customers have continued to pay growing attention to sustainability-related problems and have therefore started to comply by implementing low environmental impact projects. It is commonly believed that food consumption habits and dietary choices can play an important role in attaining sustainable development goals. Certification schemes have appeared to communicate sustainability-related information to consumers in global commodity chains (Prell et al., 2020). Sustainable certification is important to empower consumers to utilize dairy products sustainably by reducing the information gap between producers and consumers. However, their effectiveness in enhancing the Netherlands' sustainable consumption of dairy products has remained unknown. The project's main objective of this study was to analyse the effectiveness of the sustainable certification system in the dairy value chain in the Netherlands and identify the information gap. The research targeted Dutch and Danish citizens of all categories who are potential buyers of dairy products. The area of focus on these citizens was the influence or contribution of demographic elements of the different categories of citizens and dairy retailers and Dairy processors. The research used a research questionnaire and a semi-structured interview method. The sample comprised 20 respondents from the Netherlands and 20 from Denmark for the structured online question. At the same time, the semi-structured interview involves a sample of 5 mixtures of Retailers and Dairy processors in the Netherlands and 5 from Denmark. The finding found that in the Netherlands there are exist dairy certifications ranging from Fairtrade, Beter Leven, EU Organic, Vega, and Planet proof, while in Denmark, certifications included Recommended by animal protection, EU organic, Key Hole Healthier Choice, organic Ø-mark, V-Label Vegan (EU). The certifications with an important contribution to Sustainable development goals especially SDG12. The Sustainability certification provides information through labels on the dairy products that depend on the consumer's awareness, motivation, and knowledge to meet the demand for eco-friendly dairy products in the Netherlands and Denmark. In general, there is not much difference in labels, consumer preferences, and consumer characteristics between Netherlands and Denmark. Nevertheless, sustainable consumption in Denmark is higher; this could indicate that communication ways are better in Denmark through TV. In addition, Danish consumers are more aware of sustainability issues in their education and TV communication. Therefore, labels are not decisive, but attention should be paid to education and general communication regarding sustainability labels.

Key concepts of the study included:

Effectiveness, Sustainability Certification, Dairy products, Denmark and the Netherlands

CHAPTER ONE

INTRODUCTION

The current intensification of the agricultural production system continues to cause public concern about its sustainability owing to the increasingly negative effects of its operations on the environment, the economy, and society's well-being (Weiland et al*.,* 2021). The key public concerns about impacts include the escalating consumption of natural resources, soil degradation, greenhouse gas emissions*,* food safety, food security issues, animal disease incidences, animal welfare-related issues, Etc. (Janssen & Langen, 2017). The debate about the above negative impacts has therefore served as a means for shaping the sustainable development concept among the international communities who have continued developing strategies and integrating sustainability concepts into their policies. Apart from national governments, other groups, including private business firms, industries, and non-government organization (NGOs), also plays an important role in the progress toward sustainability (Verhoef & Van Doorn, 2016). Over the past few decades, apart from food quality, food safety, and related issues, European consumers have shown an increasing interest in the sustainable consumption of food products (Grunert et al*.,* 2014). As a result, food supply chain customers have continued to pay growing attention to sustainability-related problems and started to comply by implementing low-environmental impact projects. It is commonly believed that food consumption habits and dietary choices can play an important role in attaining sustainable development goals. Certification schemes have appeared to communicate sustainability-related information to consumers in global commodity chains (Prell et al*.,* 2020). Therefore, the said market-driven tools are now found in numerous global industries such as forestry, fisheries, tourism, and organic agriculture (Wibowo et al*.,* 2018; Bonisoli et al*.,* 2019). Sustainable certification is important to empower consumers to utilize dairy products sustainably by reducing the information gap between producers and consumers. However, their effectiveness in enhancing the Netherlands' sustainable consumption of dairy products has remained unknown. A study that the Van Hall Larenstein University of Applied Sciences (VHL), in collaboration with three other Dutch Green Universities, is in charge of implementing a research project on the sustainability certifications in livestock farming chains in the Netherlands sought to understand. The project's main objective is to analyse the effectiveness of the sustainable certification system in the dairy value chain in the Netherlands and identify the information gap.

This study aims at contributing to the said project in which the study intended to respond to the specific need or interest for sustainability-labelled information among various customers in the dairy chain in the Netherlands in comparison to Denmark. The study results identified the problem gap that feeds into the formation of system-based solutions for the improvement of dairy supply chain operations in the Netherlands, hence broader sustainable development goals.

1.1 Justification of the study

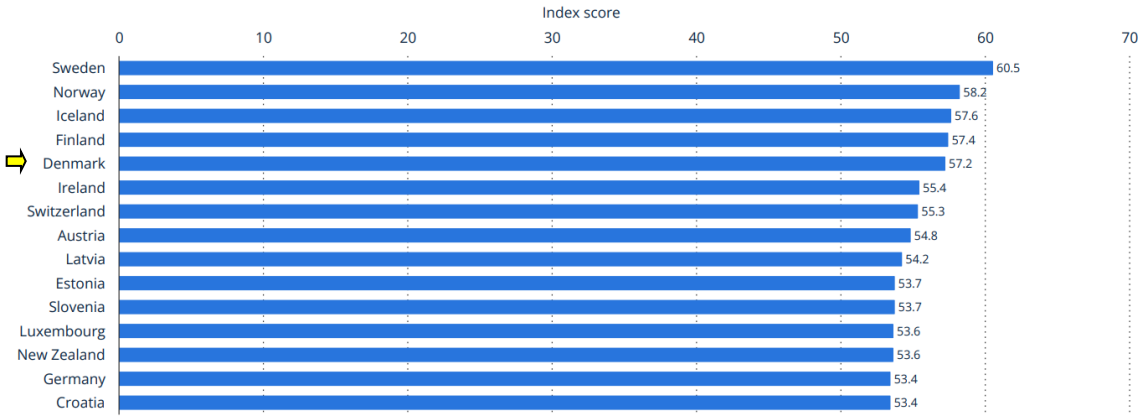
The influence of sustainability certifications on consumers' preferences and how they evaluate branded products have been the main topic of many studies in recent years (Silva et al., 2017; Grunert et al., 2014; Bonisoli et al., 2019). Nonetheless, the literature highlights that available knowledge on sustainability notions is still scattered among various consumers in the animal food chain (Grunert et al., 2014). While sustainability remains a topic of public attention, some studies have suggested that just providing customers with the option to discover sustainability information on product labels does not guarantee that they would use it. Instead, consumers' purchase decisions will depend on their general perception and other motivation factors such as price, brand, quality (Silva et al., 2017; Grunert et al., 2014). Thus, the observed increasing trend of sustainable certificates and label claims on food products without considering consumers' views is likely to increase the risk of overloading customers with unsolicited (unwanted) and credence information leading to consumers confusion (Silva et al., 2017; Banterle et al., 2013). Hence, the risk of ignoring some important information leads to worrying issues related to consumer welfare.

1.2 Problem statement

Even though a sustainable certification system in the dairy value chain is gaining attraction in the Netherlands and other European countries, its effectiveness in improving customers' sustainable consumption patterns in dairy products remains uncertain. Dutch consumers have a low level of purchasing organic or sustainable, and as such certified, products in comparison to other countries, for example, Denmark (The Gallup Organisation, 2009). Consumers may not always fully trust labels or understand them (Wur report, 2021). According to Statista 2020, the market share of organic milk and dairy products in the Netherlands was only 4%, while the market share of organic milk and natural yogurt in Denmark has been respectively 34.3% and 47%. The Van Hall Larenstein University of Applied Sciences (VHL) plans to implement a research project on sustainability certification in dairy chains to recognize what can promote uptake among dairy product consumers in the Netherlands. The project also plans to consolidate experience from other European countries with a more developed sustainable certification system (preferably Denmark, since they have a larger

portion of the population who does consider sustainable certification when making purchasing decisions) which can serve as a good model. (Figure 1.1) However, the project has insufficient information about the interest of consumers in sustainable dairy products and the information on sustainable certifications.

Figure1. 1Countries ranking based on sustainability 2017



Source: Statista 2017

1.3 Problem owner

The problem owner is one of the professors of climate-smart dairy value chains from Van Hall Larenstein University in collaboration with other experts from HAS University of Applied Sciences, Aeres University of Applied Sciences, and Windesheim University of Applied Sciences.

1.4 Research objective

This research comprehended the effectiveness of sustainable certifications and their corresponding labels among dairy product consumers in the Netherlands and Denmark.

1.5 Research questions

1.5.1 Main question - 1

1. What are the effectiveness of sustainability certifications and labels on the purchase of dairy products among consumers in the Netherlands and Denmark?

1.5.2 Sub - questions

1.1 What are the sustainability certifications and labels for dairy products in the Netherlands and Denmark?

1.2 To what extent do the identified sustainability labels contribute to addressing the Sustainable Development Goals?

1.3 Which aspects of sustainable certification are mostly important to dairy product consumers and retailers in the Netherlands and Denmark?

1.5.3 Main question - 2

2. What are effective strategies for communicating sustainability-related information on dairy products to consumers in the Netherlands and Denmark?

1.5.4 Sub-questions

2.1 In what way do demographic characteristics of citizens in the Netherlands and Denmark influence the environmental motivation, knowledge, and awareness towards purchasing ecologically friendly dairy products?

2.2 In what way do dairy products communicate sustainability-related information to consumers in the Netherlands and Denmark?

2.3 How does the consumer demand for eco-friendly dairy products influence the effectiveness of product certifications and labels?

1.6 Research scope

This descriptive study targeted Dutch and Danish citizens of all categories who are potential buyers of dairy products. The area of focus on these citizens was the influence or contribution of demographic elements of the different categories of citizens. The main characteristics of interest are gender, age, income, education, social class, and general background. The factors evaluated to test if they play a role in influencing the citizen's knowledge, awareness, and motivation to purchase eco-friendly dairy products. The research was descriptive; therefore, it did not identify the factors of knowledge, awareness, and motivation statistically. In addition, the age group of respondents over 70 years old, and native Dutch and Danish speakers with little knowledge of English, was not statistically tested.

CHAPTER TWO

LITERATURE REVIEW

2.1 Research Area

The Research was conducted in the Netherland and Denmark.

Figure2. 1 The Map of Netherlands

Source: https://rotterdamnetherlands.com/where-is-rotterdam-netherlands/

Figure2. 2 The Map of Denmark

Source: World Atlas (2021)

As observed on the map of Denmark above, for the most part, Denmark consists of flat lands with very little elevation, except for the hilly central area on the Jutland Peninsula. Its average height above sea level is only 31 meters (101 feet), and the highest natural point is Mollehoj at 170.86 meters. A yellow upright triangle marks this extreme point on the map above (World Atlas, 2021).

2.2 Concept of sustainability (definition and dimension)

Sustainability has been defined in many ways, but the widely accepted definition was stated in Brundtland's (1987) report as any development actions designed to suit the present generation's requirements without depriving the future generations' ability to achieve their own goals need (Manning, 2016). The three main dimensions that form the sustainability framework are the economy, environment, and society (Banterle et al*.,* 2013). Due to the mounting impacts of its operations, intensive food production can lead to negative externalities to the environment, society, and the economy in the following way (Manning, 2016; Yakovleva, 2007)

(i) The effects of food production on the natural environment include soil degradation, biodiversity loss, excessive water contamination, and greenhouse gas emissions connected with rising energy use.

(ii) doubts about food security, food safety, food nutrition, food consumption patterns, animal diversity, and animal welfare, as well as ethical issues associated with the food system, such as concerns about food security, food safety, food nutrition, and food consumption patterns

(iii) economic impacts, such as fair trade and food trade's effects on food suppliers

The debate about the effects of present growth on the planet's ecology, especially the above-mentioned negative effects of agriculture intensification, acted as a stimulus for the creation of the sustainable development notion. In the food production chain context, sustainable development means balancing food demand and nutritional supply while efficiently using resources in an environmentally friendly, economically viable, and socially acceptable manner (Manning, 2016). Because of Brundtland's study, the international community has continued to incorporate the notion of sustainable development into its policy (World Commission on Environment and Development 1987). The necessity of sustainable development was emphasized at the United Nations Conference on Environment and Development (UNCED, 1992) in Rio and the World Summit on Sustainable Development in Johannesburg (2002). Apart from the state government, which has continued to formulate development strategies by incorporating the concept of sustainable development into many aspects of their local policies, other minority groups such as private businesses, industries, and

Non-Governmental Organizations (NGOs) are also making significant progress toward sustainability goals in their daily operations.

2.3 Sustainable certifications

2.3.1 Sustainable certifications in Netherlands

The Netherlands is one of the largest dairy producers and exporters in the European Union (EU). The milk is processed in factories and eventually sold to consumers (as milk or other dairy products such as cheese, butter, and cream). The introduction of sustainability-related labels and logos on dairy products in-store and on-pack has been undertaken by both public and private initiatives. According to (Onwezen et al., 2021), by labelling products, consumers can make informed purchasing decisions, and producers can adopt more sustainable production practices. Consumers may accept sustainability labels and classifications if they raise awareness, but they are not yet driving more sustainably oriented behaviour. The Rainforest Alliance logo, Fair Trade logo, various carbon index schemes, and animal welfare-related logos are some of the most prominent (Gronert et al., 2013). It has been found that knowledge about animal welfare labels and the standards they are based on can significantly influence purchase decisions. Accordingly, (Hoogland et al., 2007) found positive consumer reactions when animal welfare standards are included in meat and dairy product packaging, although the net impact on purchase intentions remains small. According to Milieu Centraal (2022), top-quality labels are the pioneer among food labels; their environmental, animal and human standards are the highest. There is still room for improvement, even for products with one or more top-quality marks; they are not guaranteed to be 100% sustainable. Respect, transparency, and reliability are the requirements that top-quality marks meet. The top quality marks, especially for dairy products in the Netherlands, are EU organic, On the Way of Planet Proof, Demeter, EKO, Beter Leven, and climate neutral certified. European Union label (EU) is related to organic products and responsible for nature. This logo is not especially for dairy products; it was found for many items such as fruit, meat, vegetables, Etc. The products that want to get this logo should use limited and natural pesticides; also, they are not allowed to use fertilizer, and animal feeding should be organic. Animal housing, adequate space, and approach to outdoor places are other items that have to consider for this logo. In case of on the way to Planet Proof program aims to limit dairy production's environmental impact as much as possible. A maximum amount of greenhouse gas emissions per quantity of milk is permitted, and companies must calculate and register their greenhouse gas emissions. The main sign of Biodynamic agriculture and organic farming is the Demeter label. They have to meet additional standards; for instance, a minimum of

10% of farmers' land must be dedicated to biodiversity, and stricter standards on manure are in place to limit nitrogen input. EKO label has requirements similar to EU organic. (Milieu Centraal, 2022). The Dutch Society established Beter Leven, the Dutch label for animal welfare, in 2007 for the Protection of Animals. It considers a variety of farm animal species in addition to pigs. As regards FAW, three tiers are set, representing three levels of ambition. In the Better Life label scheme, a star rating indicates how animal-friendly a production system is used to rear livestock. Animal welfare is given higher priority when there are more stars (Heinola et al., 2021).

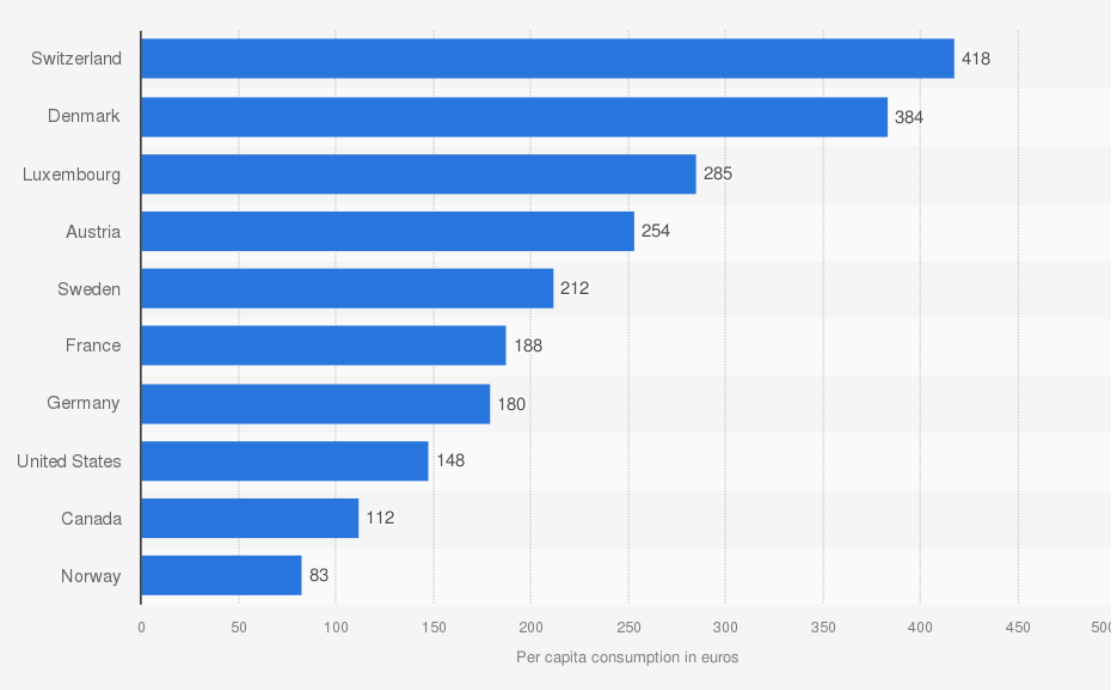
2.3.2 Sustainable certifications in Denmark

The Danish dairy sector consists of the international dairy cooperative Arla, which is the largest dairy group in Europe, together with the other 3 dairy companies with the largest shares; Thise, Naturmælk, and Øllingegård, and 27 smaller dairy companies that primarily specialize in niche products (DAFC, 2015). The cooperative structure of the Danish Dairy Value Chain implies that 95.1% of the raw milk produced is vertically integrated into direct deliveries to dairies. Arla and its farm owners produce 92.2% of the raw milk supply, compared to Thise's production of 1.86% and Naturmælk's 0.65%. According to (Kristensen, 2017), The Danish dairy chain has the highest total factor productivity (TFP) among dairy chains in Northern Europe. In addition, among the top 10 countries that consumed the most organic food per capital in 2020, Denmark is the second one in the world. (Figure 2.3); also, organic farming in Denmark is a political program.

Some organic farmers and experts in 1981 established Danish Association for Organic Farming (LØJ) to control the sales and distributions of organic products. A governmental certification of organic farms, producers, and retailers was introduced in 1987 through a law. Farmers who converted to organic farming and maintained it based on certification were provided with subsidies under the same act. Several Danish farming regulations were passed in 1987, including taxing pesticides and regulating fertilizer use. Denmark's state control label launched the red Ø-mark in 1990.

Consequently, it increased the consumption of organic products, as well as the interest of manufacturers and retailers in producing and selling them. The Danish government controls the whole companies and farms that are involved in producing, processing, packaging, and labelling Danish organic goods. Danish Ø-mark is related to organic agriculture, animal feed, and animal welfare. About 98% of consumers in Denmark are acquainted with this mark, and approximately 80% of people trust it. Danish Coop (FDB), a big consumer cooperative, also proceeded to sell organic products and had a significant impact on the promotion and growth of the Danish market (Terlau et al., 2015).

Figure2. 3 10 countries with the highest organic food per capita consumption in 2020



Source: Statista 2020

2.4 The 2030 Agenda and Sustainable Development Goals

At the United Nations General Assembly in September 2015, the international community established a global sustainable development plan, the 2030 Agenda (Weiland et al., Agenda 2021). The 2030 agenda calls on international communities and member states to implement the 17 Sustainable Development Goals and the associated sub-targets in their state and to support goal implementation in all other parts of the world by 2030 (United Nations, 2015). According to the 2030 agenda, different world challenges like hunger, poverty, health, education, gender equality, and environmental degradation, among others, are interwoven and can only be tackled jointly (Weiland et al., 2021; Nilsson et al., 2016). As a plan of action, the 2030 Agenda strives to achieve balance across three dimensions of sustainability: people, planet, prosperity, peace, and partnership (the 5ps of the SDGs). Currently, on the ground, much business ventures, whether private or public, are facing new challenges as imposed by the 2030 Agenda and its 17 Sustainable Development Goals (UN SDGs), which require them to align their operations and strategies to meet SDGs requirements.

To comply with SDG standards, many business groups have now made UN SDGs a top priority in their daily operations. SDG Compass (Figure 1) provides the tools and information needed to integrate sustainability into any corporate strategy.

Figure2. 4 The sustainability compass and the SDGs

Source: UN SGDs

Considering the 17 SDGs contained in the Agenda 2030, global food systems play a crucial role in achieving Goal 12 (responsible consumption and production and nutrition of goal), Goal 3 (good health and well-being), and Goal 2-(zero hunger) (United Nations, 2015). These integrated Goals are inseparable and encompass economic, social, and environmental dimensions (Weiland et al*.,* 2021). In the same context, the dairy community (Individual Farmers, processing industry, and cooperatives) must embrace multiple technologies, including primary production patterns, to strengthen their sustainability credentials, the feeding of cows, breeding, animal welfare-related issues, manure handling, milk processing, designing of packaging materials (Granato et al., 2022; Montes & Chianese, 2010). As a result, achieving the SDGs in the dairy industry necessitates the use of "greener" technology, improved supply chain management, and product design (Granato et al.,

2022). These initiatives will result in changes in the demand for dairy products as well as how the dairy industry is run, ultimately achieving the Agenda 2030 goals.

2.5 Sustainability certification and its influence on food product evaluation

The influence of sustainability certifications on consumers' preferences, how they judge or evaluate branded products, and other relevant topics have become common research topics in the recent past (Schleifer et al*.,* 2020; Bonisoli et al*.,* 2019). Several studies have confirmed the benefit of certifications information in improving the environment and society's well-being. In contrast, other studies have also reported controversial results indicating that the impact of sustainability certifications is not completely clear. Many sustainable goods are significantly more expensive than conventional products; therefore, consumers who are not interested in sustainability principles are hesitant to look for such information, while other groups of consumers with more sustainable life are even willing to pay more for sustainable products (Janssen et al*.,* 2012). Although these sustainable certifications aim to bridge, the knowledge gap between producers and customers about a product's sustainable features, previous reports have revealed that an inadequate understanding of some sustainability information can lead to negative reactions (Grunert et al*.,* 2014).

Nevertheless, other research has found that even when people have enough knowledge; their awareness and inspiration to modify their sustainable purchasing habits do not always convert into action (Silva *et al.,* 2017; Grunert *et al.,* 2014; Van Doorn & Verhoef, 2015). According to Onwezen et al., (2021), using simple and short message, make sustainability labels and logos more understandable and effective. Other product features, such as brand, price, quality, quantity, and nutritional information, have also been observed to compete with sustainability attributes in certain research (Grunert et al., 2013; Banterle, et al., 2013), and thereby delivery contradicting influence on consumer choice behaviour. According to Silva *et al.,* (2017), taste and price are among the most important motivation elements, particularly for price-sensitive consumers. Other drowning-back issues include a lack of faith in certificates and overloading labels with undesired and unwelcome information (Janssen & Langen, 2017; Grunert *et al.,* 2014). Being female, having children, having higher education, and having a higher income are positively correlated with greater product preference and willingness to pay more for certified products (Chekima *et al.,* 2016; Cai *et al.,* 2017), and the same is true for consumers who live a more sustainable lifestyle (Grunert *et al.,* 2014).

For this study, the above information is used to identify the literature gap that exists. It is important to have a good understanding of the meaning and the importance of sustainability to have an understanding of the importance of this study.

2.6 Environmental motivation, knowledge and awareness

According to Anvari et al., (2014) report, people claim that Radio, TV, and Social Media can affect them. Media plays a key role in motivating people to purchase eco-friendly products and increasing their awareness about natural problems and climate change issues; Because of that, people express this item as a significant factor in buying eco-friendly products. In order to persuade customers to purchase eco-friendly products, companies should consider the importance of promotional tools. It is possible to support consumers in eating delicious, nutritious, and sustainable diets by increasing consumer awareness of the negative impacts of food on the environment. Compared to EU and global food quality labels, national labels are more likely to generate spontaneous and aided awareness. As far as perceived credibility is concerned, the national labels are perceived and recognized better than the European and global labels. The awareness and perception of food labels vary depending on the responsibility of the people for purchasing the food. Compared to consumers without responsibility for food purchases, consumers who are responsible for food purchases have a greater awareness of quality labels and perceive them more reliable (Velčovská *et al*., 2015). With certificate labels on the product, it is possible to guarantee consumers reliable information on the complex issues that certain standards are achieved (Janssen & Langen, 2017; Rodrigues *et al.,* 2016). Therefore, if sustainable certification schemes are encouraged, economies of scale may be realized, and all certified items can profit from such an endeavour (Janssen & Hamm, 2012).

2.7 Communication between retailers and consumers regarding sustainability

Several ways can be used to make sure consumers buy in a more sustainable manner. Providing sustainable choices is by itself not the most effective way to create sustainable purchasing behaviour. It is also necessary for a retailers to intervene in the available choices by replacing products in favour of sustainable options; this means the purchasing decisions that the consumer already made are now corrected to a more sustainable option. However, this strategy does not enforce a durable change in buying patterns since this strategy is based on limiting the availability of (less sustainable) alternatives (Balan, 2020). One strategy that does enforce a change in buying behaviour is promoting people's information and education on sustainable consumption. When consumers are more educated on the supply chain behind the finished product, they will favour sustainable alternatives over non-sustainable products. However, this strategy only works when the consumer values sustainability. Consumers who do not value a sustainable lifestyle will be

indifferent to this strategy and the products they buy (Balan, 2020). Another strategy that retailers might use to enforce sustainable buying behaviour is promoting sustainable shopping. This strategy entails a wide array of communication methods that the retailer uses to highlight sustainable shopping options. One communication method uses 'green claims' and pro-environmental claims regarding carbon emission on product packaging. However, this strategy is based on emotions when purchasing products. Emotions should change by seeing these labels on packaging, but previous research fails to describe which emotions should trigger the change in buying behaviour. It is unclear whether the reinforcement should be positive or negative to change existing buying patterns (Balan, 2020); this means that it remains unclear for this strategy whether the certification labels should upsell sustainable items or down-sell non-sustainable alternatives.

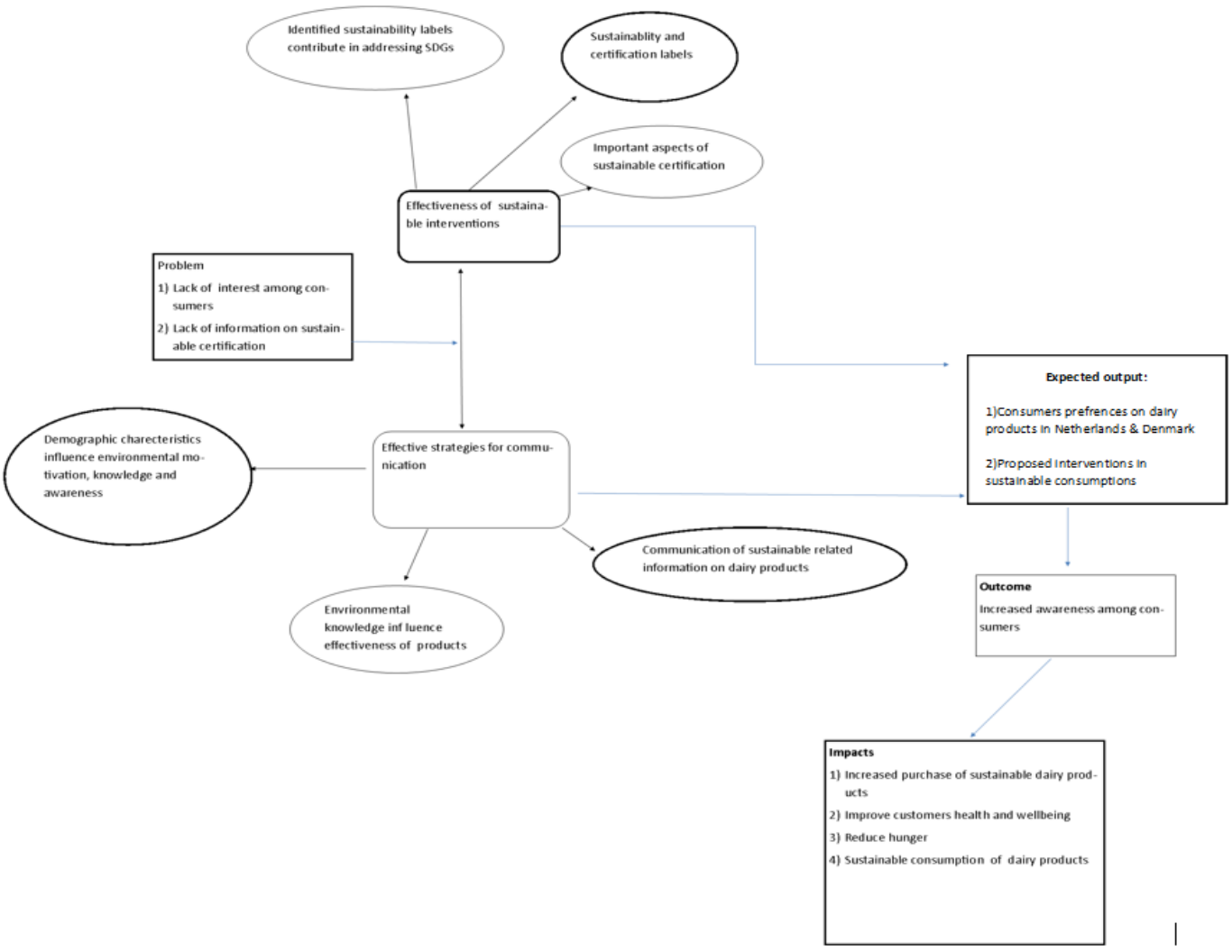
2.8 Environmental friendly consumer behaviour

In Europe, 40% of consumers are actively reducing their consumption of animal-based products; they identify as flexitarians, vegetarians, or vegans (Smart Protein, 2021). Product labels and certifications are important factors enabling consumers to understand their role in protecting the environment. Product certifications and labels influence the consumer's purchasing behaviour toward friendly dairy products. Consumers who value a healthy environment for the products will also have a better understanding of the labels. A consumer-driven desire will drive them to purchase products to protect the environment.

3.1 The Conceptual framework

The proposed methodology is designed to measure the concepts indicated in the conceptual model: Sustainability certificates on dairy products, interest in sustainability information, perceived communication gaps of sustainability information, use of sustainability information, and sustainable development goals.

Figure2. 5 Conceptual framework



Source: Author 2022

CHAPTER THREE
RESEARCH METHODOLOGY

This chapter discusses in detail the research methods employed during the research. It includes the study's philosophy, strategies, design, and data collection methods and analysis. This comparative analysis study was conducted through a literature review, an online survey among consumers in the Netherlands and Denmark and face-to-face interviews with dairy product retailers.

3.1 Survey

The survey results are used for both RQ1 and RQ2. The results give more insight into buyer preferences when purchasing dairy products. The questions in the survey are focused on this consumer preference and the practical use of certification labels on these dairy products, as these are the literary gaps found in chapter two. Self-complete questionnaires (see appendix) were used, allowing the respondents to complete the questionnaires themselves in their own time. Those who needed help were assisted in reducing bias arising from either question in the questionnaire relating to knowledge of sustainability. The questionnaires were filled out through social media, such as LinkedIn, Twitter, and WhatsApp (see table 3.2 for more detailed information on the respondents used).

3.1.1 Sample Size

The study's sample size included 40 questionnaire respondents, 20 from the Netherlands and another 20 from Denmark citizens. Combination sampling was considered for both Netherlands and Denmark; the questionnaire was distributed to identify respondents on LinkedIn and some of the respondents through snowball sampling shared the questionnaire among other people again. The questionnaire was also shared in WhatsApp groups to get random responses. However, it was not exactly random because the people who are not active on social media did not consider. The 40 respondents are randomly selected by searching on social media for mystery shopper communities. These are groups of people of no particular demographic characteristic who professionally give their opinion on buyer experiences. These types of people were chosen as the survey pool since they are perceived to have much experience with all sorts of certification labels and are believed to be able to formulate buyer experiences and opinions to a more in-depth level. The 20 first responding results from each country are used for further analysis in this research. The meeting of the questionnaire

respondents was also balanced by gender (equal parts in the results used). However, the responses were more than the targeted group, where the responses from respondents were 28 from the Netherlands and 21 from Denmark.

Table 3. 1 The number of respondents included in this research

Method	**Key respondents**	**Number of respondents**
Questionnaire	Dutch consumers	20
	Danish consumers	20
Key Informant interview	Dutch retailers	5
	Danish retailers	5
	Total	**50**

Source: Author 2022

3.1.2 Survey Indicators

The intended measurements captured important features such as consumer awareness of the labels and certifications, availability of dairy products, knowledge of dairy products, expiration date, benefits, nutritional information, allergy information, Etc. These questions will require the respondents to rate their attitude from 1 to 5 (least important to most important). Ranking and scoring were used to summate the results into average scores.

3.2 Interviews

The information resulting from conducting the interviews is used for both RQ1 and RQ2 (Table3.2). The results give more insight into the effectiveness of certification and sustainability labelling on dairy products. Existing literature fails to give information on exactly how certification can benefit buying behaviour. Convenience sampling was used where the interviewers were conveniently available and accessible to respondents. Structured and unstructured interview was used in the study, and the collected data was remitted immediately after the interview. The sampling involved using simple quotas to cover details that were key during the analysis and discussion and were done to balance males and females and cover different socio-economic factors and categories by diversifying the interviewers to different departments or sectors within the two countries. Retailers and experts were in total of 10, with a total of 5 derived from the Netherlands and 5 derived from key informants from Denmark. The sampling of the interview for the Five Key Informants in the Netherlands and five from Denmark was based on their role in the dairy value chain. A combination

of convenience and snowball sampling methods through the reached key informants. The latter was used to meet the sample size. (Table 3.1)

3.3 Observations

The researcher did five retail shop visits. The observations were conducted on the selected retail shops, including local shops and the main branch. The observation method assisted in exploring the reputable sustainable certifications on dairy products in the Netherlands. Three local shops in Arnhem and one big retail shop in Nijmegen and Amsterdam were visited. Visiting diverse retail shops in the Netherlands helped the researcher comprehensively understand dairy products' sustainable labels. In addition, Researcher for both Netherlands and Denmark by keywords such as sustainable, labels, and marks conducted Internet research about different sustainable labels on dairy products.

3.4 Research Limitations

The questionnaire and the interview were designed in English, which is neither the Netherlands' nor the Denmark's official language. The researcher noted a factor that excluded the native Dutch and Danish, who cannot read and understand English but are key to the dairy products value chain.

3.5 Data Analysis

The data collected from the two groups were coded and transcribed for analysis using Microsoft Excel. Data from the interview was coded and transcribed for analysis using Microsoft Excel analysed, using Excel for descriptive statistics, correlations, and reliabilities. The description data, such as respondent demographic information and consumers' interest in purchasing sustainable products, were analysed by ranking and scoring. As per the thesis, a sample size of 20 could not be a reliable number to use some analysis tools such as SPSS; therefore, as a researcher, excel was used as an alternative for the descriptive analysis and comparison. The information from the survey identifies which aspects of sustainable certifications are more important to dairy product consumers and which sustainable labels contributed more to addressing the sustainable development Goals (Identified 3 SDGs goals).

3.6 Ethical consideration

The respondents' information was confidential, and the results were not shared with third parties. The respondents were also anonymous, with their identities being confidential. In order to avoid deception and respect the time for the key informants, the time was set at one hour to avoid incontinence.

Table 3. 2-Detailed methodology indicating specific sub-questions and processing the data and their outputs

Sub-questions	Collecting data	Data analysis	Output (related to the conceptual framework)
M RQ 1: What is the effectiveness of sustainability certifications and label claims among dairy product consumers			
What sustainability certifications and labels for dairy products are in the Netherlands and Denmark?	Observations for Netherlands and online retailer shops in Denmark	Ranking the products	Advise consumers' s preferences on dairy products in Netherlands and Denmark
To what extent do the identified sustainability labels contribute to addressing the Sustainable Development Goals?	Interviews	Qualitative analysis through Ms excel to find the relation between sustainable labels and SDGs	Advise consumers' s preferences on dairy products in Netherlands and Denmark
Which aspects of sustainable certification are mostly important to dairy product consumers and retailers in the Netherlands and Denmark?	Questionnaire and interviews	Used Scoring and ranking Transcript With Ms Word and coding with Microsoft Excel	Advise consumers' s preferences on dairy products in Netherlands and Denmark
M RQ 2: What are the effective strategies to communicate sustainability-related information to dairy product consumers in the Netherlands and Denmark?			
In what way do demographic characteristics of citizens in the Netherlands and Denmark influence the environmental motivation, knowledge, and awareness towards purchasing ecologically friendly dairy products	Questionnaire	Descriptive statistics on Excel	Proposed interventions in sustainable consumption
In what way can dairy products communicate sustainability-related information to consumers in the Netherlands and Denmark?	Interview by retailers and Questionnaire	Transcript and coding and Microsoft Excel	Proposed interventions in sustainable consumption
How does the consumer demand for eco-friendly dairy products influence the effectiveness of product certifications and labels?	Interview	Transcript and coding and Microsoft Excel Any non-parametric association study	Proposed interventions in sustainable consumption

Source: Author 2022

CHAPTER 4
RESULTS AND FINDINGS

This chapter presents the findings of this research to answer the two main research questions based on each sub-question. The Additional required information is referred to the annex for further clarification.

4.1 Sustainability certifications and labels for dairy products

4.1.1 Sustainability certifications and labels for dairy products in the Netherlands

The popular and common labels are found from the observation of the daily packages available on the shoppers and supermarket shelves; the labels are mainly seen in dairy products ranging from fresh milk (whole milk as well as half Whole milk), cheese (both organic and non-organic), and other dairy products such as Yoghurt. To understand the meaning of the labels (Table 4.1), the researcher conducted an online google search for each 'Sustainable labels in the Netherlands 'and the detailed interpretation of the logo meaning described. The data collected for dairy products sustainability certification was in the form of labels such as Fairtrade, EU Organic, Beter Leven, Vega, and planet proof (Table 4.1 Milieu Centraal, n.d). The key informants also mentioned that the labels related to animal welfare are well-known among consumers.

Table 4. 1 Sustainability Certifications in the Netherlands

	Certification	**Stage of the value chain**	**Criteria of certification**	**Observation in shops**
1.	Fairtrade	Dairy products across the value chain actors	Certifies milk products that meet social, economic, and environmental standards.	It didn't observe in shops but it is exist in online research
2.	Beter Leven	Dairy products in production in use of fodder	Certification in animal welfare	
3.	EU Organic	Focuses on the production nature of the dairy animals within the European Union. Feeding and exposure of dairy animals.	Focusing on the feeding of animals, use of pesticides, and sustainable food.	

4.	Vega	Ascertain the vegan milk is purely produced from plant-based sources	Certification towards Vegan produced	
5.	Planet proof	Across the dairy Value chain: Production to packaging	Certification towards nature, climate, and animals' benefits	

Source: Author 2022 (Observations, Internet & Interviews)

4.1.2 Sustainability certifications and labels for dairy products in the Denmark

The research finding shows that in Denmark, while relying on online shopping stalls, labelling dairy products identified labels such as Recommended by animal protection, EU organic, the Ø-mark, and keyhole Healthier choice and animal welfare hearts. The retailers' key informants mentioned the same products as those focusing more on animal welfare, healthy living, and promoting organic products. The table below gives a sample of the sustainable certifications that have majorly been highlighted by the key informants with their focus on sustainable certifications within Denmark.

Table 4. 2 Sustainability Certifications in Denmark

S/n	Certification	Stage of the value chain promoted	Criteria of certification	Online shops
1	Recommended by animal protection	Dairy products production within the production	Labels guarantee the animals' welfare in terms of feeding spaces	
2	EU organic	The dairy products that have undergone organic checks are produced in Denmark and out of Denmark, including in countries outside of the EU	Labels provide information on the organic dairy products within Denmark based on the organic raw materials used during production	
3	Key Hole Healthier Choice	Nutrition focus defines the healthy choices within the dairy product. Certification done at the processing point	The labels check the nutrition contents on the requirements standards of fats, salt, dietary fibre, and sugar in a dairy product	

4	The Ø-mark	The organic production of dairy products is certified according to organic requirements. Provided in name of Organic Certified Denmark (DK - Ø-mærke / Statskontrolleret Økologisk)	The labelling focuses on the environment, animal welfare, and dairy production with minimal additives	
5	Animal welfare hearts	Danish legislation and practices associated with breeding animals at the production level	This logo is specifically for animal welfare from Coop supermarket Even at the lowest level, the scheme significantly improves animal welfare	

Source: Author (2022) - Internet search & Interviews

The interviewees from Denmark pointed out most of the above labels, and all of them mentioned the Ø-mark organic label. However, from the online survey of the sustainable certificates of dairy products, it was found that the existence of additional certification for animal protection. A label noted in more dairy products in Denmark is called Animal welfare heart. In addition, national and local retailers and Dairy processors mentioned that sustainability certification labels revolve around organic dairy products in Denmark.

4.2 The identified sustainability labels contribution to addressing the Sustainable Development Goals

The data collected looked into the contribution of sustainability labels to SDGs related to food, Goal 12 (responsible consumption and production), Goal 3 (good health and well-being), and Goal 2-(zero hunger). As from the interview conducted with retailers, the key influencer of certification is mainly driven by either consumer demand or the sustainability regulation within the European Union. As highlighted by one of the national retailers from the Netherlands, the consumer's key question regarding sustainability certification on the product is more towards the benefit they gain from the product. A confirmation from a local retailer in the Netherlands who mentioned that dairy product labels play an important role in ensuring that dairy products contribute towards good health and well-being concerning improving nutrition. The promotion of SDGs certification, as specified by one of the local retailers from the Netherlands, is more focused on satisfying the consumer's immediate needs. In Denmark, also one of the international Dairy processors and one national Retailer mentioned that regulations adhered to the production are to enhance the sustainable production of dairy products. A Dairy processor from an international company in Denmark also mentioned that the regulation required to meet the animal welfare levels is a criterion for certification to be key in enhancing dairy production. The Retailer from a national supermarket who mentioned that certification meets the need to improve and safeguard the health status of the consumers highlighted the sentiments. He highlighted that sustainability certification promoted within their production aims at supporting sustainable development goals (SDGs), responsible production and consumption, and improved nutrition, as well as promoting sustainable agriculture. When the certification labels used in The Netherlands and Denmark are compared, it can be seen that in both countries, the labels are based on addressing the SDGs, as this is European policy; this means there should be little difference between the intended contributions to the SDGs of the used labels. However, the Dutch labels are mainly focussing on animal welfare and production circumstances, which indirectly contributed to SDG 12 (responsible consumption and production). In addition, In Denmark, the labels are mainly focused on the animal welfare and supply chain of the dairy industry. The labels provide information on the sustainability of the production of agriculture and (reduction

of) raw materials used, as well as animal welfare. Therefore, the labels in Denmark are mainly focused on SDG 12 (responsible consumption and production); this means there is not a considerable difference between the subjects of the labels in the Netherlands and Denmark. However, there are still differences in the uses of the labels in the Netherlands versus the use in Denmark that will be related to the factor of communication ways of sustainable labels.

4.3 The Aspects of sustainable certification important to dairy product consumers and retailers in the Netherlands and Denmark

According to an agriculture specialist who works with cooperatives in Denmark, the certification is mainly related to the production of dairy products regarding carbon emission and animal welfare are the key focus consumers consider important. In Denmark, as mentioned, local Retailer key informants highlighted that Sustainable Production Certification is one of the keys to the consumers though that also can be seen in labels 1, 2, and 4 in (table 4.2). In addition, as International Dairy Processor highlighted in Denmark, the traceability of the food's production is considered important for consumers. (Table 4.3) indicates that an average number of respondents consider animal welfare information, such as Poor treatment of animals in food production and using too many resources for food production, as important aspects of dairy certifications. The results from table 4.3 are obtained by averaging the given results on the questionnaire answers. Those were presented in the form of statements regarding four types of information on certification labels and then ranked by the respondents from 1 to 5 (least to most important). Therefore, clarification about animal welfare information on packages is also important for consumers. From this can be taken that in Denmark, certification regarding the production process, such as animal welfare and usage of resources (Environmental dimension), is perceived as the most important aspect to the consumers.

In the Netherlands, the data collected based on question 3 of the survey indicated that animal welfare and human safety regarding dairy products are highly viewed respectively as important concerns by consumers who are highly motivated to consume sustainable dairy products (table 4.3). The international Dairy processor from the Netherlands mentioned that most retailers act on behalf of the farmer's cooperatives to ascertain animal welfare through certification. In addition, based on the information, which is available about sustainable certifications on the product's packaging can conclude that animal welfare and human safety issues are the main aspects that consumers consider to consume a sustainable product (table 4.3). From this data gained from consumers, it can be deduced that in the Netherlands, the Environmental dimensions are perceived as more impactful than labels on the sustainability of the production process.

Table 4. 3 Information about Sustainable Certifications

Certification information	Netherlands	Denmark	Average
Animal breeding-related issues	3.1	3.7	3.4
Poor treatment of animals in food production	4.2	4.1	4.15
Using too many natural resources (water, fuel) for food production	3.6	3.8	3.7
Human safety and health-related issues, e.g., Excess use of antibiotics during diseases control	3.8	3.3	3.55
Average score	**3.58**	**3.66**	

Source: Author (2022)

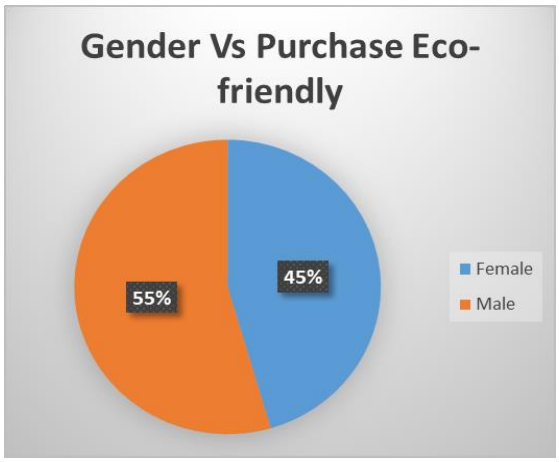
4.4 Demographic characteristics influence the environmental motivation, knowledge, and awareness toward purchasing ecologically friendly dairy products in the Netherlands and Denmark

The conducted case study involved correspondents from Netherlands and Denmark, having the following demographic characteristics.

4.4.1 Gender of the respondents

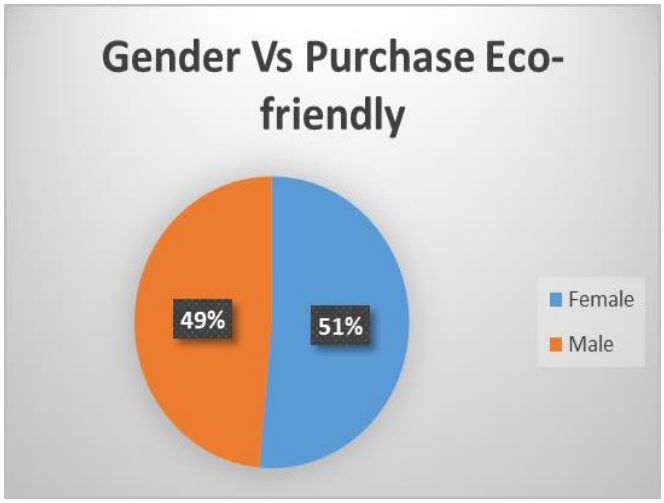
Based on the sampling method used during the selection of respondents gave equal opportunity to both males and females. Based on consumers' responses, the result below shows that in Denmark, the percentage of men who were interested in purchasing eco-friendly products was more than female by the percentage of 55% and 45%, respectively. In the Netherlands, the difference between men and women who are motivated to buy eco-friendly products is 1%.

Figure 4. 1 The relation between gender and purchasing eco-friendly in Denmark



Source: Autur 2022 (Based on Respondents)

Figure 4. 2 The relation between gender and purchasing eco-friendly in the Netherlands



Source: Autur 2022 (Based on Respondents)

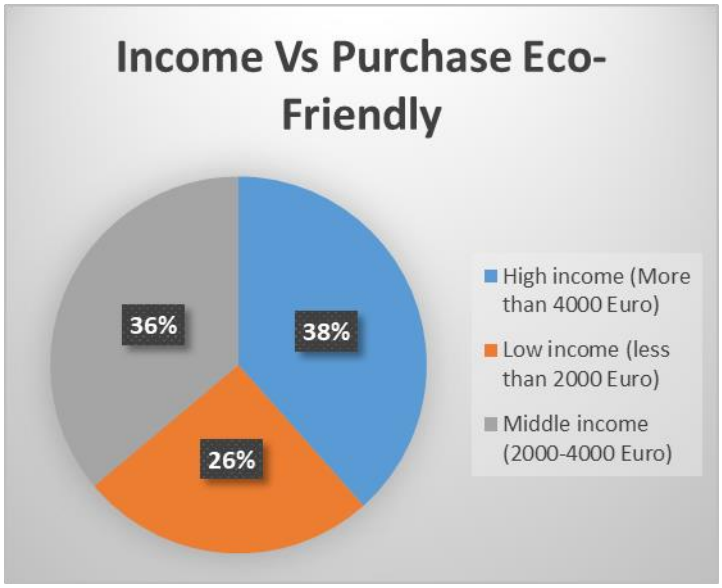
4.4.2 Monthly income level

The relation between monthly income and the willingness to purchase eco-friendly products of the correspondents was determined based on the following categories in the Netherlands and Denmark. The result illustrates that the respondents with high incomes are more interested in purchasing eco-friendly dairy products for both countries, with percentages of 39% for the Netherlands and 38% for Denmark. The data from the questionnaire respondents also showed that those with low monthly income purchase less of the dairy products with certification.

Figure 4. 3 The relation between income level and purchasing eco-friendly in the Netherlands

Source: Autur 2022 (Based on Respondents)

Figure 4. 4 The relation between income level and purchasing eco-friendly in Denmark

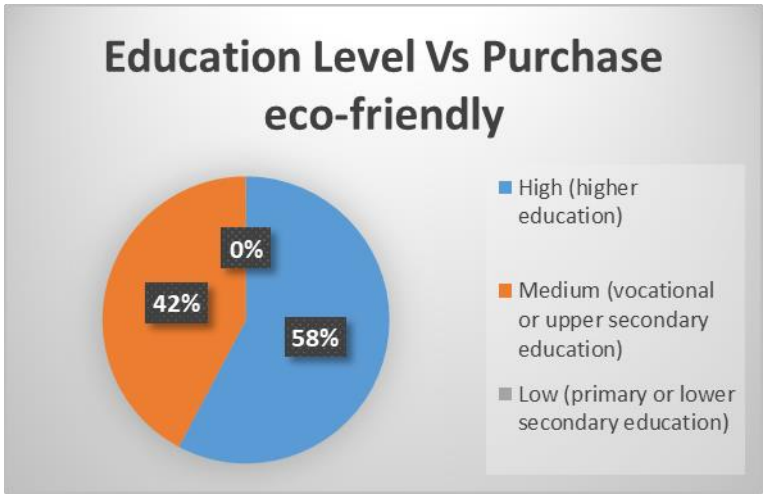


Source: Autur 2022 (Based on Respondents)

4.4.3 Level of Education

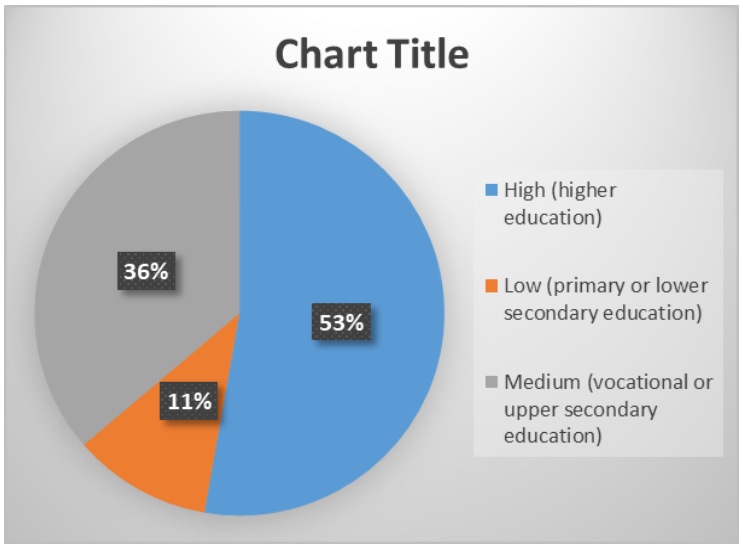
The respondent's sentiment to buy eco-friendly dairy products based on their education level was identified that the people who are more educated have more tendency to buy eco-friendly products. 58% of Dutch respondents with high education desired to purchase environmentally friendly dairy products, and 53% of Danish respondents.

Figure 4. 5 The relation between education level and purchasing eco-friendly in the Netherlands



Source: Autur 2022 (Based on Respondents)

Figure 4. 6 The relation between education level and purchasing eco-friendly in Denmark

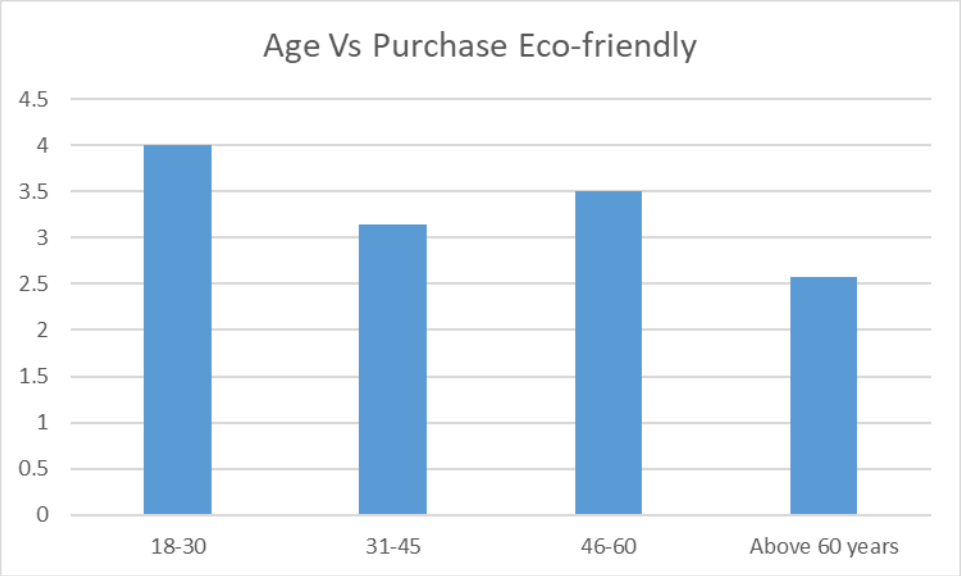


Source: Autur 2022 (Based on Respondents)

4.4.4 Age of the respondents

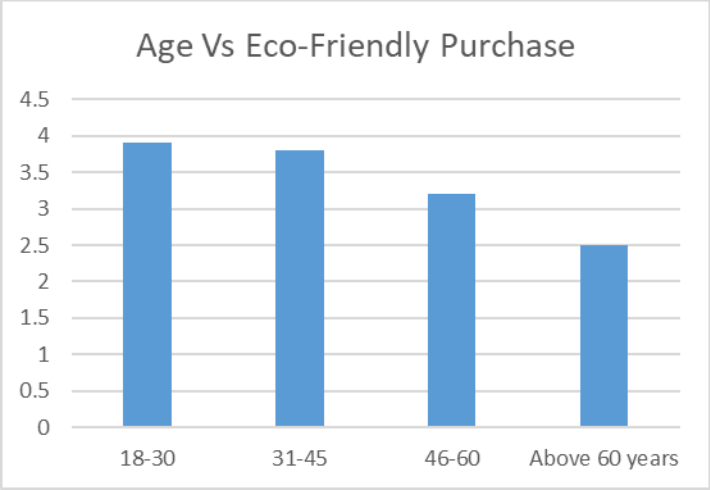
In the questions addressing the categories of consumers that consider eco-friendly products while purchasing dairy products, the Age bracket 18-30 and 31-45 was mentioned as a determinant in Denmark; the young generation is more eager to buy dairy products considering environmental aspects. Similarly, in the Netherlands, the new generation has shifted to Vegan and eco-friendly products; as shown in the chart below, the age bracket of 18-30 has more willingness to consume eco-friendly products.

Figure 4. 7 The relation between age and purchasing eco-friendly in the Netherlands



Source: Autur 2022 (Based on Respondents)

Figure 4. 8 The relation between age and purchasing eco-friendly in Denmark

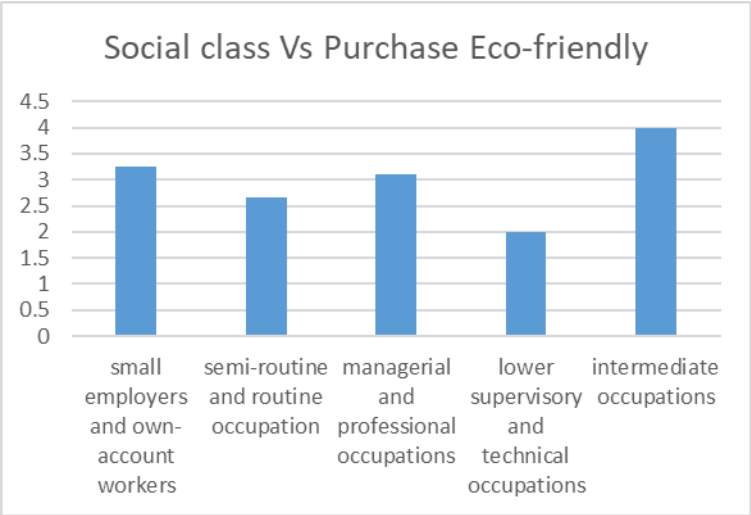


Source: Autur 2022 (Based on Respondents)

4.4.5 Social Class

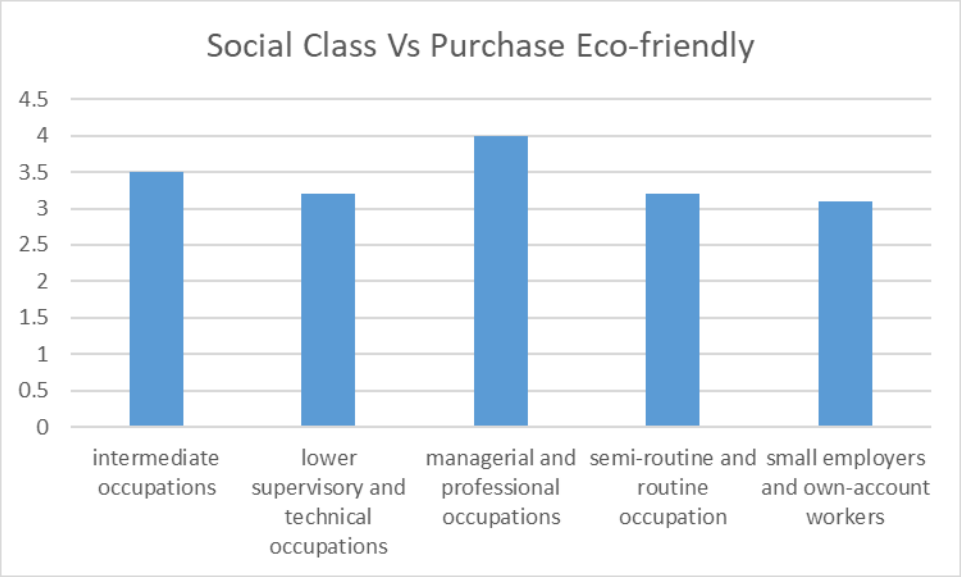
The respondents who participated in the questionnaire were from different social classes, categorized and distributed into their willingness to buy eco-friendly products. In the Netherlands, intermediate occupations were more interested in buying eco-friendly products. In contrast, Danish respondents with managerial and professional occupations were more eager to buy eco-friendly products.

Figure 4. 9 The relation between social class and purchasing eco-friendly in the Netherlands



Source: Autur 2022 (Based on Respondents)

Figure 4. 10 The relation between social class and purchasing eco-friendly in Denmark

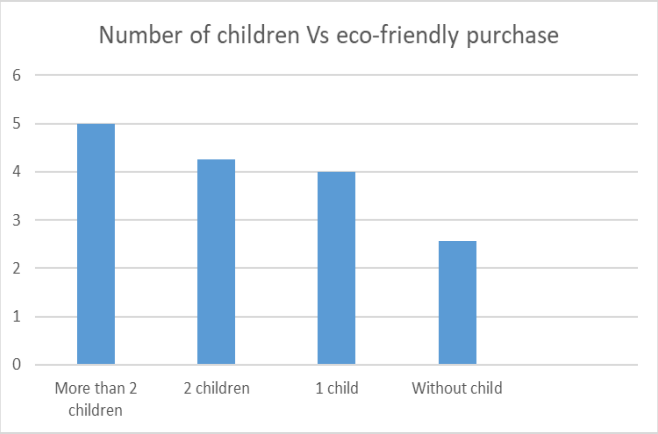


Source: Autur 2022 (Based on Respondents)

4.4.6 Number of children

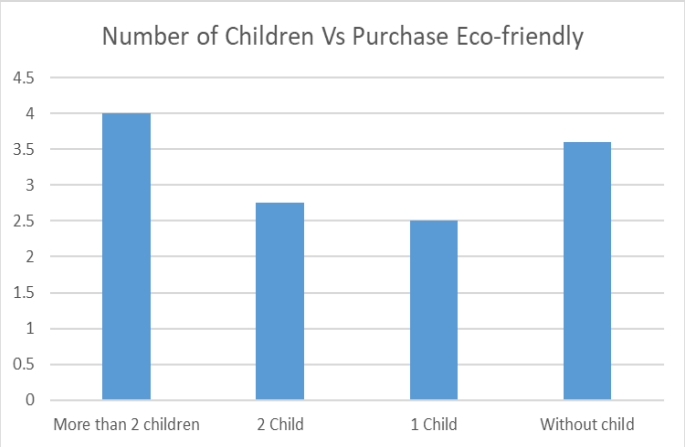
The study data collected from the questionnaire based on the respondent's number of children identified that families with more than 2 children in the Netherlands are more interested in buying eco-friendly dairy products than families with less than 2 children. While among Danish respondents, families with more than 2 children and without a child are interested in buying products related to the environment.

Figure 4. 11 The relation between the number of children and purchasing eco-friendly in the Netherlands



Source: Autur 2022 (Based on Respondents)

Figure 4. 12 The relation between the number of children and purchasing eco-friendly in Denmark



Source: Autur 2022 (Based on Respondents)

The study data collected from the questionnaire identified that education and income levels play a significant role in purchasing and consuming sustainability-certified dairy products. The questionnaire questions enquired about how demographic characteristics influence the purchase of sustainable dairy products. Moreover, the local Retailer also stated that the cost of sustainability-certified dairy products is higher than the normal regular dairy products; the local Retailer and National Retailer from the Netherlands mentioned that the majority of the consumers who are highly going for dairy products are mainly those with little children. While the other local Retailer mentioned that in the Netherlands, young people shifted to vegan feeding habits and lifestyles. As to the data collected from the questionnaire respondents from the Netherlands and Denmark, the young generation was highly concerned about consuming eco-friendly products.

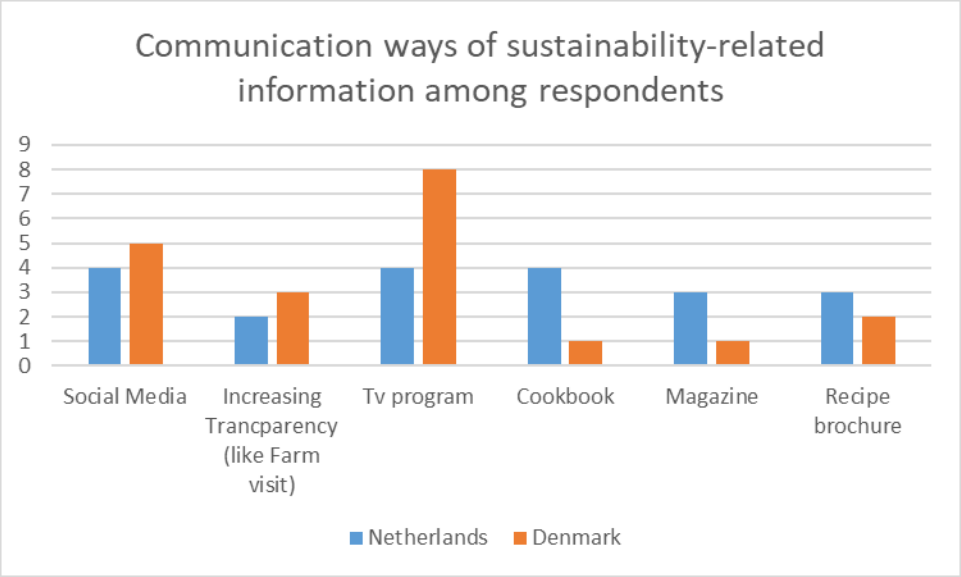
4.5 Dairy products communication on sustainability-related information to consumers

As seen and observed on dairy products within the Netherlands supermarkets, most sustainability information is displayed in front of the packages. In contrast, labelling that describes the daily products' content is mainly on the package's side. One of the local Retailer in the Netherlands cited that as a reason driven by the limited time consumers have towards reading the packaging vehemently while shopping. If the processors can present the process of sustainable products by using simple and understandable words in the form of a story, people will be more eager to read and perceive them. The Dutch respondents mentioned in the questionnaire also point to social media, TV

channels with the cooking program, and recipe brochures as effective ways to communicate information related to sustainability among consumers.

Based on the finding related to sustainable labels, it was seen that there are not many differences between labels and demographic characteristics between Netherlands and Denmark. Therefore, there must be another difference between the two countries to explain the difference in the consumption of sustainable dairy products. According to one of the International Dairy Processors from Denmark, most consumers get stimulated to buy the products based on their prior knowledge rather than information on the labels. Prior information that people have is a significant factor that has an effect on Danish people's sustainable consumption of dairy products. However, there are several ways in which we can communicate more with consumers; she also said that in their company, a project was launched called Coop Talks, which was established to improve the knowledge among farmers and their cooperatives. She mentioned that it could also be promoted among retailers and consumers. The national retailer, who was more involved with institutional consumers such as universities and schools in Denmark, stated that there are some food workshops and camps for cooking as well as food waste schools, especially for students and young ages to Involving and creating a sense of community in educating about healthier eating and exercise habits. The responses from the questionnaire also show that communicating through TV channels and social media was mentioned more, and it can be the reason for increasing prior awareness about sustainability in shopping higher in Denmark. The Dutch respondents mentioned in the questionnaire also point to social media, TV channels with the cooking program, and recipe brochures as effective ways to communicate information related to sustainability among consumers. (Figure 4.13)

Figure 4. 13 The communication ways of sustainability-related information among respondents



Source: Autur 2022 (Based on Respondents)

4.6 The consumer demand for eco-friendly dairy products influences the effectiveness of product certifications and labels

During the interviews, one of the National Retailers from the Netherlands, based on his information, mentioned that Netherlands dairy products are one of the most known across Europe, and people consume products such as Butter, cheese, and milk are inseparable from every household diet. Another Retailer from a local supermarket also highlighted that in the Netherlands, within Europe as Arla, dairy products are sold in and out of the Netherlands with high demand. He also identified that the rise of regulations towards sustainable production and consumption had involved the dairy sector in more eco-friendly activities, considering the dairy sector is a major player in global sustainable agriculture. The International Dairy Processor from the Netherlands, who is closely working with farmer cooperatives, mentioned the rise in market demand for dairy products that are produced with consideration to environmental sustainability production, such as low greenhouse gases emission. Although, one of the local Dutch retailers noted that the demand for organic and vegan dairy products had risen among the young generation in the last few years. He pointed out that the demand for eco-friendly dairy products is mostly present by those who are more aware of sustainability-related information.

In Denmark, as mentioned by one of the International Dairy Processors, the demand for various dairy products is increasing manner with new emerging markets within Denmark and outside of Denmark. The data relating to the information provided by another local retailer from Denmark shows the increased demand due to available information to support the sustainability certifications.

As mentioned by a national Retailer from Denmark, sustainable dairy products are highly demanded due to their importance in promoting environmental aspects. The information provided by the International Dairy processor, who actively works with cooperative farmers in Denmark, stated they prefer purchasing products related to environmental protection and animal welfare.

CHAPTER 5

DISCUSSION

5.1 Discussion about Sustainability certifications and labels for dairy products in Netherlands and Denmark

The few studies on sustainability certification brought up open discussion and provided a glimpse of a genuine understanding of its effectiveness in purchasing and consuming dairy products. At the beginning of the study in the Netherlands and Denmark, the identification of various sustainability certifications available in both countries showed different sustainability certifications (Table 4.1 and 4.2). In the Netherlands, the research showed a significant number of labels ranging from environmental certification, animal protection, and social sustainability (Table 4.1). It is explicit that the primary certification focused on dairy production's negative influence on the natural environment. This result also echoed the research done by Manning (2016), who found that mounting impacts of intensive production could lead to negative externalities to different aspects of sustainability: environment, society, and Economy. The results agree with the study conducted by Brundtand, Staffing (2016), who concluded that the increased use and incorporation of sustainability by businesses, industries, and non-government organisations. The findings elaborated that sustainable development in the dairy value chain is majorly emphasized in the Netherlands based on the benefit provided by environmentally friendly and animal welfare-certified dairy products.

Based on (Table 4.2) in Denmark, some sustainable logos and certifications consider sustainable agriculture systems and lower damage to the environment and organic production. The finding from online shopping stalls showed that Danish Ø-mark, which is related to organic agriculture, exists on the majority of dairy products, which are related to sustainability; it is a well-known label among Danish consumers. The result corresponds with the study of (Terlao et al., 2015) who claimed that this mark acquaints about 98% of consumers in Denmark, and approximately 80% of people trust it. There is also another label in Danish dairy products in the name of animal welfare heart that is specifically for animal welfare from Coop supermarkets, even at the lowest level. In addition, this market was the one that had a significant impact on growing Ø-mark label based on the finding of Terlao et al., 2015. Consequently, Denmark has one dominant label in the name of organic Ø-mark that most consumers know and trust, whereas the Netherlands has none.

5.2 Discussion about the identified sustainability labels contribution to addressing the Sustainable Development Goals

The regulation between different governments within European Union confirms the incorporation of sustainable development that resulted from the world commission on the environment of 1987, which pushed for sustainable development consideration by different stakeholders and actors involved in food production. An indication that the adoption and laws passed on the production of dairy adhering to sustainability regulation by government involvement pushes toward sustainable development as discussed by other authors (Weilams et al., Agenda 2021; Granato et al., 2022). As the study showed, the diverse dairy retailers and processors in both countries are highly involved in promoting the key sustainability incorporation of the need and demands of the changing world as more dairy farmers' cooperatives are engaged in sustainability parameters. The conclusion that the study agrees with is that sustainable dairy production is key in considering all aspects of sustainability. The multiplied use of sustainability certification has increased the incorporation of sustainable certifications as specified by both Dairy processors in Denmark and Netherlands. Therefore, they have continued to formulate development strategies by incorporating the concept of sustainable development into many aspects of their local policies. Other minority groups, such as private businesses, industries, and Non-Governmental Organizations (NGOs), are also making significant progress toward sustainability goals in their daily operations. As a result, achieving the SDGs in the dairy industry has improved supply chain management and product design (Granato et al., 2022). Initiatives are resulting in changes in the demand for dairy products as well as how the dairy industry is run, ultimately achieving the 2030 agenda goals.

When the certification labels used in The Netherlands and Denmark are compared, it can be seen that in both countries, the labels are based on addressing the SDGs, as this is European policy; this means there should be little difference between the intended contributions to the SDGs of the used labels. The Dutch and Danish labels are mainly focused on SDG 12 (responsible consumption and production), and it can be due to European policies. Therefore, the focus of the labels in Denmark and the Netherlands are not comparable.

5.3 Discussion about The Aspects of sustainable certification important to dairy product consumers and retailers in the Netherlands and Denmark

In Denmark and Netherlands, individual retailers have to provide certification branding for their dairy products that provide information to the consumers. However, the study could not identify consumers' preferences for sustainable products, as several studies have confirmed the benefits of

certifications. Information is one of the tools that has proven right in improving the environment and society's well-being (Jansen & Langen, 2017; Grunert et al., 2014).

It is worth noting that more brands provided on dairy products combine certifications within their dairy products relating to animal welfare, usage of resources, as well as branding promoted by different regulatory bodies. A result that confirms the existing studies reported controversial results indicates that the impact of sustainability certifications is not completely clear. The more sustainable goods are produced significantly at a higher cost, the more expensive the products are (Janssen *et al.,* 2012). In contrast, other consumers with more sustainable information and knowledge, as explained by retailers from Denmark, are more willing to pay more for sustainable products, which confirms Janssen et al*.,* (2012), who concluded in their study that the consumers in pursuit of the sustainability certified products feel value for purchasing despite the cost of the dairy product.
In Denmark, certifications are focused on the production process, such as animal welfare and usage of natural resources (Environmental dimension), because these causes are perceived as more important to the consumer than other aspects of dairy product certifications. In parallel, in the Netherlands, consumers are more concerned about the environmental aspect of products when it comes to food certification labels, and labels regarding animal welfare have a higher impact on buying behavior. If we look at table 4.3, the average difference between Netherlands and Denmark seems very small. Especially because the respondents were only 20 people per country, it can be stated that there is not a significant difference between Netherlands and Denmark in this aspect. What can be stated is that consumers in both countries consider the treatment of animals very important.

5.4 Discussion about demographic characteristics influence the environmental motivation, knowledge, and awareness towards purchasing ecologically friendly dairy products in the Netherlands and Denmark

It is necessary to mention that this part was done by considering 20 respondents per country, so the findings must be considered as first indications and interpreted cautiously. It is noted from the research findings that the demographic characteristics of households and consumers changes, the more the sustainability demand for purchasing dairy products changes (Chapter 4.4.1). The study confirms that demographic factors are also major drivers of consumers' preferences for sustainable products, as studied by other authors (Chekima *et al.,* 2016; Cai et al*.,* 2017; Grunert et al*.,* 2014). As the findings show for both Netherlands and Denmark, correspondents with higher education and having a higher income are positively correlated with greater product preference and willingness to

purchase more eco-friendly products that, confirm the exact finding of the study done by (Chekima et al., 2016; Cai et al., 2017). Additionally, the same is true for consumers who have access to information related to sustainability, as discussed by Grunert et al. (2014). They described that consumers' awareness, motivation, and Knowledge influence the purchase and consumption of dairy products based on the desired drive.

The study data collected from the questionnaire identified that the effect of the social class does not play a significant role in purchasing and consuming sustainability-certified dairy products because, in the Netherlands, respondents with an intermediate occupation were more interested in buying eco-friendly products, and for Denmark managerial occupation. In the case of gender, this research is not able to clarify whether gender has an impact on consuming sustainable products because the finding for males and females who are interested in buying environmentally friendly products is in the same range. There has been a shift to vegan eating habits and lifestyles among young people in the Netherlands, so they are more likely to buy dairy products with sustainable certification labels. In Denmark also, the impact of age on purchasing eco-friendly products is similar to the Netherlands, the young generation is more eager to consume eco-friendly products, and it can justify by communication ways of sustainability-related information among the young generation. In the Netherlands, the findings demonstrate that respondents with more than two children prefer to purchase sustainable products that it is in the same direction by (Chekima et al., 2016; Cai et al., 2017) research. In addition, in

In Denmark, respondents with more than 2 children are eager to buy sustainable products, while families without children also are eager to buy eco-friendly products; that can be justified by the high rate of sustainable consumption among Danish people. Therefore, in general, there is not much difference in demographic characteristics in relation to sustainable consumption between the two countries.

5.5 Discussion about Dairy products communication on sustainability-related information to consumers

The findings contradict the outcome that certificate labels on the product guarantee reliable information on complex issues to consumers understand certain standards as discussed by other authors (Janssen & Langen, 2017; Rodrigues et al., 2016). According to one of the International Dairy Processors from Denmark, most consumers get stimulated to buy the products based on their prior knowledge rather than information on the labels. Prior information that people have is a significant factor that has an effect on Danish people's sustainable consumption of dairy products. The finding

agrees with the Balan, 2020 research that claimed; that one strategy that does enforce a change in buying behaviour is promoting information and education on sustainable consumption; when a consumer is more educated on the supply chain behind the finished product, they will favour sustainability.

One of the local Retailer in the Netherlands cited that as a reason driven by the limited time consumers have towards reading the packaging vehemently while shopping and if the processors can present the process of sustainable products by using simple and understandable words in the form of story people will be more eager to read them. The finding of (Onwexen et al., 2021) that said use of simple and short message make sustainability labels more understandable and effective agrees with this research's finding. Based on the questionnaire responses, TV channel programs and social media are the most effective ways to communicate sustainability-related information among consumers in Denmark (figure 4.13). That agrees with the finding of Anvari, 2014 who stated that; people claim that Radio, TV, and Social Media can affect them. Media plays a key role in motivating people to purchase eco-friendly products and also increasing their awareness about natural problems and climate change issues. It is clear that there are some differences in communication ways in Netherlands and Denmark. Danish people use their prior knowledge to buy sustainable products more than the information on labels, and based on the findings, Social media and TV channels have a significant effect on increasing their knowledge. Therefore, increasing people's knowledge through TV programs and Social media about aspects of sustainable products can employ.

5.6 Discussion about the consumer demand for eco-friendly dairy products influences the effectiveness of product certifications and labels

The research found out how the demands of sustainability-certified products are driven mainly towards meeting environmental aspects and animal welfare, promoting sustainability, and advocating for sustainable production (see Chapter 4.6); as stated by both retailers and dairy processors in the Netherlands and Denmark, the demand for eco-friendly dairy products. As the research indicated in the recent period, changes in economic status and level of education pushed retailers to meet the needs of dairy product consumers (Chapter 4.4). As described by a local retailer from the Netherlands:

"*The rise of the sustainability certification has pushed most of the retailers to purchase and demand producers to provide sustainably certified dairy products to us, which is more expensive as compared to normal or ordinary milk.*"

In the Netherlands, there is a new rise in the younger generation changing their dietary habits. The study indicated that the majority of consumers aged between 18-35 are motivated to go for organic and vegan diets. Confirmation of the rise of key regulations in the promotion of organic dairy production, mentioned by a retailer operating within the dairy chain and as mentioned by the role played by different regulation bodies such as the European Union in the promotion of Organic dairy production. The research found out the point of conflict whether Vegan dairy products should be considered part of Dairy products. A contentious issue that calls for relating the source of dairy products to plant products. The finding clearly shows how Vegan products have demand on the rise, have taken space on shelves, and have been categorized as dairy products. In Denmark and Netherlands, there is an increase in demand for eco-friendly products. It can be deducted from the findings related to the young generation's willingness to purchase eco-friendly and plant-based products; therefore, there is not an obvious difference between these two countries.

CHAPTER 6

6.1 Conclusion

In this chapter, it is worth noting the findings that the research focuses on to meet the study's objectives. This research comprehended the effectiveness of sustainable certifications and their corresponding labels among dairy product consumers in the Netherlands and Denmark.

The key aims were to answer the below research questions.

1. What are the effectiveness of sustainability certifications and labels on the purchasing of dairy products among consumers in the Netherlands and Denmark?

The study identified the variety of sustainability certifications within the Netherlands and Denmark, varying from environmental, economic, and social aspects. The identified actors within the dairy value chain and the promoter focus on animal welfare. In the Netherlands, there are labels with the names Fairtrade, Beter Leven, Organic EU, Vega, and Plant Proof. In Denmark, some certifications include the Recommended by animal protection, EU organic, Key Hole Healthier Choice, organic Ø-mark, and V-label Vegan certifications. The paper has provided insight into how vital sustainability certification provides a landscape for promoting sustainable development goals and bringing a sense of accountability and transparency to the dairy value chain. When the certification labels used in The Netherlands and Denmark are compared, it can be seen that in both countries, the labels are based on addressing the SDGs, as this is European policy. The labels in Denmark and Netherlands mainly focus on SDG 12 (responsible consumption and production).

In Netherlands and Denmark, certification regarding the production process, such as animal welfare (Environmental dimension), is perceived as more important to the consumers. Answering the three sub-research questions gave insight into answering the first main research question, as stated above. At this moment, there is not much difference in labels and their contribution to SDGs and important aspect of sustainable certification and labels. It also showed that consumers perceive information regarding animal welfare, which is an actor in the supply chain, specifically at the production level, as important information that influences buying behaviour. The most important conclusion regarding the labels is that there are various labels without one dominant label in the Netherlands. While in Denmark, there is a dominant organic certification under the name of Ø-mark that people are thoroughly familiar with and trust. In addition, a reputable retailer supported this organic label and has had a significant impact on growing this label among consumers. It is clear that adopting governmental policies in terms of regulations, such as devoting the farmers subside; increase the tax on non-sustainable farming, had been driving factors for Danish people to increase

motivation to purchase sustainable products. As a result, we can claim that the Danish label is state-controlled, while the Dutch labels are from the branch itself by NGOs.

2. What are effective strategies for communicating sustainability-related information on dairy products to consumers in the Netherlands and Denmark?

It was worthwhile having understood the role of consumer demographic characteristics such as income level, family composition, level of education, and age influencing the promotion of various sustainability certifications and labels on dairy products. It is highly notable that within the Netherlands and Denmark, there is not a distinct difference in terms of those motivated to purchase Sustainability Certified dairy products. The high-income group and highly educated young people are in a position and more motivated to purchase sustainability-certified dairy products. Clarity and interpretation of the information available on labels are described as key pulling factors to the consumers. Most of the sustainability information is displayed in front of the packages. In contrast, labelling that describes the daily products' content is mainly on the package's side. Based on the questionnaire respondents, Dutch and Danish people mentioned that TV channels and social media are the most effective ways respectively for communicating sustainable-related information.

In Denmark, most consumers get stimulated to buy products based on prior knowledge rather than information on labels. An attribute notable on the difficulty in interpreting the meaning of certain certification logos or limited descriptions of information on the Dairy product packages. Additionally, the lack of prior knowledge of the labels warrants misunderstanding the meaning for those unexposed to information on sustainability aspects within the dairy value chain, a factor that exposed a gap in consumer awareness of effective sustainability certification.

Although, as the emergence of demand for vegan dairy products emerges, more interest is emphasized in biological or organic dairy products. The cost of this has created a market of a certain niche in both the Netherlands and Denmark. In Netherlands and Denmark, as demand is more for eco-friendly dairy products, it is focused on sustainable production. Lastly, the emergence of Vegan dairy habits provides a limited connection as to whether produced from Oats, Almond and Soya should be categorized as dairy products. A source of conflict that would emerge is a conflict between animal products as dairy, and Plant-based products as dairy.

Based on the information, the second main research question can be answered in the following way: an effective strategy for communicating sustainability-related information on dairy products to consumers is, educating consumers on sustainability topics and relating these to labels and certifications. This study showed that people consider prior knowledge rather than information on the packages. Lack of education on the dairy production process results in a lack of interest and

noticeability of the certification labels used. Education is one of the strategies for resolving this issue. Increasing awareness of the consumers and recommending motivations to boost the personal responsibility of an individual consumer should be taken into action; this should ease a behavioural change through education, cookbooks, magazines, recipe brochures, campaigns, student workshops and camps, marketing, and promotion. It concluded that general education on sustainability seems more important than labels. Labels are an additional help to support this.

In general, there is not much difference in labels, consumer preferences, and consumer characteristics between Netherlands and Denmark. Nevertheless, sustainable consumption in Denmark is higher; this could indicate that communication is better in Denmark through TV. Also, Danish consumers are more aware of sustainability issues in their education and TV communication; this could be a topic for further research. Therefore, labels are not decisive, but attention should be paid to education and general communication regarding sustainability labels. Further strategies are discussed in the next chapter (recommendations).

CHAPTER 7

7.1 Recommendations

This study concluded that general awareness of sustainability is more important than specific labels because, in the latter aspect, there is not much difference between Denmark and Netherlands. Therefore, the Netherlands should pay more attention to sustainability communication, and that labels are supportive of this, but not the decisive factor.

A recommendation is, therefore, to educate consumers on the meaning of sustainability in dairy production. The second half of the study concluded that only high-educated buyers are able to decipher what the labels mean, which means only this group of people is able to make educated and sustainable purchases. More knowledge about the intention of the labels is needed to increase the number of people who can buy sustainable products. Moreover, due to a lack of time invested in reading product packaging, the recommendation is to educate people in other ways.
A SMART formulation of this recommendation:

Educate consumers on the meaning of sustainability and the necessity of the sustainability labels used on dairy products by placing educational posters around and in retail shops and streaming educational advertisement segments such as food-related programs on television. In addition, investing in the young generation can be an effective strategy. For instance, to hold campaigns to put sustainable dairy products on schools' agendas as breakfast for students, providing visits to sustainable farms for schools, and promoting plant-based products. By doing so, at the end of 2023, there should be an increase in products sold with sustainability labels over non-labelled products.

The effectiveness of sustainability certification in increasing the purchase and consumption of dairy was the main focus that the study was able to explore. The effectiveness of purchasing and consuming sustainability-certified dairy products is yet to be achieved; the following key areas need to be addressed.

1. Gap in awareness among consumers on the contribution of the sustainability certification towards sustainable development goals. To achieve this, the study missed the connection between the producers and consumers, a gap recommended for further studies. The study proposes the following to be undertaken by the commissioner and retailers

7.1.1 Commissioners

- Conduct a further study on how to raise awareness through Media and reach youngsters to understand the driving force behind limited awareness of sustainable certificated dairy products within the Netherlands in relation to Denmark.

- The commissioners should formulate deliverables such as research into releasing one dominant label in the Netherlands for sustainable dairy products that would enhance coordination and cooperation between the producers and consumers in meeting the need of the consumers through sustainability certification.
- The commissioners should invest further in research on the education of the consumers about the used sustainability labels and their meaning and how to create more awareness among consumers, who are then better able to make educated and sustainable buying decisions.

7.1.2 Retailers in the Netherlands

- Retailers should take the initiative to make consumers aware of the importance of sustainability-certified dairy products through promotions, commercials, and simulations inside and outside their shops.

- The retailers should come to one well-known label and gain people's trust in this label; take the initiative to improve labelling information on the packages to provide detailed information even as a story from farm to shop to attract consumer's attention and be easier to understand

- Signing contracts with some applications such as Too Good To Go to decrease food waste, reduce environmental damage, and encourage customers to buy through them to pay less.

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Appendixes

Appendix 1: Scales and techniques of questionnaires

Question	Type of measure	Measure	Scale
1.	Derived measurement	Awareness of the global dairy products label	Ranking
2.	Derived	Motivation to protect the environment	Ranking
3.	Derived	Attitude to protect the environment	Ranking
4.	Direct	Perceived ability to protect the environment	Ranking
5.	Derived	Belief in buying eco-friendly products	Ranking
6.	Direct	Trusting labels and certification	Ranking
7.	Derived measurement	Knowledge of environmental safety products	Ranking
8.	Derived measurement	Knowledge of eco-friendly dairy products	Ranking
9.	Derived measurement	Knowledge about eco-friendly labels and certifications	Ranking
10.	Derived	Availability of environment-friendly products and labels	Ranking
11.	Direct measurement	Availability of eco-friendly products	Rating
12.	Direct measurement	Availability of eco-friendly labels and certifications	Rating
13.	Direct measurement	Attention to the labels and certifications	Rating
14.	Direct measurement	Purchase behavior on environmental friendly dairy food products	Rating
15.	Direct measurement	Demographic characteristics	Continuous metric scale
		Age	Metric
		Income per month	Metric
		Education level	Metric
		Gender	Metric

16.	Direct	Respondent's perception of informative labels and certifications	Rating scale
17.	Direct	Demand for additional information/text on the label	Rating scale

Appendix 2 Questionnaire

Part 1

1. **Social and demographic variables**

a) **Gender**; = 1. Male 2. Female

b) **Age**; 1= 18-30 2= 31-45, 3=46-60, 4=above 60 years

c) **Monthly Income;** 1=Low income (0-2000€) 2= Middle income (2000-4000€) 3= High income (More than 4000€)

d) **Children;** 1= None ; 2=1; 3=2 or more

e) **Education level;** 1= Low: primary or lower secondary education; 2= Medium: vocational or upper secondary education; 3= High: higher education.

f) **Social class**; 1= managerial and professional occupations; 2 = intermediate occupations; 3 = small employers and own-account workers; 3= lower supervisory and technical occupations; 4= semi-routine and routine occupation

Part 2

2. What sustainability certification do you consider when buying dairy products?

List certifications/labels options current in the market products 1= W, 2=X, 3=Y, 4=Z

3. Which sustainability certificate or label characteristics have more positive effects during dairy product evaluations? Ranked in order of importance.

   1= Fair trade (Social and Economic dimension) 2=Carbon Emission (Environmental Dimension) 3=Biological certification (Environmental Dimension) 4= Animal welfare (Environmental Dimension) 5= Resources usage (Economic Dimension) 6= others

4. Which aspects of sustainability information provided in the list below are important evaluation criteria when buying the Dairy product? Rate the level of importance for every list of sustainability aspects provided.

Where, 1 = Least; 5= Most

	Sustainability information	Scoring				
		1	2	3	4	5
1	Carbon emissions caused during transportation/packaging					
2	Packaging materials that are not recyclable					
3	The amount of packaging used on products					
4	Starvation and malnutrition in the world population					
5	The use of pesticides used in food production					
6	Poor treatment of animals in food production					
7	The amount of food that is wasted					
8	Using too many natural resources (water, fuel) for food production					
9	Labour rights in general (Poor working conditions, child labor, wages for producers)					
10	Less willing to hire women and disabled groups					
11	Animal welfare-related issues					
12	Human safety and health-related issues, e.g., Excess use of antibiotics during diseases control					
13	Animal biodiversity (percentage of local vs. high breed)					
14	Animal breeding-related issues					

5. What is other additional (hidden) sustainability information apart from those mentioned in the list is also important for you?
6. What strategies exist for effectively communicating sustainable-related information to dairy product consumers in the Netherlands?

Part 3

Testing for the effectiveness of product certifications and labels based on eco-friendly products availability and consumer environmental friendly knowledge, motivation, and awareness

To what extent do you agree or disagree with the following statements? Please circle the number that corresponds to your answer. (Strongly disagree=1, strongly agree=5)

7. I buy dairy products with the concern of protecting the environment in mind.

1	2	3	4	5

8. I am willing to pay a higher price for environmentally friendly dairy products

1	2	3	4	5

9. I am convinced my purchasing eco-friendly dairy products can contribute to protecting the environment.

1	2	3	4	5

10. Whenever I am purchasing dairy products, eco-labels are among the important elements to consider

1	2	3	4	5

11. Food products with certifications and labels are protective of the environment

1	2	3	4	5

12. Consuming eco-friendly dairy products helps in protecting the environment

1	2	3	4	5

13. Ecofriendly dairy products are easily available and accessible in the market

1	2	3	4	5

14. Certifications and eco-labels always draw my attention whenever I am shopping

1	2	3	4	5

15. Certifications and labels on products provide relevant information about the benefits to the environment

1	2	3	4	5

16. Additional text information should be added to the dairy products labels to ensure positive environmental effects

1	2	3	4	5

Appendix 3 Interview checklist retailers

Main question 1	Responses
To what extent do sustainable labels in dairy products address SDGs?	
Which aspects of sustainable certification do consumers consider before purchasing a dairy product?	
Main question 2	
Which category of consumers purchases environment-friendly dairy products?	
In what way do dairy products communicate sustainability-related information to consumers in the Netherlands and Denmark?	
How does the consumer demand for eco-friendly dairy products influence the effectiveness of product certifications and labels?	

Design of Questionnaire

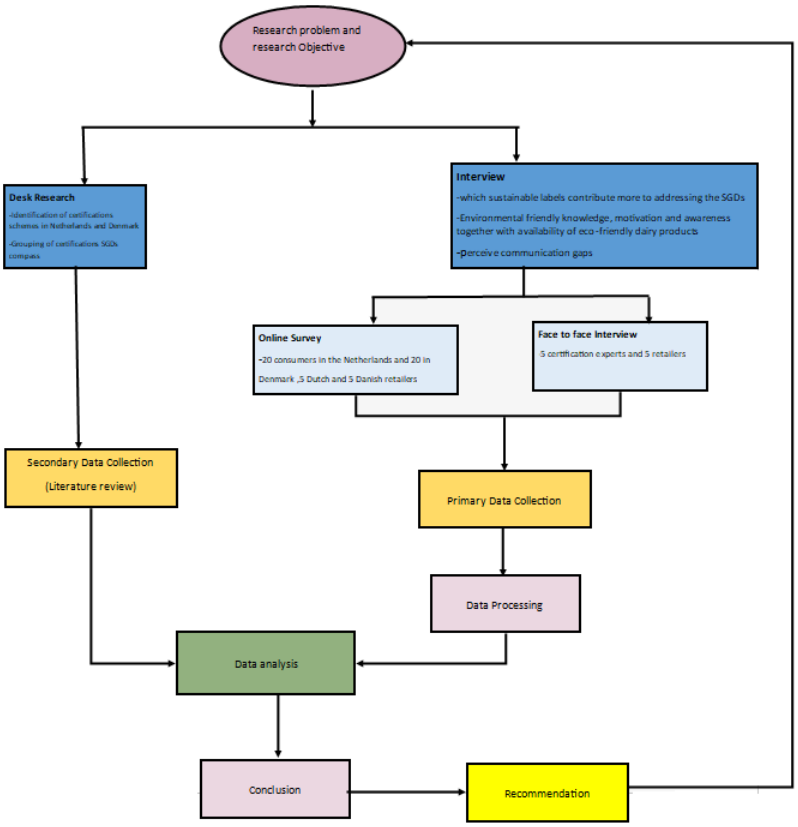
The questionnaire was divided into three main portions. The first part will contain demographic questions evaluating the respondent's knowledge, awareness, and motivation for environmentally friendly dairy products. The second part had questions to identify the labels and certifications on dairy products both in Netherlands and Denmark. The questions also assessed the effectiveness of the certifications and labels on the dairy products in the market and how they influence the respondents' choice and willingness to buy. In this section, the respondents were required to rate the influence of the labels and certifications from 1, which represents strongly agree', to 5, representing' strongly disagree'. These questions were designed to cover the theories explained in the theoretical framework in the literature review section. The third part of the questionnaire collected the demographic characteristics of the respondents. These include age, gender, education level, income, and faculty. These factors are collected to answer whether they affect the market's choice of eco-friendly dairy products. The details of the questionnaire are found in the appendix section.

Three study implementation was achieved through two main stages, as described in detail in figure 5.

(i) The first stage involved the country's case study analysis. The landscape of sustainable certificates and their corresponding label claims in dairy products were identified through observations of dairy products such as organic milk and fresh milk on shelves in the Netherlands and from literature reviews from internet searches and official websites of dairy retailing companies in Denmark.

(ii) The second stage (the interview phase) focused only on the Netherlands and included online consumer surveys and face-to-face interviews with dairy experts and retailers. The designed questionnaire (appendix 1) will measure some hypotheses indicated in the conceptual framework, i.e, Interest or concern of sustainability information and perceived communication gaps of sustainability information. To achieve this objective, a sample size of not less than 40 dairy product consumers who consume different kinds of dairy products such as basic, organic, and milk with a specific label; 20 dairy consumers in the Netherlands and 20 in Denmark, and five Dutch retailers and five Danish retailers were reached at the country level through an online survey using different social network platforms, including LinkedIn, and Twitter, and WhatsApp. On the other hand, face-to-face interviews were carried out with only 5 dairy certification experts and 5 retailers of dairy retailers to identify which aspects of sustainable certifications are more important to dairy product consumers and retailers and capture more information about consumers' behavior and interest because they are very close to consumers (Figure 22).

Appendix 4: Research Framework



Appendix 5: List of Retailers and Processors in Netherlands and Denmark

Netherlands		Denmark	
Retailers and Processors	Access way	Retailers	Access way
Local Supermarket Manager	Fieldwork	**National Supermarket**	LinkedIn
National Supermarket (Head Office)	Fieldwork	**National Supermarket**	Official email
Local Supermarket Manager	Fieldwork	**Local Supermarket**	Recommended by colleagues
International Company Strategic Program Manager	Official Email	**International Company**	Official email

International Company Dairy Development Manager	Recommended by their colleagues	**International Company**	LinkedIn

Appendix 6: List of social media used to filling the questionnaire

Social Media communicating	**The link of Questionnaire which shared**
LinkedIn	https://docs.google.com/forms/d/e/1FAIpQLSfmz0w2GJGFoAPCysFbl7hgLXpGI49fUNyXFbHk1pKF-lYyEA/viewform?usp=sf_link
WhatsApp	https://docs.google.com/forms/d/e/1FAIpQLSfmz0w2GJGFoAPCysFbl7hgLXpGI49fUNyXFbHk1pKF-lYyEA/viewform?usp=sf_link
Twitter	https://docs.google.com/forms/d/e/1FAIpQLSfmz0w2GJGFoAPCysFbl7hgLXpGI49fUNyXFbHk1pKF-lYyEA/viewform?usp=sf_link