UNIVERSITY OF LJUBLJANA
SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

AN ANALYSIS OF SUNFLOWER SEED OIL MARKET FROM THE VIEWPOINT OF A POTENTIAL NEW ENTRANT IN THE SLOVENIAN MARKET

Ljubljana, September 2023 LARA EVA MORI

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LIST OF ABBREVIATIONS

sl. - Slovene
GMO – (sl. Genetsko spremenjeni organizem); Genetically Modified Organism
USD – (sl. Ameriški dolar); United Stated Dollar
CAGR – (sl. Letna stopnja rasti); Compound Annual Growth Rate

INTRODUCTION

Sunflower seed oil is a globally well-known vegetable oil. Throughout history, it has maintained a strong market share in the highly competitive vegetable oil market. A large proportion of vegetable oils are sold to end consumers in the form of edible oil or as an ingredient in food products. With current global trends of a sunflower oil shortage, rising health awareness, and higher disposable incomes, healthier cooking oils are in high demand. End consumers tend to lean less towards industrially produced, refined oils and more towards natural, non-refined, and cold-pressed oils (Pilorgé, 2020).

All types of edible vegetable oils vary in flavour, smell, chemical properties, and nutritional value. These characteristics are normally defined in the process of oil extraction (the pressing style). As a result of different extraction methods and oil processing, we differentiate between refined and non-refined oils. While refined oils remain the most widely known and used on a global scale, non-refined oils (such as traditionally pressed and cold-pressed oils) are gaining popularity due to their beneficial effects on human health.

A potential Slovenian company, which currently operates as a family farm, wishes to formally enter the sunflower seed oil market with their flagship product, non-refined sunflower oil. Even though non-refined sunflower oil is already on the market in Slovenia, its availability and varieties are limited. Non-refined sunflower oil remains overlooked in comparison to olive oil, which is considered its closest competitor and substitute. As non-refined sunflower oil is considered scarce and relatively unknown among Slovenian consumers, the potential company sees a big opportunity in positioning its novelty product in the Slovenian vegetable oil market. The company believes that with the correct branding and marketing strategy, there are a variety of customers willing to buy their product.

The main purpose of this master's thesis is to analyse the market for sunflower seed oil, both on a global and local scale. By analysing the global market and identifying trends in the vegetable oil industry, the analysis will then be applied to the local level, showing production in Slovenia and identifying local trends. By providing conclusive comparisons of oil characteristics, especially in regards to their effect on human health, the thesis aims to raise awareness about the importance of differentiating between different types of oils.

Through empirical research, the thesis aims to analyse the market landscape and consumer perception surrounding non-refined oils, with a specific focus on the introduction of traditionally pressed sunflower oil as a novel product. By examining the existing consumer knowledge, purchasing habits, consumer preferences, and expectations, the new company will gain data on how to best advertise their product, who the potential consumer base is, and how much they are willing to pay for the product. By gathering data on Slovenian consumers, the company will acquire valuable information on the overall demand for natural, unrefined products in the Slovenian market.

Findings from the research will be highly valuable in acting as a starting point for business, not just for the new company but also for other small-business entrepreneurs and farmers who will be able to use the data for improved marketability goals and further in-depth analyses.

The goals of the thesis are:

- To analyse the sunflower seed oil market, including competition, substitutes, and global trends.
- To establish whether the sunflower seed oil market is a potential market for the new entrant and whether there is a gap in the availability of such a product on the current market in Slovenia.
- To analyse consumer preferences and patterns.
- To establish whether and under which conditions Slovenian consumers are willing to buy such a product once the product and its positive qualities are presented and advertised.
- To create a price comparison of other non-refined oils and available substitutes.
- To identify potential opportunities and threats to entering the market as a new company.

The thesis consists of a theoretical part and an empirical part. The theoretical part of the first chapter provides a brief product description. The second chapter is an analysis of the global market, followed by an analysis of the local (Slovenian) market in the third chapter. The fourth chapter is dedicated to the presentation of a local company and their main product. The following chapter is dedicated to the empirical analysis of primary data collection in the local market. Next, the findings of the analysis are applied to the practical example of the new company, followed by a SWOT analysis. Lastly, the thesis proposes a strategy and provides recommendations for the company. While the theoretical part is based on scientific secondary sources, the empiric part is based both on secondary and primary data, which will be collected through quantitative data collection in the form of an online survey questionnaire. When presenting the company, the data will be presented as given by the representatives.

1 PRODUCT DESCRIPTION

Helianthus annuus, also known as the common sunflower, is a globally well-known plant, famous for its outstanding flowering as well as the construction of its stem, leaves, and root. The plant originated in Central America and was brought to Europe by Spanish conquerors in 1510, only to serve as an exotic decorative plant for a long period of time. Only in the mid-19th century was the plant first grown as an oilseed in the steppes near the Caspian Sea. From there on, it spread from Russia and Ukraine first to Southeastern Europe, then France and Spain, followed by other places in the world. Since then, it has maintained its wide acceptance and popularity due to attentive selection and gradual breeding procedures of new

sorts, the creation of hybrids, cultivation, and crop processing, as well as changes in its morphological characteristics, such as its oil and protein contents (Čeh, Tajnšek & Žveplan, 2009).

The sunflower managed to maintain its competitiveness in the global market through innovation in genetics, which allowed for research of added value, leading to a higher market segmentation (Pilorgé, 2020). The sunflower oil industry can be classified into three categories of applications: food, biofuels, and personal care. The many uses of its crop make the sunflower a very valuable commodity, predominantly in the food industry, sought out by food manufacturers, restaurants, and end consumers. As the sunflower seed contains from 39 to 50% oil, it is most commonly produced as an oilseed for the purposes of producing quality edible oil. Aside from vegetable oil, its uses include producing an oilseed protein feed source and a forage crop. In recent years, some countries, such as Australia, Brazil, and Turkey, have studied potential markets for sunflower oil as a potential resource for biolubricants and biodiesel production. In the cosmetics industry, sunflower oil is used as an added ingredient to emulsify cosmetic products (Čeh et al., 2009).

Generally, the nutritional value of vegetable oils was found to be essential for human consumption. Oils are divided into vegetable oils and animal fats. Both are composed of saturated and unsaturated fatty acids in different proportions. Animal fats contain mostly saturated fatty acids, which can, in abundance, negatively affect human metabolism, resulting in high blood pressure, inflammation, a lower immune system, atherosclerosis, and depression. On the other hand, vegetable oils are mostly composed of unsaturated fatty acids, which have a direct role in human health. Since the human body is not capable of synthesising them, they must be consumed through food. Unsaturated fatty acids, such as Omega 3, have been proven to have beneficial effects on the human body and wellbeing. Vegetable oils are also rich in antioxidants, which are tocopherols (vitamin E) and polyphenols, which are known to lower levels of blood cholesterol (Čeh et al., 2009).

1.1 Sunflower seed oil

The landscape of cooking oils has drastically changed over the past 10 years as the market has evolved with the growing availability of new products such as grapeseed oil, coconut oil, and avocado oil. In the last decade, the health aspect has been what drives sales and affects the market share of each type of oil. Oils are grouped based on their prominent fatty acids. Vegetable oils and seeds fall into the groups of monounsaturated and polyunsaturated fats, while tropical oils, such as coconut oil and palm oil, fall into the group of saturated fats, making them less favourable. The consumer's favourite remains olive oil, although other vegetable oils, such as sunflower and grapeseed oil, can provide similar benefits (Lewsley, 2022).

Sunflower oil contains a high level (85%) of unsaturated fatty acids, mainly oleic and linoleic acids. This makes it not only one of the most important vegetable oils for human nutrition

but also one of the best-quality vegetable oils for its fatty acid composition. Furthermore, it is exactly the fatty acid composition and oxidant levels that determine different types of sunflower oil and their final use (Čeh et al., 2009).

The chemical composition of sunflower oil depends mainly on the genotypic properties of the planted seed. Generally, there are three types of sunflowers: the standard, mid, and high-oleic acid-containing types. The high-oleic sunflower contains 84% oleic acid in its oil, which is four times more than the classical sunflower. It has the highest oleic level compared to other oleic oils, such as safflower, rapeseed, canola, and soybean, giving it a competitive advantage. As new sorts of sunflowers are bred to contain higher contents of oleic acid, the oil of this sort is approximating olive oil in regards to quality, leaving room for potential growth in the sunflower oil market (Čeh et al., 2009).

A study by Sobrino, Tarquis, & Cruz Díaz (2003) has shown that different environments make it possible to produce oil of different characteristics at different latitudes, based on the type of sunflower. The study found that the balance between oleic and linoleic acids has a strong inverse relationship, meaning that colder climates in North America grow seeds containing 70% linoleic acid, while those in southern areas show lower levels of linoleic acid at 30% but higher levels of oleic acid, and vice versa. This proves that concentrations of fatty acids are highly affected by two variables: geographical location and the temperature at which the sunflower matures. This is what finally determines the type of oil produced in an area (Sobrino et al., 2003).

1.2 Pressing styles

When pressing oils, we differentiate between different methods of oil extraction, or pressing styles. The method used usually differs between industrial producers and small oil producers, as it defines the characteristics of the final product. Nevertheless, all extraction processes aim to produce high-quality oil with minimal undesirable components (Dunford, 2016).

Industrial producers of edible oil most commonly extract oilseeds with solvent extraction, which achieves the highest extraction yield, making it the most efficient technique to obtain oil from oilseeds. It is the most often used extraction method in today's contemporary oilseed-processing industry, followed by mechanical extraction using a screw press. Mechanical pressing has a lower oil extraction yield but remains widely used by small producers due to its low capital cost (Dunford, 2016).

The crude oils obtained by the two mentioned extraction processes contain high levels of impurities. That is why they have to be further refined to make them suitable for human consumption. As these oils are obtained by an economically efficient process, their price is usually the lowest amongst edible oils (Hashempour-Baltork, Farshi, Alizadeh, Azadmard-Damirchi, & Torbati, 2022). These refined oils are of high economic importance, as they are used widely on a global scale by food manufacturers or restaurant services.

Smaller oil producers engage in other methods of oil extraction, not only because they cannot afford the high investments for industrial production equipment but also because they often wish to offer a different end product. These other oil extraction methods include traditional pressing by roasting seeds and cold pressing. Oils extracted by such methods do not need to be further refined if the raw material—seeds—is of suitable quality. Such oils—non-refined oils—are more expensive in comparison to industrially produced oils but are generally considered healthier, even premium-quality oils. As non-refined oils are subordinate in production compared to industrial oils and have only gained popularity in the last few years, there is limited data and analysis available for their economic importance. Nevertheless, the market for non-refined and cold-pressed oils is gradually expanding, not only in the European Union but globally (Premović, Dimic, Radocaj, & Dimic, 2014).

Traditional pressing by roasting seeds requires a specific procedure, where seeds are, to some extent, processed (usually crushed and roasted). Oils obtained by this technique are unique, as roasting the seeds allows the extracted oil to develop a stronger flavor and fragrance. A typical representative is pumpkin oil, widely popular in Slovenian cuisine.

On the other hand, extraction by cold pressing offers a simple way of extracting oil while preserving its bioactive constituents. Even though cold pressing is not a physically demanding process, it is more demanding in terms of preparation and precise pressing conditions. A typical representative is extra virgin olive oil, well known for its long tradition in Mediterranean cuisine.

1.3 The refining processes

When it comes to public acceptance and marketing of vegetable oils, quality and stability in production are crucial factors, determined by seed quality and seed treatment, extraction method, and processing conditions. After harvest, seeds are prepared to be pressed to extract oil. After being partially dehulled, the seeds are pressed using a chosen method of oil extraction. As a result of pressing, crude, non-refined oil is obtained. Aside from high amounts of desirable minor components, crude oil can contain certain impurities, either naturally present in the seeds or formed during harvesting or storage. That is why crude oil typically goes through a process of refining, a chemical or physical process, with the objective of reducing or removing impurities and contaminants. Simply put, refining is oil cleansing with applied treatment, typically ensuring minimal loss of oil and minimal damage to the oil composition. Inarguably, by processing, alterations in the chemical composition of oils are caused, affecting both their nutritional quality and oxidative stability (Pal, Patra, Sahoo, Bakhara, & Panda, 2015).

Conventional methods to process oils include processes such as alkali treatment, degumming, bleaching, and deodorization. Although these processes provide good results in terms of oil characteristics, such as a higher smoking point and bland flavour, they are causing health concerns for human consumption. As these processes alter the functional

properties of nutrients, most of the oil's natural quality is lost in the process. Other friendlier options, such as enzymatic treatment, do exist but are more expensive and therefore seldom practiced by manufacturers in the industry. A sustainable and integrated refining process, with consideration of cost efficiency, remains a challenge for future industrialists and researchers. Although research exists, very few commercial applications have been reported (Chandrasekar, Sampath, D. Belur, & Regupathi, 2015).

A study by Kreps, Vrbiková, & Schmidt (2014) showed that even though the refining process removed unfavourable components and guaranteed the quality of oil, other valuable substances were simultaneously removed. After refining, levels of valuable tocopherols were significantly reduced compared with crude oil from the same batch. As antioxidants and polyphenols are sensitive to high temperatures, they are destroyed in the process of oil refining. On the contrary, oils that remain unrefined keep their natural antioxidative components, serving as a natural protector for the oil. Health-wise, cold-pressed oils are winners since they retain most of their natural properties along with their original taste. The authors propose adjusting the oil-processing conditions to reduce temperatures and shorten refining stages (Kreps et al., 2014).

Historically, the reasoning behind refining was to remove free fatty acids from oil. Traditionally, in Europe, olive oil prevailed in the Mediterranean countries, while pork, lard, and butter prevailed in Northern Europe. At the time, high-quality products were associated with low free fatty acid content, while high acid values meant low-quality products. This resulted in refining plants producing edible oils with very low acid values. A lot of consumers still connect low acid value with higher product quality (Čmolík & Pokorný, 2000).

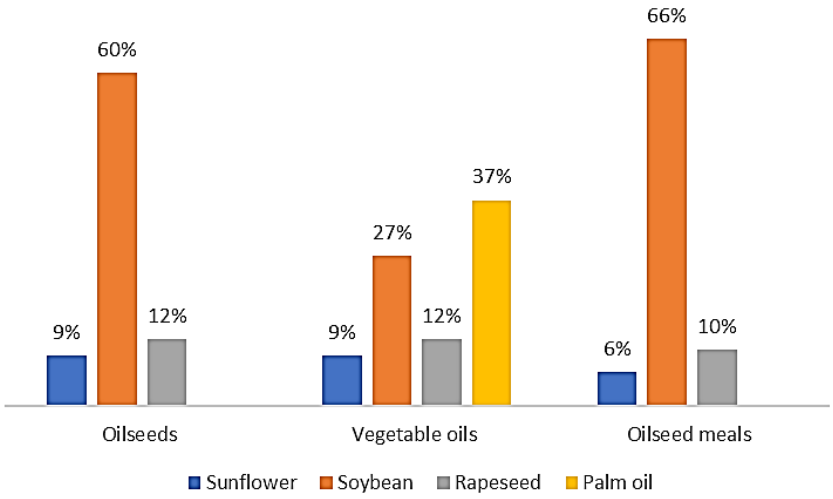
In modern times, the reasoning behind the refining process is to obtain greater quantities of oil suitable for a wide variety of uses and a prolonged shelf life. After refining, industrially refined sunflower oil gets a lighter colour, bland flavour, and smell, along with its high smoke point characteristic. Additionally, vegetable oils are more prone to oxidation than animal fats. This oxidation is also known as rancidity, and it results in a degraded quality of oil. Oil can become rancid due to many factors, such as inadequate temperature, light, oxygen levels, and the presence of metal ions. Non-refined oils are always more sensitive to rancidity than refined oils (Čeh et al., 2009).

On the other hand, by avoiding the refining process, the oil pressing efficiency is lowered, meaning a lower oil extraction yield. The extracted oil develops a darker colour and a stronger smell, along with its characteristics of a low smoke point, increased foaming when heated, and diminished storage properties.

2 ANALYSIS OF THE GLOBAL MARKET

In the global market, sunflower is the third most produced oilseed in the world, representing 9% of all oilseed production in the period 2014–2018, preceded only by soybean (60%) and rapeseed (12%). Due to its seed containing around 44% oil and 16% protein, sunflower is an oil and protein species, competing on both the vegetable oil market and the oilseed meal market. Competition has been tough in the past decades in the very dynamic vegetable oil and oilseed meal markets, driven by palm oil and soybean meal. In vegetable oil production, sunflower oil took fourth place with a market share of 9.2% in 2018, after palm oil (36.5%), soybean oil (27.4%), and rapeseed oil (12.5%). Lastly, in the oilseed meal market, sunflower meal took up 5.6% of global production, after soybean meal (66%), and rapeseed meal (10%) (see Figure 1) (Pilorgé, 2020).

Figure 1: The sunflower's position in global markets in the period from 2014-2018 (%)



Source: Pilorgé (2020)

Oils and fats obtained from seeds are of great economic importance as the need for usable bioactive lipids and natural oxidants continues to grow. Sunflower oil has been gaining popularity in the cosmetics and personal care industries, which is expected to further boost demand and contribute to the future growth of the market. Since sunflower oil is rich in essential fatty acids, antioxidants, and beta-carotene, it has been proven to aid in skin moisturization, regeneration, and conditioning. Because of its economic efficiency, it is less expensive than other nourishing oils like argan and almond oil (FMR, 2023).

The global sunflower seed oil market was valued at USD 31.99 billion in 2022. As neutral oil consumption is experiencing steady growth with its high levels of valued unsaturated fatty acids and high smoke point, the compound annual growth rate (CAGR) is expected to be 6.05% during the period from 2017 to 2027. The rise in CAGR is explained by the market's demand and growth, while projections show numbers returning to pre-pandemic and pre-war levels over the coming decade. Based on product type, the market is segmented

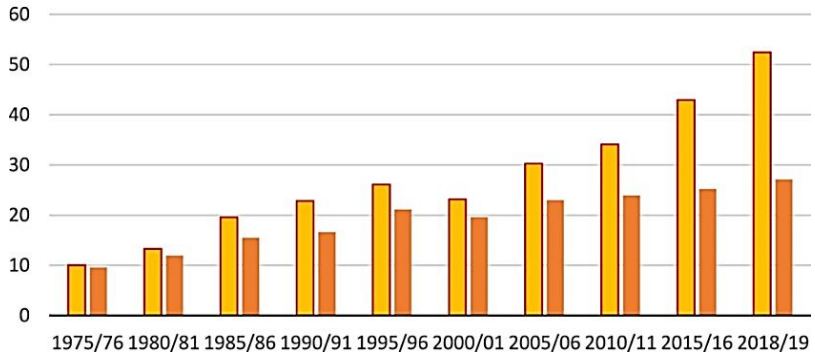
into processed sunflower oil and non-processed sunflower oil, with industrially processed oil accounting for a major market share (Mordor Intelligence, 2022).

2.1 Global production

The economy of production is a huge aspect of sunflower cultivation. Quantity produced, seed oil contents, cost of production, and oilseed purchase prices have a huge effect on entrepreneurial interest in cultivation, along with different subsidies from the state or EU (Čeh et al., 2009).

Production of the sunflower crop grew on a global scale, reflecting a dynamic market and sustained technical progress. From 10 million tonnes for 9.6 hectares in 1975 to 52 million tonnes for 27 hectares in 2018, the production of the sunflower crop grew twice as fast as acreage (see Figure 2) (Pilorgé, 2020).

Figure 2: Evolution of sunflower seed: world production (million tonnes, yellow bars) and acreage (million ha, orange bars)

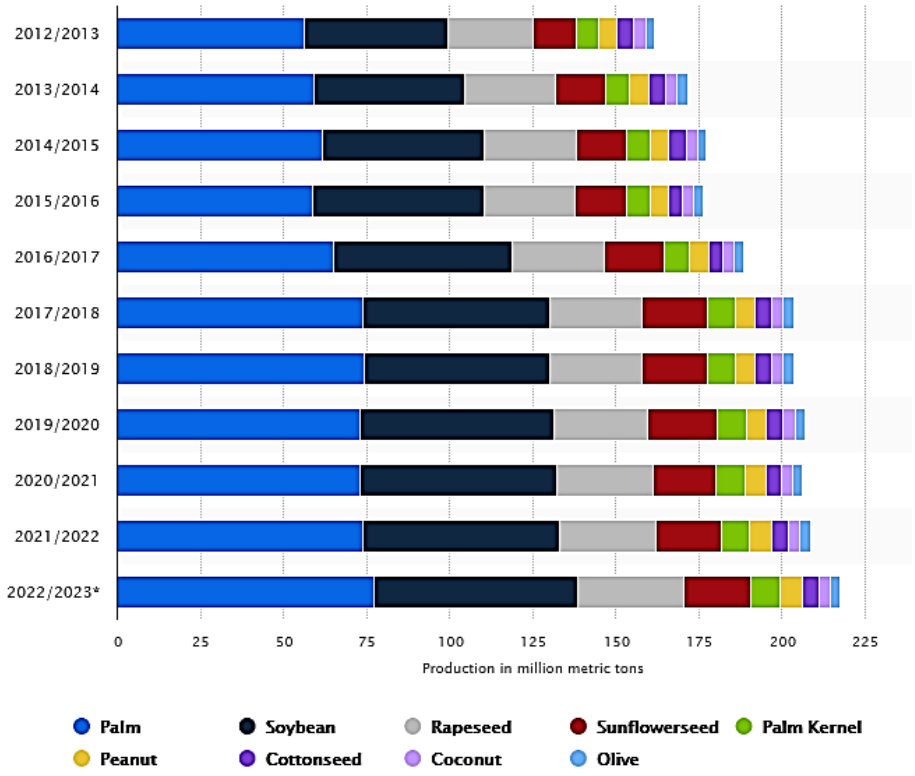


Source: Pilorgé (2020)

From 1975 to 2019, the production of oilseeds doubled every 20 years. After its peak in the 1990s at 13%, the sunflower maintained a constant share between 7 and 10%, stabilising at 9% in 2020. Simultaneously, soybean share grew from 48% to 62% and rapeseed from 6% to 12%. Sunflower kept its position in this competition while most other species, such as cottonseed and groundnuts, diminished in relative importance, alluding to the trend of uniformization in global production. According to Pilorgé (2020), key explanatory factors of yield evolutions are shifts in modern agricultural practices, with a side role for climate and emerging pathogens. The progress in productivity in leading countries is relatively impressive, ranging between 1,4 and 3,5% annual yield increases (Pilorgé, 2020).

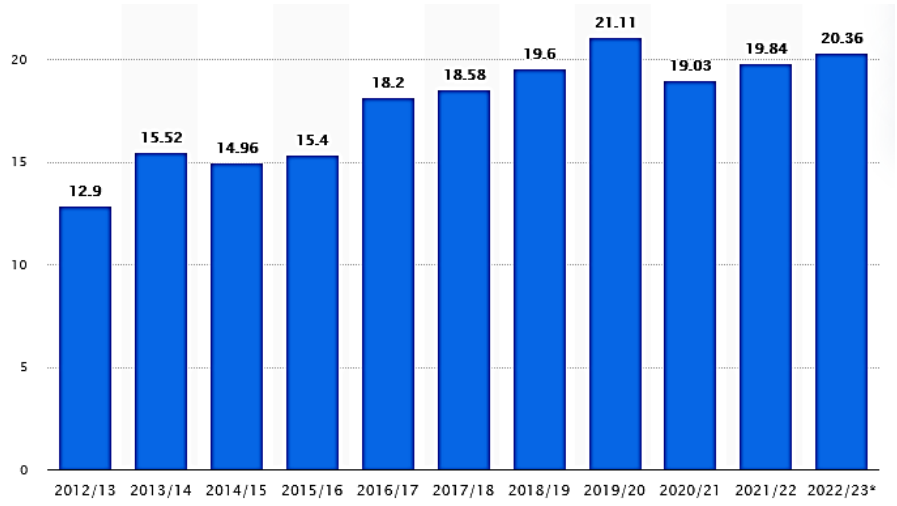
The production volume of vegetable oil in the 2021/22 crop year exceeded 200 million metric tonnes worldwide. Among the major categories of vegetable oil, palm oil had the highest volume of production, at 73.83 million metric tonnes in that time period (see Figure 3) (Statista, 2023a).

Figure 3: The global production structure of essential vegetable oils from 2012 to 2023, by type (in million metric tonnes)



Source: Statista (2023a)

Figure 4: Production volume of sunflower seed oil worldwide from 2012 to 2023 (in million metric tonnes)



Source: Statista (2023b)

Statistics in Figure 4 show the production of sunflower seed oil worldwide from 2012/13 to 2022/23. In 2021/22, the global production volume of sunflower seed oils worldwide amounted to roughly 19.84 million metric tonnes (Statista, 2023b).

2.2 Geographical distribution of major producing countries

Two-thirds of sunflower production is concentrated in Europe, mostly in Russia and Ukraine. As a bloc, the European Union comes in third after Ukraine and Russia. The top ten producing countries accounted for 84% of production and 76% of the acreage in the 2014–2018 period. Other major producing countries include Argentina, China, and Romania. See Table 1 (Pilorgé, 2020).

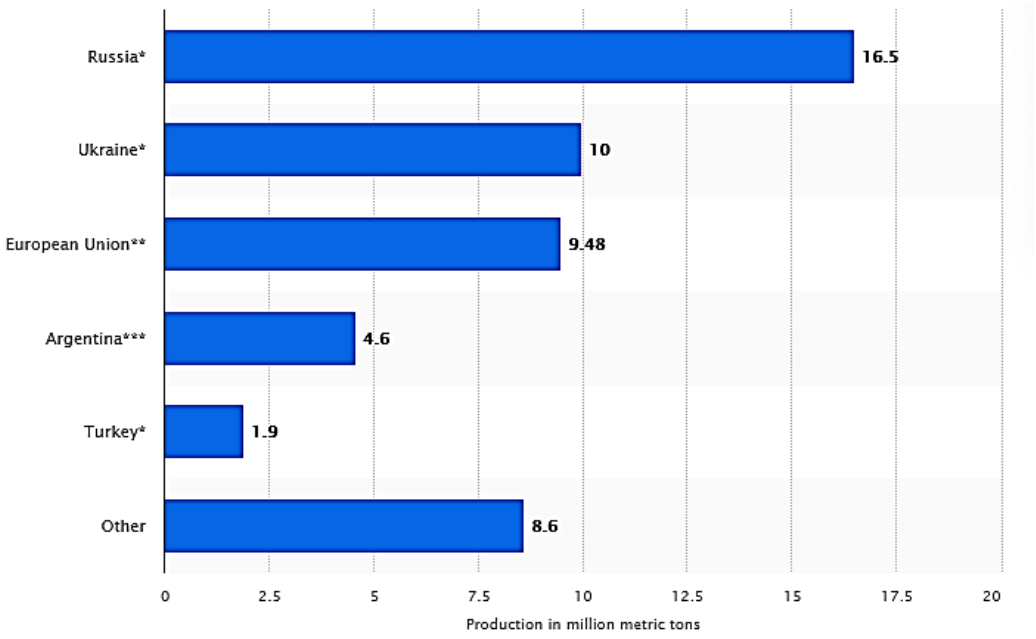
Table 1: Acreage and production of the top 10 sunflower-producing countries

Acreage and production	**Average 2009/2013**		**Average 2014/2018**		**% increase**
	1000 ha	**1000 T**	**1000 ha**	**1000 T**	**Production**
World	24 808	35 922	25 708	45 421	26
Ukraine	4830	8071	5760	12 390	54
Russia	6240	7438	6942	10 300	38
Argentina	1739	3215	1426	2976	−7
China	947	2136	957	2561	20
Romania	886	1326	1025	2094	58
Bulgaria	733	1359	842	1921	41
Hungary	556	1316	625	1707	30
Turkey	559	1032	689	1494	45
France	694	1617	634	1423	−12
USA	771	1267	618	1084	−14
Top 10	*17 955*	*28 777*	*19 518*	*37 950*	32
Top 10%	*72%*	*80%*	*76%*	*84%*	–
(European Union)	4013	7769	4282	8913	15

Source: Pilorgé (2020)

Russia had the highest projected production volume of sunflower seeds of any country in the world in the 2022/2023 crop year. During this time period, Russia produced around 16.5 million metric tons of sunflower seeds. Ukraine is the second-largest producer of sunflower seeds worldwide, with a production volume of 10 million metric tons in 2022/2023. See Figure 5 (Statista, 2023c).

Figure 5: Production volume of sunflower seed in major producer countries in 2022–2023 (in million metric tonnes)



Source: Statista (2023c)

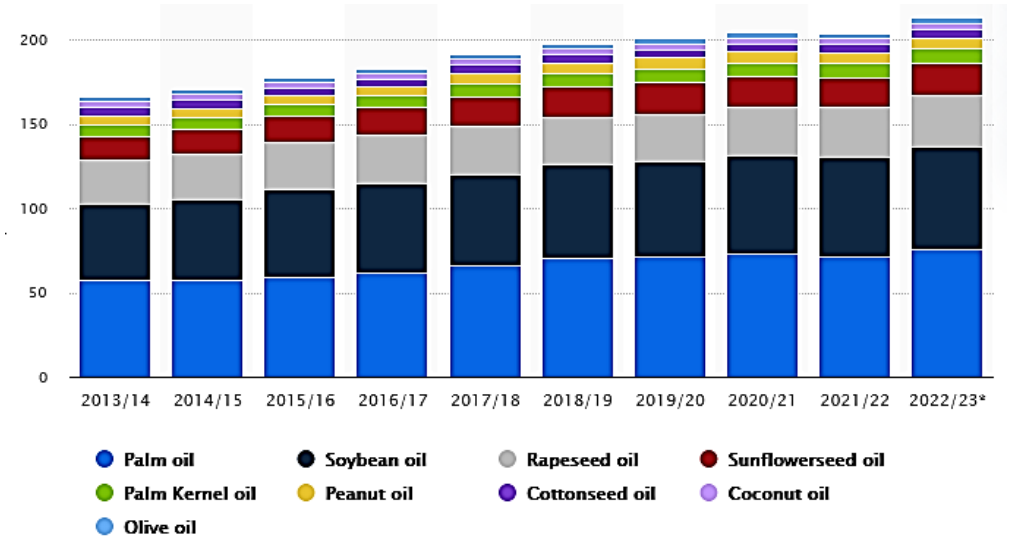
2.3 Global consumption

Not only the production but also the consumption of sunflower oil more than doubled in the last two decades, multiplying by a factor of 2.2. Simultaneously, palm oil production was multiplied by 3, soybean oil by 2, and rapeseed oil by 1.8. The strong dynamism of the vegetable oil sector is supported by both food and non-food uses. Between the period of 2001 and 2019, the total oil consumption rose by 209%, which was much faster than the world population (which rose by 25%) in the same period (Pilorgé, 2020).

Pilorgé (2020) attributes 22% of the total growth in oil consumption to the population growth effect, 42% to the biodiesel production development, and 36% to the trend of dietary changes and other non-food uses.

In 2022/23, sunflower seed oil consumption was forecast to be at over 18.5 million metric tonnes worldwide, while total global vegetable oil production amounted to around 208.81 million metric tonnes in 2021–22. See Figure 6 (Statista, 2023d).

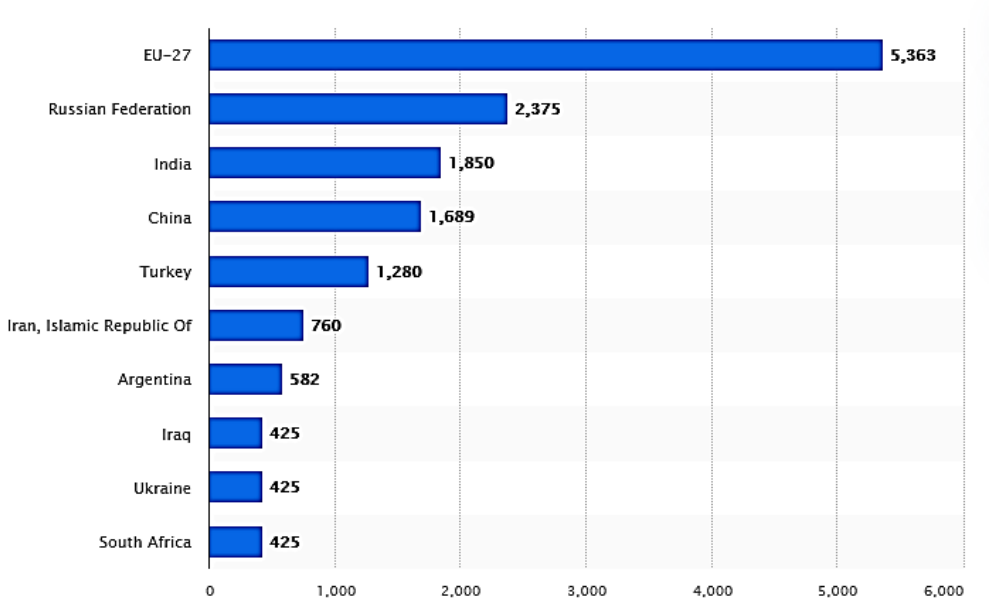
Figure 6: Consumption of vegetable oils worldwide from 2013 to 2023, by oil type (in million metric tonnes)



Source: Statista (2023d)

In 2022, sunflower seed oil consumption was the highest in the EU-27, where domestic consumption exceeded 5 million metric tonnes. India, the third largest country in sunflower seed oil consumption, consumed approximately 1.85 million metric tonnes that year, which was less than half of what the EU-27 consumed in that same year (Statista, 2023e). See Figure 7.

Figure 7: Consumption of sunflower seed oil by country in 2022 (in thousand metric tonnes)



Source: Statista (2023e)

Asian-Pacific countries emerged as the fastest-growing market for sunflower oil in 2022. The region's growth potential stems from the extensive utilisation of sunflower oil in manufacturing snacks, bakery products, and confectionery products. With increased awareness for healthier ingredients and rising demand for innovative bakery products, governments in Asian countries are lowering the use of hydrogenated oils due to their adverse health effects. In 2019, Singapore's Ministry of Health banned all partially hydrogenated oils as an ingredient, making food manufacturers shift to sunflower oil, further boosting its use in the region. Additionally, India and China, as the world's most populous countries, are also the region's major importing countries, leaving a huge impact on the rise of per capita consumption of sunflower oil in the Asian-Pacific region. Other potential markets include South Africa and Turkey, as they are among the world's most prominent producers. To serve local demand, many international firms are looking for collaborations with local producers and investing in major food processing facilities in the region (Fortune Business Insights, 2021).

Due to a growing global population and increased consumption, the Food and Agriculture Organisation (FAO) predicts a rise in per capita consumption of sunflower seed oil, with production reaching 60 million tonnes by 2050. Additionally, with the popular trend of dining out, the establishment of food service is thriving across the world, accounting for a high market share in sunflower oil consumption (FMR, 2023).

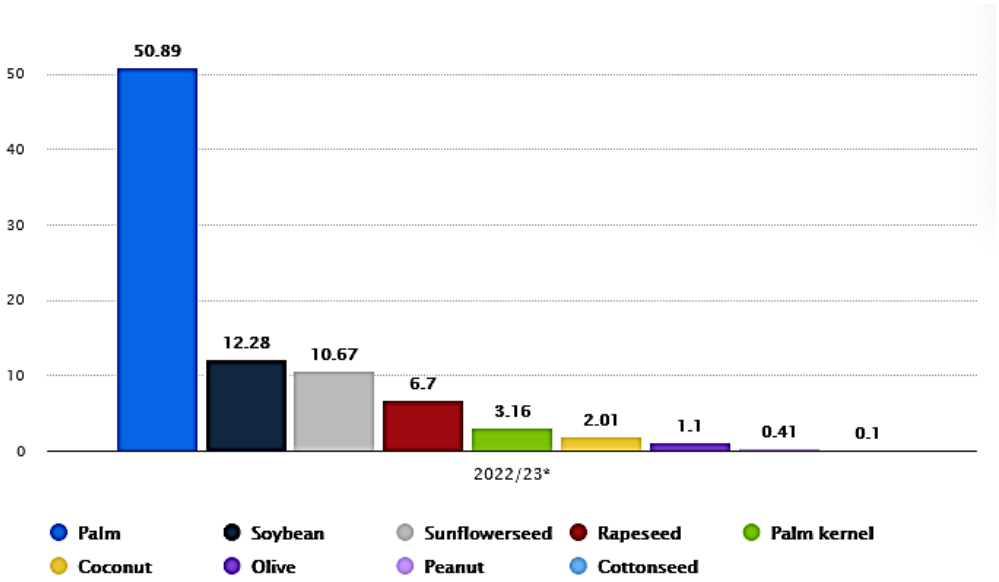
2.4 International trade

2.4.1 Export

The global trade of vegetable oils consists of palm oil (58%), soybean oil (14%), sunflower oil (13%), and rapeseed oil (7%), accounting for 92% of vegetable oils traded, on average, in the period from 2019 to 2021. The remaining 8% includes assorted locally important oils, such as olive oil, cottonseed oil, peanut oil, safflower oil, and palm kernel oil (Statista, 2021).

Palm oil will remain the most exported vegetable oil in 2022–2023, followed by soybean and sunflower oil, then rapeseed, and palm kernel oil. See Figure 8 (Statista, 2023f).

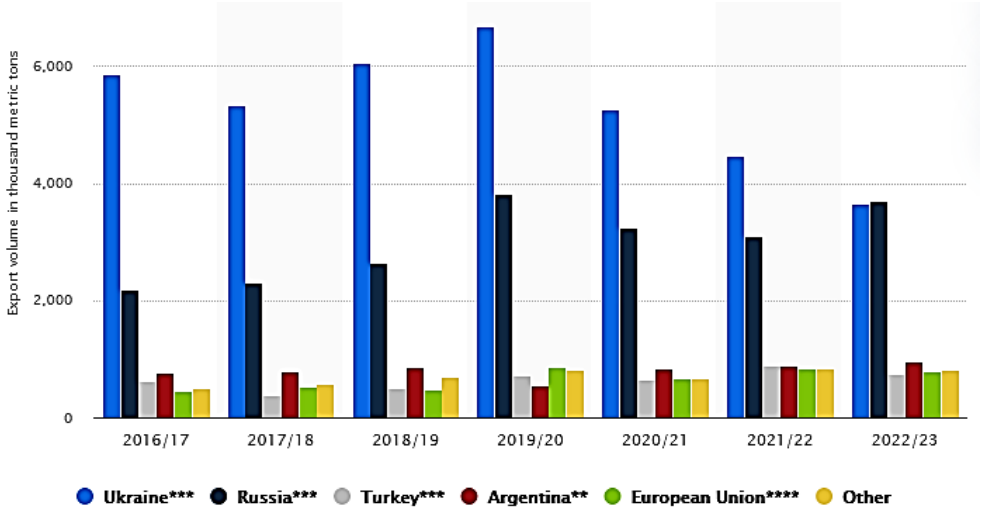
Figure 8: Export volume of major vegetable oils worldwide in 2023, by type (in million metric tonnes)



Source: Statista (2023f)

Statistics in Figure 9 show the export volume of sunflower seed oil worldwide from 2016/17 to 2021/22, by country, with a forecast for 2022/23. In 2021/22, Ukraine was the leading sunflower seed oil exporting country with an export volume of about 4.5 million metric tonnes, followed by Russia, Turkey, Argentina, and the European Union (Statista, 2023g).

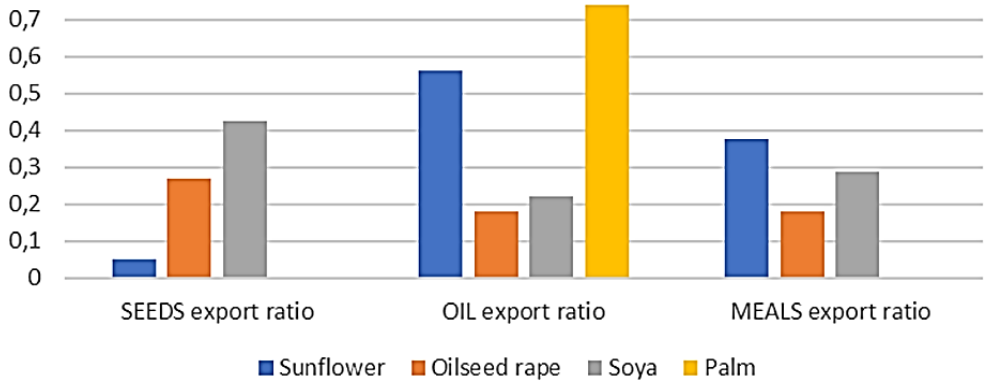
Figure 9: Export volume of sunflower seed oil worldwide from 2016 to 2023, by country (in thousand metric tonnes)



Source: Statista (2023g)

Oilseeds, oils, and meals are highly traded commodities. Their exports accounted for 27% of the world's production in 2011, much higher than most grains. The export-to-production ratio shows that sunflower is traded mainly after processing. Exporting consists of 55% of the oil, 38% of the protein meals, and only 5% of the harvested seeds. The country of production is also mainly where the sunflower is processed, keeping the added value of the process. Other oilseeds, such as rapeseed and soybean, show a more balanced profile between seeds, oils, and meals. For soybeans, 42% of the produced seeds are exported, with oil and meals also intensively traded at 20% and 28%, respectively. One of the extremes is palm oil, which is heavily exported at 70%, mostly due to its concentrated production in a few countries and the necessity of processing near the production sites (Pilorgé, 2020). See Figure 10.

Figure 10: Export-to-production ratio for oilseeds and products in 2018/2019



Source: *Pilorgé (2020)*

Sunflower seeds are usually processed in the country of production. This can be explained by market characteristics and national investment strategies, but also by the fact that sunflower seeds have a low density due to their hull, occupying 15-20% larger volumes compared to other seeds, resulting in higher physical quantities and higher logistics costs (Pilorgé, 2020).

2.4.2 Import

Sunflower oil accounts for 14% of all traded vegetable oils; of that, Ukraine and Russia account for 50% and 25%, respectively. 75% of oil imports are bought by eight countries, with India remaining the number one importer and the world’s second-largest consumer. Succeeding are the EU, China, Iran, CIS, Turkey, Egypt, and Iraq, while the EU, CIS, and Turkey are also exporting countries (Pilorgé, 2020). See Table 2.

Table 2: Annual sunflower oil imports from October to September (in million metric tonnes)

	Avg. 5 years 2014–2018 (mmt)	**%**
India	1.85	18.4
EU*	1.41	14.0
China	0.69	6.9
Iran	0.36	3.6
CIS*	0.56	5.6
Turkey*	0.73	7.2
Egypt	0.51	5.0
Iraq	0.47	4.6
Others	2.31	22.9
World	10.07	
*: are also exporting countries		

Source: Pilorgé (2020)

India is facing demographic growth with limited agricultural production capacities. Vegetable oils account for 50% of the total agricultural imports from India. Sunflower oil is regularly imported with continuous optimisation of prices and origins, remaining cherished for its nutritional quality and frying ability. Interestingly, India expanded its domestic oilseed production of rapeseed, mustard, and soybean while protecting its internal production through import tariffs. With the decrease in edible oil imports by India, disturbances have been caused on the edible oil markets, with a slowdown in global trade observed in 2018 (Pilorgé, 2020).

2.5 Market organization, dominant companies and competition

Industry reports define the sunflower seed industry as fragmented—a highly competitive market without dominant players—or moderately consolidated, with the presence of prominent worldwide players. Either way, there is no clear leader, and none of the players has influence on prices, production, investment, or competition. Major players in the market include companies such as Kiassa Oil (Ukraine), Abu Dhabi Vegetable Oil Company (UAE), Cargill Incorporated (USA), Archer Daniels Midland Company (USA), Bunge Limited (USA), and Avril Group (France) (Mordor Intelligence, 2022).

These companies have a strong, broad geographical presence, offering extensive product portfolios to satisfy consumer demand. The most adopted strategies include product innovations and business expansion acquisitions, such as partnerships, which help meet demand and withstand competition. For instance, in April 2022, Avril Group expanded its sunflower seed crush capacity with the intention of becoming more independent in its output of sunflower oil and oilseed meal. In January 2022, Cargill Inc. opened its first innovation centre in India with the goal of developing solutions for the food and beverage market. The

key to gaining market share remains high-quality ingredients without added preservatives, offering completely natural products (Mordor Intelligence, 2022).

Competition in the vegetable oil market is restraining market growth for sunflower seed oil. Substitute oils share similar nutritional attributes, such as olive oil, rapeseed oil, and coconut oil. Because sunflower oil contains high wax content, the industrial procedure includes additional filtration and dewaxing, also known as oil refining. This increases the final price of sunflower oil, making it comparatively more expensive than other conventional oils such as soybean or palm oil. Food manufacturers are investing in technologies to retain the essential nutrients of oil during the manufacturing process, increasing consumer interest in rapeseed oil and olive oil as replacements for sunflower oil (Fortune Business Insights, 2021).

As sunflower oil possesses similar characteristics to olive oil at a comparatively lower cost, snack manufacturers are often opting for it. In comparison to palm oil, which has a higher freezing point, sunflower oil does not require additional heating in cold temperatures, lowering the expense of additional heating systems (Mordor Intelligence, 2022).

Due to the global sunflower oil shortage in 2022, it was common for food manufacturers to search for and use alternative oils in food products, such as mayonnaise and pre-fried frozen vegetables. The number one alternative to sunflower oil was rapeseed oil, followed by linseed and groundnut oil. Palm oil, a considerable option, is often rejected as a substitute due to sustainability issues, as the rapid expansion of plantations in Indonesia and Malaysia is causing massive deforestation and destroying habitats for rare plants and animals. In the long term, food producers wish to make their recipes more flexible to be able to react quickly to supply shifts (CBI, 2022).

2.6 Specifics for supply and demand

Global trends are shaping demand for sunflower seed oil. On one hand, the growing demand and interest in dining out and the rise of large restaurant chains have further increased the development of the market, as 80,5% of edible cooking oils in Asian countries have been consumed through restaurant food services (Fortune Business Insights, 2021).

On the other hand, developed countries are facing an increased trend of changing consumer preferences for organic and natural ingredients. Due to sedentary lifestyles, stress, and high levels of cardiovascular diseases and obesity, healthier food products are in high demand. Government initiatives to promote sunflower crop cultivation are pushing sales of sunflower seed oil, along with innovative food retail outlets and rising per capita disposable income (FMR, 2023).

Furthermore, demand is driven by fluctuating prices of competitive vegetable oils, such as palm and soybean oils. As prices fluctuate and overall sales are affected, businesses tend to

gravitate towards stable-priced solutions, such as applying sunflower oil for a variety of purposes (FMR, 2023).

The global impact of the pandemic has been unprecedented, causing a negative impact on demand across all regions. In 2020, the global market exhibited a lower growth rate of 5,02% as compared to the average year-on-year growth during 2017–2019. As governments worldwide imposed lockdowns and trade barriers, the growth of the sunflower seed and oil industries was wedged negatively, further threatened by closed restaurants and the stay-at-home consumer tendency. The COVID-19 outbreak has led to an increase in edible oil prices, harming the major oil-exporting countries with a 5% decline in edible oil imports caused by supply-chain disruptions, along with reduced consumption by lower-income consumer groups. As the pandemic weakened, the disturbances in logistics eased with the lifting of trade bans, and the pace and demand recovered. Just as the industry started to recoup, the supply chains were hit hard by the Russian invasion in Ukraine, causing major global supply shortages (Fortune Business Insights, 2021).

Global supplies of vegetable oil had been tight before the war in Ukraine due to a number of global factors. Drought in South America in 2021 harmed the production of soybeans in Brazil, causing a 5% decline. In Malaysia, a typhoon in 2021 severely affected palm production, along with labour shortages and COVID-19 restrictions on worker mobility. Canadian rapeseed production has been impacted by drought in 2021–2022, resulting in a decline in production of 35% from the previous year despite an 8% increase in planted areas. Canada's rapeseed exports are projected to fall by 50%, with rapeseed oil exports dropping by 20% annually (Glauber, Laborde, & Mamun, 2022).

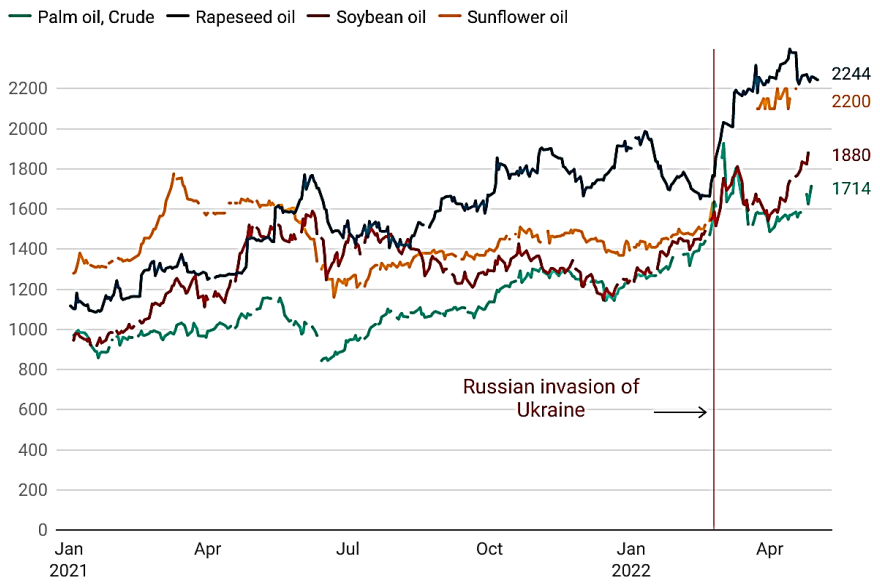
After the war began in 2022, disruptions to sunflower oil exports were immediate. Not only is much of Ukraine's sunflower farming area under war, but the closure of the country's ports has stopped half of the to-be-exported sunflower oil from leaving, leaving only one costly alternative through western routes, through Poland or Romania. Ukraine's most important export markets, such as India, the EU, and China, accounted for over 75% of the country's total exports. Russian exports are currently limited due to an export quota set by the Kremlin, along with the joint effect of maritime trade disruption in the Black Sea and the effect of sanctions on business transactions (Glauber et al., 2022).

2.7 Price trends and major factors affecting the price

Even though vegetable oils vary in flavour and purpose, they are largely substitutable for many uses. That is why vegetable oil prices tend to move together (see Figure 10). Nevertheless, substitutions are not all that easy because different oils have different processing characteristics and taste profiles. Allergy issues and national labelling requirements complicate substitutions as food producers face increased production costs, bottlenecks, and shortages. As global trade is affected by the ongoing war, higher prices are

hurting consumers, especially those in poorer households already threatened by food insecurity (Glauber et al., 2022). See Figure 11.

Figure 11: Daily vegetable oil prices in USD



Source: Laborde (2022)

Sunflower oil is considered a premium oil, with higher pricing in comparison to soybean oil and rapeseed oil. In 2016, the trend inverted, with sunflower oil prices dropping below those of soybean oil and rapeseed oil, reaching a thirteen-year low in 2019. After the global pandemic disrupted the global supply chains in 2020, the prices in the oilseed sector were near record highs in 2021–2022. Due to strong demand and a slight production decline because of the on-going war in Ukraine, the oilseeds industry has experienced income losses. The Russian invasion of Ukraine is what drives not only the price of sunflower oil but also poses large uncertainties for supply. Nevertheless, the industry is expecting a downward price adjustment during the next few years (OECD, 2022).

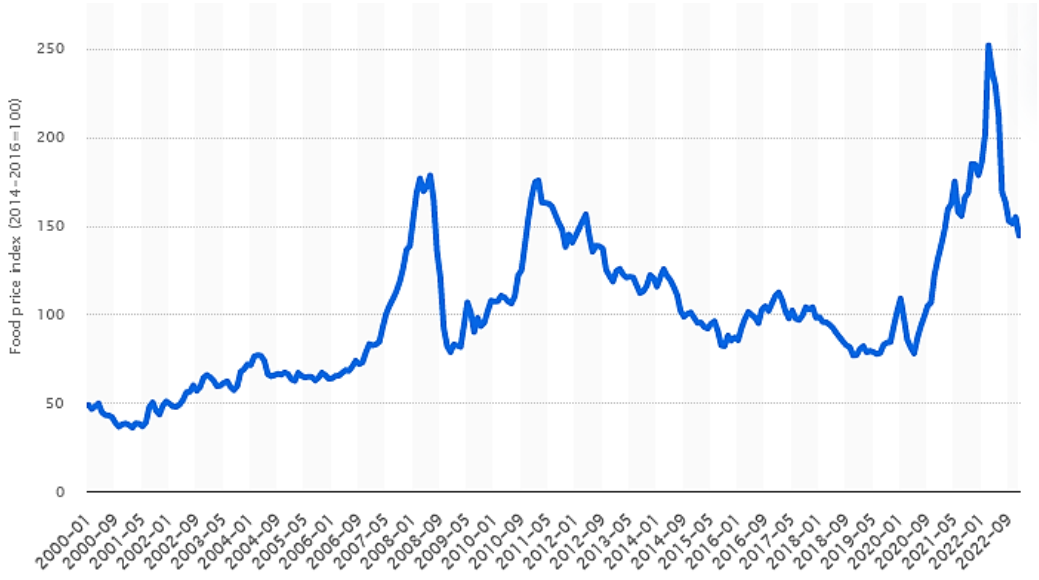
Production input prices for vegetable oils, such as energy, electricity, diesel, pesticides, and fertiliser, have risen significantly, pushing up production costs. The world's largest producers use large volumes of fertiliser, with Russia being one of the world's main exporters of fertiliser and energy commodities. The temporary ban and quota imposed on Russia's fertiliser exports have incentivized farmers to find alternatives for artificial fertiliser, especially in developing countries with limited financial means. For instance, the Kenyan government has received a loan from the African Development Bank to give farmers subsidised access to fertiliser and support food security efforts amid rising input costs and the prevailing drought. Other alternatives to replacing synthetic fertiliser include planting alternative crops that require less fertiliser and the use of organic fertiliser, such as manure (CBI, 2022).

The global and regional implications of high food and fertiliser prices stem from the COVID-19 pandemic, further fuelled by the war in Ukraine. The prices of agricultural products are historically high, causing concerns about global food security. The war has had a big impact on vegetable oils, pushing oil prices up as well as triggering global trade policy responses, further restricting supplies and raising prices. Prior to the invasion in February 2022, prices for vegetable oils were at very high levels. Since then, prices have further risen by an average of 30%, with sunflower oil prices rising by more than 40% (Glauber et al., 2022).

The price volatility of vegetable oils has increased, mostly due to trade restrictions imposed by major vegetable oil exporters, posing a risk to food security. Calculations show that roughly 43% of globally traded vegetable oils are affected by some form of export restriction. Many factors contributed to record-high vegetable oil prices. In early 2022, Indonesia implemented a progressive import levy on palm oil and an export ban on crude and refined palm oil, further harming the import needs of other countries, namely India and Bangladesh, which rely heavily on palm oil to meet their consumption needs. What is more, Argentina is permitting exports of soybean oil on terms of raised export taxes (roughly 33%) (Glauber et al., 2022).

Already disrupted by COVID-19 and unfavourable natural conditions, the supply chains are further facing shortages in 2023 due to the ongoing Russian invasion of Ukraine. Sunflower oil, as an ingredient and a primary cooking oil in many parts of the world, is abruptly short in supply, raising the price of substitute ingredients. Even though the producers are lowering costs as much as possible, it is inevitable that part of the cost will be passed on to end consumers (Hauser, 2022).

Figure 12: Monthly vegetable oil price index worldwide from January 2000 to December 2022



Source: Statista (2023h)

The FAO vegetable oil price index reached 178.32 in June 2008, during the financial crisis. During the pandemic, the price index rose to 184.56 points in October 2021. After the start of the war in Ukraine, the index jumped to over 251 points in March 2022. At the end of 2022, the index had declined from the spike in March to 144.38 points (see Figure 12) (Statista, 2023h).

2.8 Global trends

Ukraine and Russia together accounted for 75% of sunflower seed oil, with Ukraine being an exporter of nearly half of the world's total supply of sunflower cooking oil. The Russian-Ukrainian conflict has resulted in not only demolished cities, homes, hospitals, and schools but also the nation's agriculture, with loss of harvest, demolished fields, and destroyed crops. Planting, output, and trading have declined, with commodity prices rising sharply. Many nations are left with limited stocks of edible oil and soaring prices; for instance, East Africa is facing a worsening food crisis, and adding to that are the export restrictions on palm oil imposed by Indonesia (Glauber et al., 2022).

Hauser (2022) refers to Ukraine as "Europe's breadbasket". Some supermarkets across Europe, namely the UK, Spain, Greece, Turkey, and Belgium, have started to put a cap on the number of bottles bought, asking consumers to show restraint and flexibility. Tesco, the UK's largest supermarket, has implemented a per-person limit of three bottles on all cooking oils, whereas Morrisons and Waitrose, two other supermarket chains, have implemented a two-bottle limit. As the UK imported 83% of its sunflower oil from Ukraine, the shortage caused the UK's Food Standards Agency (FSA) to give food manufacturers permission to substitute sunflower oil with coconut oil, soybean oil, fully refined palm oil, or rapeseed oil without having to print new labels or update their ingredient list in regard to these substitutions. In the case of consumers concerns about substitutions and the content of products, the FSA stated that consumers should directly contact the manufacturer or the brand. Rapeseed oil had been redirected to food use from its primary biodiesel market use. Unilever, a British multinational consumer goods company, confirmed the switch to rapeseed oil in some recipes, confirming that they are effectively flexing formulations to take advantage of differential cost increases (Hauser, 2022).

Due to the imposed sanctions on Russia, a quarter of the sunflower oil on the global market has "vanished". What is more, uncertainties remain around how much seed was planted in Ukraine and how much of the potential harvest can make it to markets. In the United States, the disruption of sunflower oil availability causes further strain on America's food system. The challenge of making up for the decreased availability of other cooking oils is up to soybean producers, as most of the usage consists of sunflower oil from Ukraine and palm oil from Indonesia (Castrodale, 2022). Norway's supermarkets had met demand by digging into their stored supplies of sunflower oil, but they fear the upcoming shortage. The country has previously banned selling palm oil due to environmental reasons; however, Norwegian

supermarket chain Rema 100 is considering selling it again. With Indonesia implying a ban on its palm oil exports, along with weather-related global shortages and a war-tight market, that might not be a proper solution. Thinking about adaptation and replacement remains of huge importance (Hauser, 2022).

Egypt and China, as potential buyers, have expressed interest in sunflower oil from the Black Sea. Even with higher logistics costs to transport products, the price China offered is still very competitive, providing a bullish driver for the market. Ukraine will most likely be forced to export seeds rather than oil, with limited carry and seed volumes (Holland, 2023).

Another important factor affecting global vegetable oil supplies and prices is the recent growth of biodiesel capacity. The increasing scarcity of fossil fuels has led to the exploration of alternative biofuels made from vegetable oils as renewable fuels. As the sunflower is easily grown and profitable at both small farms and large-scale production, with its seeds containing high contents of oil and high average yields of oil per acre, sunflower oil has gained popularity as an alternative feedstock crop for biodiesel production. Not only is the waste of cooking oil reduced, but the oil is recycled into a sustainable, eco-friendly fuel with lower pollutant emissions. Total vegetable oil use in the production of biodiesel fuels has increased from 1% in 2003 to almost 15% in 2022. The growth is attributed mostly to regulations mandating blending fuel supplies and subsidies encouraging their use. The vegetable oil, currently converted into biodiesel, globally represents an amount equivalent to feeding more than 320 million people per year. Even though suspending biodiesel mandates for vegetable oils would mean significantly higher supplies of edible vegetable oils and ease the global food crisis, that is unlikely to happen due to the strong political support of the biodiesel production policies (Glauber et al., 2022).

The trend towards healthier cooking oils is driving market growth for sunflower oil, owing to its variety of health benefits. The positive health effects of polyunsaturated fatty acids have been recognised by many studies in recent years, leading to increased demand. A big part of the trend is the rise in popularity of non-GMO products and low-saturated-fat foods that meet certain dietary restrictions, such as vegan, kosher, halal, etc. Sunflower seeds are grown with traditional breeding techniques, making it one of the few oils used in food manufacturing that is non-GMO, with many possible applications in the food industry. What is more, the application options are expanding with new versions of sunflower oil, such as high-oleic sunflower oil, which possess a higher oxidation stability than conventional oil. The focus of new producers is to utilise natural ingredients to improve the nutrient profile of their final product, creating new opportunities for upcoming sunflower oil producers. Aside from culinary purposes, this type of sunflower oil also finds use as an ingredient for infant formulas requiring stability (Mordor Intelligence, 2022).

Growing demand in the food and catering industries is pushing oleic oil into the market as a popular alternative to trans-fat oil, but it still remains underrepresented in comparison to common sunflower. In 2019, it accounted for 7% of global sunflower production. The EU

market structure in 2019 was 20% oleic and 80% classical sunflower, with France accounting for more than 60% of oleic sunflower production since 2010, reaching 76% in 2019. While it is considered a commodity in France, it is still a niche market in other countries, reflecting a high potential for development. Projections show that Western European countries, mainly Ukraine and Russia, would quickly overpass acreage with a boost in production, shaking up the regularity and premiums for oleic sunflower. The oleic market, however, faces challenges because of the ongoing discussions in Europe about genetically modified organisms, or GMOs, or types created through mutagenesis, frequently for herbicide tolerance characteristics. What is more, uncertainties remain for the evolution of the oleic market for food industries and catering outside Europe and North America, where food safety and nutritional value correspond to a real and growing demand from consumers. Even though oleic sunflower oil is the best alternative to palm oil, it is more expensive, and food industries tend to optimise their formulas based on consumer demand and regulations. The use of cheaper oil blends remains common, reducing the competitive advantage of higher-oleic-content oils (Pilorgé, 2020).

As a result of selection, a new sort of sunflower was created, whose oil can contain higher contents of oleic or linoleic acids. What is more, a new sort with a higher content of stearic acid was developed, resulting in a lower need for hydrogenated oils (Pilorgé, 2020).

2.9 Sensitivity to natural conditions

The cultivation of sunflower is limited by two important undesirable factors: bad weather conditions in the maturing phase and, consequently, the appearance of diseases, mostly of fungal origin. In the event of higher quantities of sunflower cultivation, the first condition is to maintain a crop rotation of at least four years. As a result of crop rotation, the share of cultivation for multi-purpose uses is increasing. Furthermore, plant cultivation needs the implementation of new cultures that will thrive more easily and successfully withstand occurring climate changes. One of the plants that can become a suitable alternative to other oilseeds in crop rotation is definitely the sunflower. Crop rotation also diminishes plant infectivity potential. The occurrence of fungal diseases, which affect the economic importance of sunflower cultivation, can be avoided by choosing varieties with resistance to disease (Leskovšek, Ferlež Rus, Žveplan, & Radišek, 2009).

Human errors in cultivation, delayed arrangements for harvesting, and buying conditions can lead to farmers leaving their crop on the field until late fall. With this, the infection possibility is significantly higher. Increased weed populations are currently not playing an important role in the epidemiology of sunflower diseases, but it is recommended to limit the spread of weeds in the early stages (Leskovšek et al., 2009).

Depending on the sort and growing conditions, the sowing of seeds should begin in the early fall. With timely sowing, seed shedding and stem breakage are prevented. Again, the choice

of sort is important. The sowing and drying of crops are relatively demanding, especially on smaller cultivating fields with limited available machinery (Leskovšek et al., 2009).

3 ANALYSIS OF THE LOCAL MARKET

Production of oilseeds in the Slovenian market is dominated by rapeseed and field pumpkin, followed by sunflower and soy, while production of other oilseeds is minuscule. In the period from 1991 to 2007, sunflower-planted fields accounted for anywhere from 9 to 256 hectares, with the average seed crop accounting for 0,9 t/ha to 2,2 t/ha. Assuming that all seed is pressed into oil, with an average content of seed oil of 40% and an average crop of 1,6 t/ha, in the period of 18 years, Slovenia has produced from 5.800 to 164.000 litres of sunflower seed oil (Čeh, 2009).

2021 was the year for a significant increase in producer prices of agricultural products at the aggregate level. In Slovenia, prices of crop products have increased by 15.1% compared to 2020, hitting a record high. The highest increase was recorded for cereals and oilseeds, increasing by 45% and 38%, respectively. The prices for agricultural inputs also increased in 2021, by 9.8% on an aggregate level. Of that, mineral fertilisers account for 43% and energy for 17%. As the increase in agricultural product prices was slightly lower than that of agricultural inputs, the terms of trade were slightly less favourable than the previous year (Agricultural Institute of Slovenia, 2022).

First assessments conducted for the year 2022 by the Slovenian Agricultural Institute show that oilseed harvests have dropped by roughly 1%. Even though most of the arable crops in 2021 saw lower harvests than the previous year, sunflower, sugar beet, and oats remained exceptions with increased total yields due to larger arable areas, but still remained below the yearly average (Agricultural Institute of Slovenia, 2022).

Table 3: Cultivation areas of oilseeds in Slovenia (ha, t, t/ha)

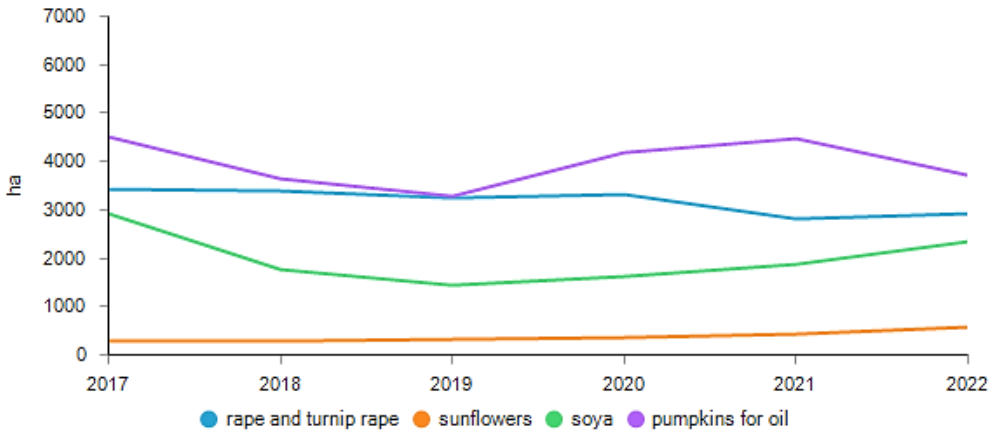
	Hectares						Index
	Ø 2009–13	Ø 2014-18	2019	2020	2021	2022	2022/2021
Rapeseed	5.154	3.436	3.245	3.306	2.806	2.937	104,7
Sunflower	289	262	334	354	420	561	133,6
Soy	140	1848	1.433	1.637	1.893	2.348	124
Field pumpkin	4.826	4488	3.284	4.169	4.491	3.714	82,7
Other oilseeds	74	377	413	267	264	175	66,3

Source: SURS (2022)

In 2022, changes were observed in the structure of specific oilseed acreage. Slovenia has increased the production of rapeseed, soy, and sunflower while lowering the acreage of field pumpkins and other oilseeds. The sunflower acreage in 2022 was equivalent to 561 hectares of fields, which is 33% more compared to 2021. See Table 3 (SURS, 2022).

Data on sunflower-cultivated areas show that the sunflower is not prevalent amongst oilseed cultivation in Slovenia. Undoubtedly, with a more serious approach to cultivating, by using new, fungus-resistant hybrids, better preparation of the seedbed, and better sowing performance, the final harvest could be increased. The technology behind cultivating sunflowers in Slovenia is relatively underdeveloped, as confirmed by the ever-varying amounts of crop cultivated and the overall low numbers. A step forward is needed since the sunflower could become a suitable alternative to other oilseeds in crop rotation due to climate change (Leskovšek et al., 2009). See Figure 13.

Figure 13: Major oil crop production in Slovenia (ha)



Source: SURS (2022)

In 2021, the natural conditions have negatively impacted the quantity of agricultural production by 12%, lowering crop volume by 20% compared to 2020. Two spring frosts have harmed plantations, along with drought and other weather conditions. Observed trends in Slovenian agriculture show that the trend of negative influences on the environment in Slovenia has overall decreased in recent years, mostly due to the more rational use of pesticides and artificial fertilisers. Furthermore, the country has evidently increased acreage intended for ecological farming along with the rise in cultivation of minor agricultural plant species in recent years (Agricultural Institute of Slovenia, 2022).

In the process of sunflower cultivation, the choice of sort is of huge importance, as the main characteristics depend on it. The number of available varieties and hybrid varieties of sunflower in Slovenia is low. Slovenian growers have permission to use sorts, which are registered in the European Union's common catalogue of agricultural plant and vegetable

species and contain more than 90 sorts of sunflowers. Slovenian farmers most often use the seed, which is otherwise intended as bird food. To acquire larger volumes of sunflower crops, different sorts would need to be tested and evaluated based on growing conditions. With this, growers would gain valuable information on different breeds and sorts that would thrive efficiently in Slovenia (Leskovšek et al., 2009).

There are no local varieties of sunflower in Slovenia, meaning that producers can choose among foreign modern cultivars listed in the Common Catalogue of Crop Cultivars registered in at least one country of the European Union (Kocjan Ačko, 2008).

As for an aid system, specifically for sunflowers, there is currently no intervention, i.e., buying, exporting subsidies, or other market support programs. Farmers in the EU do not receive any specific payments for growing sunflowers (European Comission, 2023).

4 INTRODUCTION TO A NEW COMPANY AND THEIR FLAGSHIP PRODUCT

The potential company currently operates as a small family-owned farm, positioned in the northern part of Slovenia in the Carinthia region. The roots of the farm go back to the year 1825, when the original farm owners possessed most of the land in the village. Due to family branching and the village populating with time, the farm was passed down to today's fifth generation, and the owners are currently operating with 22 hectares of cultivation surfaces and 13 hectares of woods. The farm has recently transitioned from its long-term main activity of milk production and animal feed production of corn and grass for silage into cultivating primarily sunflowers and field pumpkins for the production of edible oils while retaining a select few livestock for non-arable sloped fields for grazing.

Production of non-refined sunflower oil on the farm began in 2014 by planting sunflowers on a small arable field in the orchard as a part of increasing the farm owners' self-sustainability. Due to the high yield of sunflowers, an excess amount was produced, and sunflower oil was offered to nearby households, which later expressed interest in buying the product regularly, thus marking the beginning of the gradual transition of the farm into the production and sale of non-refined edible sunflower oil.

Through simultaneous research from non-written sources, primarily testimonies of elderly locals, firm proofs were acquired that production of such sunflower oil in the area dates back at least 80 years, making it a local product with a long-standing tradition within the Carinthian region.

The new generation envisions formally entering the Slovenian vegetable oil market by establishing a new company. The flagship product of the company is their non-refined sunflower oil, obtained by the traditional pressing technique, which gives the final product diverse qualities and ranks it among the healthiest vegetable oils. Even though the oil

production on the farm began as an exploratory phase with test-trials of growing sunflowers and pressing oil, initial positive feedback from local consumers and a well-established, growing customer base showed instant success and a big business opportunity for the small farm.

Marketed and branded as a family-owned, farm-based company with respect to sustainability and traditional values, the company would offer its flagship product to Slovenian consumers in the form of an online shop. Whereas most of the current sales occur by word of mouth, mostly in the Carinthia region, the company presumes that a good marketing strategy with a strong online presence would result in high sales in most Slovenian regions.

The company wishes to enter the Slovenian market but undoubtedly sees a potential future expansion to the Austrian and German markets, mostly due to geographical proximity as well as cultural and culinary similarities. The rough cost calculations showed that logistics costs for shipping to Austria would not be significantly higher than shipping to Slovenia, further confirming the potential selling base in the Austrian market.

To expand the product portfolio, a testing trial of pumpkin sowing and pressing non-refined pumpkin oil led to increased customer demand for pumpkin oil, which now accounts for a large part of the farm's sales. As the production of sunflower and pumpkin oil on the farm is already efficient and the company operates with superior seed cleaning machinery at its disposal, the opportunity for new products remains. With this in mind, the company has recently acquired machinery for cold-pressing, with the goal of offering cold-pressed varieties of oils to customers. In the near future, the company intends to further expand the selection of non-refined oils and other edible by-products with locally grown seeds and nuts.

The company is potentially looking into options for registering such production methods and the final product under the EU geographical indications and quality schemes in the Agriculture and Rural Development Programme.

The process of acquiring the final product, edible non-refined sunflower oil, begins in April with the planting of the sunflower seeds with specialty machines in rows 75 cm apart and with a seed-to-seed distance of 26–28 cm. The distance between rows allows for a non-chemical approach to eliminating weeds, the so-called mechanical weed control, which is achieved by a tractor pulling multiple hoes between rows and disrupting the roots of the weeds. This is then repeated 3-5 times, depending on the weather conditions and the type of soil. Sunflowers are then harvested sometime in early autumn, depending on the moisture content of the sunflower heads. After harvesting, the seeds are immediately taken to a low-heat dryer to reach a moisture content of about 5–6%.

The final steps include the preparation for storage; seeds are cleaned through a series of machines that eliminate impurities with sieves and aerodynamics, allowing for the selection of the most desirable seeds for oil production with virtually non-existent impurities. The

seeds are then packed in paper bags of 25 kg and stored in controlled climate spaces with constant ventilation. The storage of the seeds allows for a sufficient year-long supply, and the oil is freshly pressed in batches throughout the year until new seeds are harvested in autumn.

In the final stages, non-refined sunflower oil is produced by dehulling the seeds and grounding the dehulled seeds into a mush, which is then roasted and pressed with cylinders. Freshly pressed oil is then poured into food-safe metal barrels, where it's left for 10 days for a self-cleaning cycle. The oil is then bottled, labelled, and offered on the market. As the oil quality is sensitive to exposure to longer periods of non-usage, the oil is pressed on a monthly basis, always ensuring to offer the freshest oil possible, diminishing the possibility of rancidity and allowing for a longer shelf-life when used by consumers.

While seeds are pressed into oil, the remaining oil cakes are primarily used as feed for livestock, while the company is exploring the possibility of grounding oil cakes into edible flour for human consumption.

5 ANALYSIS OF THE POTENTIAL ENTRANCE TO THE MARKET

5.1 Analysis of available substitutes and competitors, price comparison

When comparing oils by price and quality, it is important to establish that not all oils are comparable. Vegetable oils are unique in regards to the plant used for extraction. Each plant provides oils with different characteristics. They are unique not only in their chemical disposition but also in regards to use: health-related use, salad dressing, cooking, baking, or frying; and by the extraction method: industrially refined oils, traditionally extracted oils by roasting and pressing, and cold-pressed oils. The most standard division, which will also be used in this analysis, is to divide oils based on the method of pressing (oil extraction). Based on the chosen extraction method, the same number of seeds can provide different quantities of oil for different purposes. To make it possible to perform the analysis and compare, we will divide oils into three groups: industrially refined edible oils, traditionally pressed oils, and cold-pressed oils (Vidrih, 2015).

Cold-pressed oils are pressed only with mechanical pressing at a low temperature. The pressure at which pressing is executed is relatively low compared to industrial oil. No matter the execution, the temperature of pressing should not exceed 37–38 degrees Celsius, with a maximum of 40 degrees Celsius. A stricter rule applies to olive oil, where the temperature must not exceed 27 degrees Celsius. Cold-pressed oils must not be chemically cleaned but should be left to sit until the sediment sets. After that, the clear oil can be drained. Due to the omission of heat, cold-pressed oils retain most of their vitamins and other health-beneficial substances. The use of cold-pressed oils in the world accounts for only 2–3% of

what is pressed and sold on the market by large oil-extraction plants (Vidrih, 2015). Among the extraction methods, the cold-pressed method has the lowest oil extraction yield, but the higher price of oil can compensate for that. Also, there is a limitation on the extraction of oils by the cold press methods from sources with low oil content due to the low extraction yield obtained by this method (Hashempour-Baltork, Farshi, Alizadeh, Azadmard-Damirchi, & Torbati, 2022).

Traditionally pressed oils are obtained by using mechanical force to squeeze the oil out of the seed. Before that, the crushed seeds are roasted, which gives the oil a stronger fragrance and scent and results in slightly higher quantities of extracted oil compared to cold-pressed oils. The pressure from pressing may be higher. This method allows for more oil to be squeezed out of the seed compared to cold pressing. The most commonly known traditionally pressed oil in Slovenia is pumpkin oil, where seeds are roasted to acquire a pleasant scent and improve taste (Vidrih, 2015). This is also the category in which the company places its flagship product, non-refined sunflower oil.

It is not economically efficient for large industrial vegetable oil factories to produce traditionally pressed or cold-pressed oils; that is why the industry has focused on the extensive production of standardised edible oils, known as (industrially) refined oils, which are suitable for a wide variety of consumption uses. Industrial oil factories most often use the oil extraction processes of solvent extraction and mechanical pressing. To extract oil from oilseeds, solvent extraction uses a liquid solvent (most commonly hexane). Ground seeds are purged or washed with the solvent, releasing the oil in the seed. To remove the solvent, the oil is heated, and the recovered solvent can be reused for extraction. This process is the standard practice in the industry, as it is the most efficient and reliable when pressing large quantities of oilseeds (achieving 95% oil yields). Mechanical pressing, on the other hand, achieves 60–70% oil yield. The raw seeds are pressed in large hydraulic presses. The pressure of pressing is greatly higher than with previous extraction methods. After the first industrial press, the remaining oil cakes are milled again, then roasted or scalded. The heat allows the plant cells to open, and the roasted residue can be pressed again to extract the remaining oil (Kmec, n.d.).

The crude oil, obtained by solvent extraction and industrial mechanical pressing, is not yet edible due to its high contents of free fatty acids, wax, and an overall unpleasant aroma. This oil needs to go through the refining process before being offered to consumers. Due to refining, most of the vitamin E and antioxidants are lost; nevertheless, the oil becomes resistant to oxidation and has a prolonged shelf life. The general rule is that refined oils should only be used for cooking, frying, and baking (Vidrih, 2015).

Some labels on vegetable oils state that the product is made up of a combination of different edible oils. By combining different oils into one product, producers achieve a higher scope of positive characteristics. Mixing edible cold-pressed oils is especially recommended for sustaining human health (Vidrih, 2015).

To conduct the analysis of oil availability in the Slovenian market and price comparison, I have analysed products available on the internet, such as the online stores of privately owned Slovenian oil factories and the online stores of Slovenian supermarket chains Spar, Mercator, and DM. The findings are shown in Table 4. As the majority of products offered in Spar and Mercator are the same, with minimal pricing deviations, these products are only entered once with the prices of Spar considered. That is why the frequency of the store Spar is the highest. The products were grouped into cold-pressed and refined oils, with one sunflower oil labelled as non-refined. While Spar and Mercator offer a variety of refined sunflower oils, they offer fewer options for non-refined and cold-pressed oils. Out of 14 available sunflower oils (not counting packaging of more than 1 litre), 10 of them are refined oils, and 4 of them are cold-pressed.

When it comes to Slovenian oil factories, many of them are focused on selling olive oil and pumpkin oil, marketing their products mostly based on tradition and quality. Their offer of oils extends to salad oils and other cold-pressed oils, such as rapeseed oil, walnut oil, and hempseed oil. Other available products include mostly edible seeds, flavoured spreads, and flour. While Slovenian oil factories mostly claim to offer Slovenian products with Slovenian origins, supermarkets differ in countries of production and oil origin. Out of the 10 refined oils examined, none of them offered exact information about the oil's origin. Three out of ten are labelled as farming in both EU and non-EU countries, while the remaining seven offer no information on origin, only the country of product production. On the other hand, the majority of cold-pressed sunflower oil offers information about the oil's origin. Two of the nine analysed cold-pressed sunflower oils don’t provide information about the oil's origin (see Table 4).

As evident from Table 4, refined oils are cheaper in comparison with cold-pressed oils, which reach the highest prices per litre. The lower price of refined oils can be due to the higher pressing efficiency of refined oils, as the seeds are pressed multiple times, allowing for full extraction and larger quantities of the final product. On the contrary, cold-pressing allows only one press, resulting in a lower oil extraction yield and requiring more raw material (seeds) for oil extraction, reflecting the higher price of the final product. Certificates, such as those for products of ecological farming (BIO label), also reflect the higher price. Four of the examined oils advertise high contents of oleic acid on their packaging. Interestingly, commercial stores offer only cold-pressed and refined sunflower oils, not traditionally pressed sunflower oil obtained from roasted seeds.

Table 4: Price comparison of available sunflower oils in Slovenia

Store	Category	Brand	Made in	Origin of oil	Price/litre (€)	Special labels
Spar	Cold-pressed	Spar Vital	Slovenia	No data	7,98	High content of oleic acid
Spar	Cold-pressed	Iz kamr'ce	Croatia	Croatia	5,29	-
Spar	Cold-pressed	Gea	Slovenia	EU	11,56	BIO
Spar	Cold-pressed	Kot doma	Slovenia	Slovenia	9,31	-
Mercator	Cold-pressed	Mercator	Slovenia	Slovenia	8,51	-
Web	Cold-pressed	Kmetija Klepec	Slovenia	Slovenia	11,33	-
DM	Cold-pressed	DM bio	Germany	Germany	6,98	BIO
Web	Cold-pressed	Oljarna Kocbek	Slovenia	Slovenia	13,33	-
Web	Cold-pressed	Oljarna Pečarič	Slovenia	No data	6,00	BIO
Web	Non-refined	Oljarna Šaruga	Slovenia	Slovenia	6,20	-
Spar	Refined	S-Budget	Hungary	No data	1,95	-
Spar	Refined	Spar	Hungary	No data	2,29	-
Spar	Refined	Zvijezda	Croatia	No data	2,98	-
Spar	Refined	Cekin	Slovenia	EU, outside EU	3,28	-
Spar	Refined	Zvezda	Slovenia	EU, outside EU	3,28	-
Spar	Refined	Floriol	Hungary	No data	3,28	High content of oleic acid
Spar	Refined	Zvijezda	Croatia	No data	3,48	For repeated frying
Spar	Refined	Cekin	Slovenia	No data	4,48	High content of oleic acid
Spar	Refined	Gea	Slovenia	No data	5,48	High content of oleic acid
Spar	Refined	Cekin	Slovenia	EU, outside EU	5,98	BIO

Source: Own work.

To extend the analysis, online health food stores were analysed in Table 5. The majority of them offer only cold-pressed sunflower oil. Four non-refined, traditionally pressed oils were found in the research, listed in Table 5.

Table 5: Price comparison of available non-refined sunflower oils in online health stores

Store	Category	Made in	Price/litre	Special label
BeEko	Non-refined, traditionally-pressed	Slovenia	12,20	BIO
VilaNatura	Non-refined, traditionally-pressed	Slovenia	12,60	BIO
Lokalnojeobetavno	Non-refined, traditionally-pressed	Slovenia	12,50	-
Hlebosol	Non-refined, traditionally-pressed	Ukraine	4,90	-

Source: Own work.

Results of the analysis show that non-refined, traditionally-pressed sunflower oil is rare on the market, not counting the local farms offering the product physically (not found online). The majority of non-refined oils offered on the market are cold-pressed. This may be due to a number of reasons. Not only are cold-pressed oils one of the most valuable among consumers, but they are also easily obtained—extracted by a relatively easy and cheap procedure, adding to their overall wide availability on the market. Aside from the important control of the extracting temperatures, it is an easy extraction, requiring minimal machinery and a quick process. Traditional pressing, on the other hand, requires more expensive machinery, including the processes of seed cracking, dehulling, and roasting ground seeds in order to extract oil suitable for consumption (without further refining).

Furthermore, traditionally pressed sunflower oil is a novelty on the market since most oil factories and local farmers focus on producing traditionally pressed pumpkin oil, which is offered as the main product of many oil factories. Non-refined sunflower oil (most frequently cold-pressed) is typically available in their ‘other products’ assortment.

5.2 Analysis of consumer knowledge, patterns, values through a survey questionnaire

5.2.1 Purpose of the survey research

One of the main goals of the thesis is to evaluate the existing knowledge of domestic Slovenian consumers on non-refined sunflower oil to see which characteristics are valued most by consumers when purchasing vegetable oils and how much they would be willing to pay for a new product on the market. The results of the analysis were obtained through an online survey questionnaire with the online tool 1KA. The answers obtained will provide

valuable information to form and propose a tentative target consumer base and to get an idea of the pricing strategy the company will adopt.

5.2.2 Research questions

The survey questionnaire aims to answer the following research questions, which will help the company evaluate existing consumer knowledge on edible oil usage and differentiation.

RQ1: How much do Slovenian consumers differentiate between different types of oil?

RQ2: What characteristics of edible oils do Slovenian consumers attach the most value to?

RQ3: Are Slovenian consumers willing to try and accept a new type of sunflower oil?

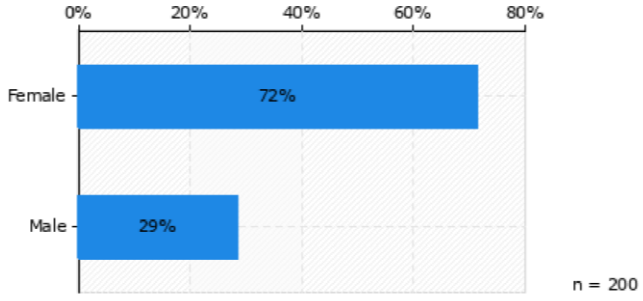
RQ4: How much are Slovenian consumers willing to pay for non-refined sunflower oil?

5.2.3 Results of the analysis

Over the course of 13 days, 201 valid answers were obtained from the survey questionnaire. The data obtained was analysed with tools available in 1KA and Microsoft Excel. The survey was distributed in Slovenian language through social media platforms such as Facebook, through forwarding, and through publishing in a variety of specialised groups. The targeted audience was consumers, who engage in cooking regardless of age, gender, or location. A copy of the questionnaire can be found in Appendix 2.

Demographical characteristics, such as gender and age structure, of the respondents are presented in Figures 14 and 15. The survey was completed by 143 women and 57 men, while one of the respondents didn't categorise themselves.

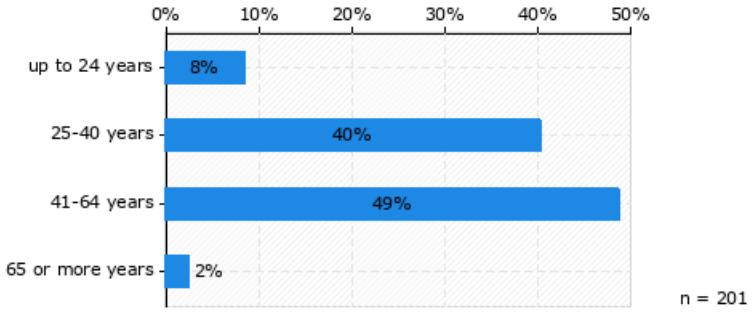
Figure 14: Gender structure of the respondents



Source: Own work.

The age structure of the respondents is quite diverse. Almost half of the respondents fall into the age group of 50–64 years, followed by 40% of the age group of 15–29 years. Age groups up to 24 years and above 65 years were represented less, by 8% and 2%, respectively. See Figure 15.

Figure 15: Age structure of the respondents

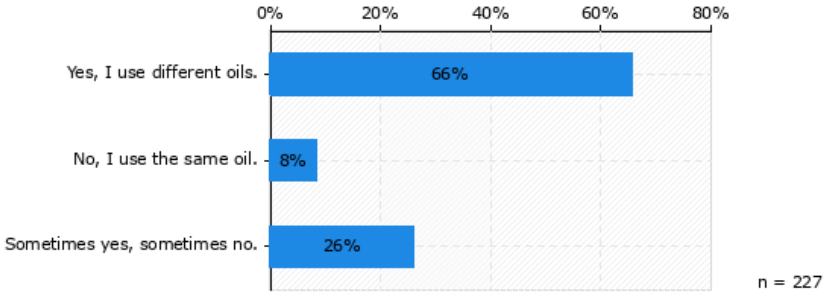


Source: Own work.

The first set of three questions was used to analyse which oils consumers currently use and whether they know the difference between different pressing types and types of oils, more specifically, non-refined and cold-pressed oils.

The first question was to establish whether respondents use different types of oils when preparing different dishes. Answers show that 66% of respondents use different cooking oils for different dishes, while 8% use the same type of oil to prepare all dishes. 26% varies between the two answers, using different oils only sometimes (see Figure 16).

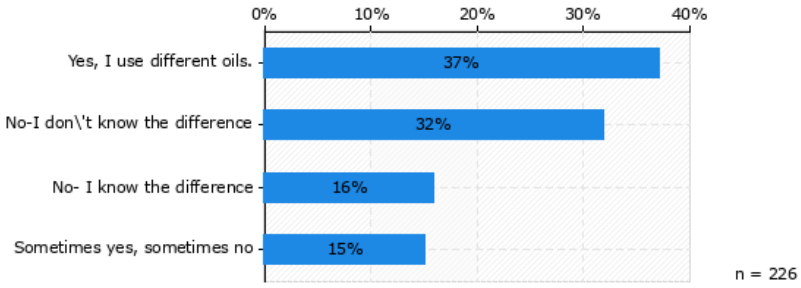
Figure 16: Shares of different cooking oil used by respondents



Source: Own work.

The second question was to establish whether respondents differentiate between traditionally pressed and cold-pressed oils when preparing different dishes. 37% of respondents do differentiate, while almost the same share of respondents (32%) do not differentiate and do not know the difference. 16% do not differentiate but do know the difference, while 15% of respondents sometimes do differentiate and sometimes do not (see Figure 17).

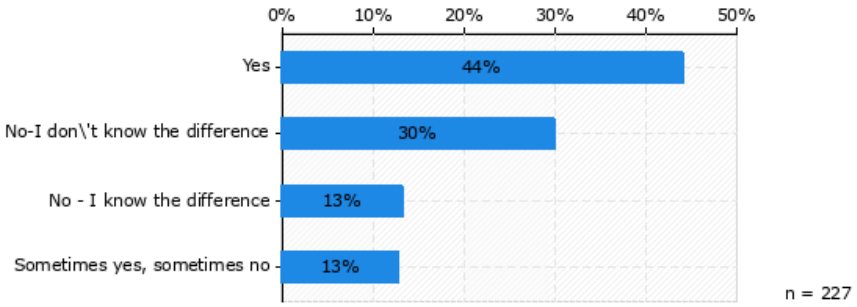
Figure 17: Share of consumers differentiation between cold-pressed and traditionally-pressed oils when preparing different dishes



Source: Own work.

The third question was to establish whether respondents differentiate between refined and non-refined oils when purchasing edible oils. Results show that 44% of respondents do differentiate, while 30% do not differentiate and do not know the difference between refined and non-refined oils. 13% of respondents do not differentiate but do know the difference, while 13% of respondents sometimes differentiate and sometimes do not (see Figure 18).

Figure 18: Share of consumer differentiation between refined and non-refined oils when purchasing edible oils

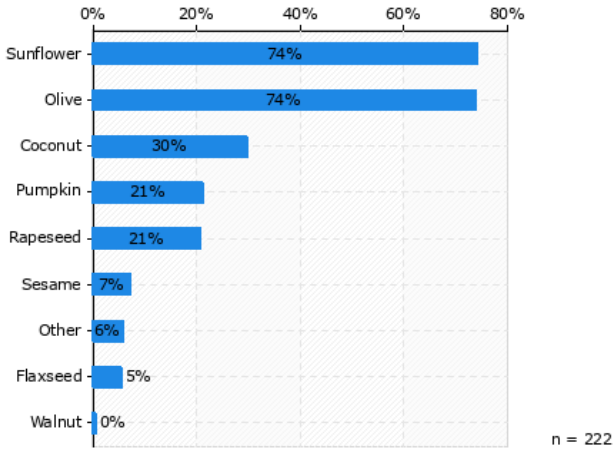


Source: Own work.

To see which cooking oils respondents use for different dishes, the following three questions were asked in the next section: Respondents had to choose between a list of edible oils for three different usage purposes: cooking or baking, frying, and salad dressing.

For cooking/baking purposes, respondents most commonly used sunflower oil and olive oil (74%), followed by coconut oil (30%), pumpkin oil (21%), rapeseed oil (21%), and flaxseed oil (5%). 6% used the option "other", most commonly stating peanut oil (see Figure 19).

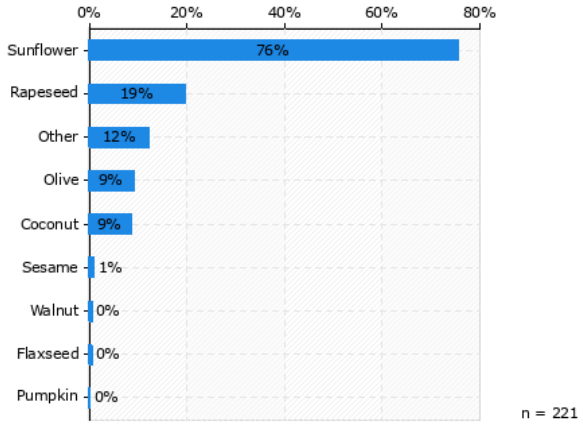
Figure 19: Respondents' oil usage by type, used for cooking/baking



Source: Own work.

For frying purposes, most commonly, respondents use sunflower oil (76%), followed by rapeseed oil (19%). 9% of respondents use coconut oil or olive oil, while 12% state other alternatives, such as peanut oil and lard (see Figure 20).

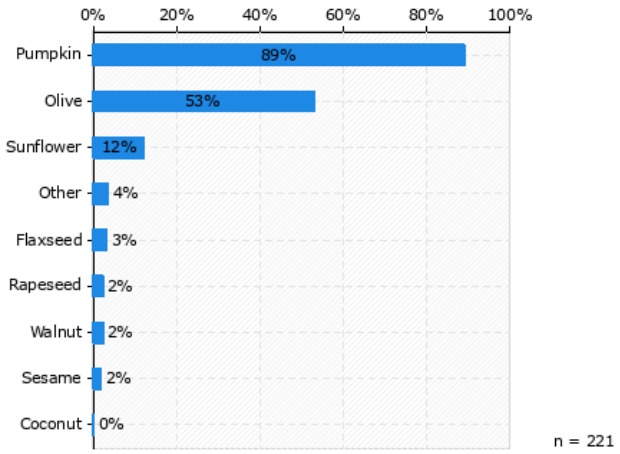
Figure 20: Respondents' oil usage by type, used for frying



Source: Own work.

For salad dressing, the majority of respondents use pumpkin oil (89%), followed by olive oil (53%). Sunflower oil comes in third with 12%, followed by flaxseed oil (3%), rapeseed oil (2%), and walnut oil (2%). 4% stated other oils, such as hempseed oil, salad oil, and mixed oil (see Figure 21).

Figure 21: Respondents oil usage by type, used for salad dressing



Source: Own work.

The following section was to establish which oil characteristics respondents put the most value on. Respondents had to rate the importance of a characteristic on a Likert scale of importance, ranging from 1 (unimportant) to 5 (very important). Results show that respondents put the most value on the quality of oil (average importance of 4.2) and its effect on health and diseases (average importance of 4.1). Important are also the option to buy the product in a physical store (average importance of 3.8), Slovenian or local products (average importance of 3.8), glass bottle packaging (average importance of 3.7), and certificates (average importance of 3.7). The price of oil is of middle importance to respondents, with an average importance of 3.4. Other characteristics, such as awards and recognitions, brand, look of the product, and the possibility of an online purchase, scored lower importance points. See Table 6.

Table 6: Important characteristics of edible oils, evaluated by respondents

	Un-important	Slightly important	Un-decided	Important	Very important	Sum	Average
Quality of oil	3 1%	12 6%	25 12%	77 36%	97 45%	214 100%	4,2
Price of oil	11 5%	48 23%	28 13%	103 48%	23 11%	213 100%	3,4
Brand (producer)	33 15%	29 14%	68 32%	65 31%	18 8%	213 100%	3
Slovenian/local product	7 3%	18 8%	47 22%	83 39%	58 27%	213 100%	3,8
Glass bottle packaging	12 6%	17 8%	60 28%	61 29%	64 30%	214 100%	3,7
Physical look of product	26 12%	40 19%	72 34%	55 26%	20 9%	213 100%	3
The effect of oil on health and diseases	6 3%	10 5%	21 10%	102 48%	74 35%	213 100%	4,1
Certificates (BIO etc.)	9 4%	20 9%	45 21%	99 46%	41 19%	214 100%	3,7
Awards and recognitions (Consumer product testing etc)	18 8%	25 12%	79 37%	71 33%	21 10%	214 100%	3,2
Online purchase option	55 26%	38 18%	80 37%	30 14%	11 5%	214 100%	2,6
Physical store purchase option	8 4%	9 4%	49 23%	93 43%	55 26%	214 100%	3,8

Source: Own work.

The next section was for the respondents to evaluate seven statements based on how much they agreed with them. Likert's scale was used to rank levels of agreement, ranging from 1 (strongly disagree) to 5 (strongly agree). The purpose behind the question was to evaluate consumers current knowledge and opinions on edible oils. Results are shown in Table 7. Respondents scored the highest average agreement on the statement that quality edible oils have positive benefits for health (average level of agreement 4.1) and that they are willing to spend more money for better quality oils (average level of agreement 3.9). Respondents agree least with the statements that olive oil is the oil of the best quality (average level of agreement 3.0) and that sunflower oil is appropriate only for frying (average level of agreement 2.7).

Table 7: Respondents' level of agreement with procured statements

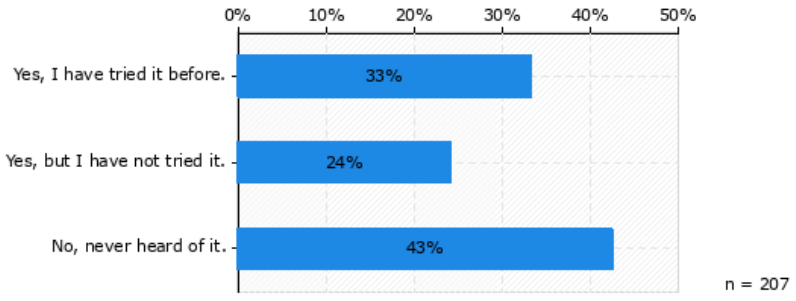
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Sum	Average
Cold-pressed oils are of better quality than traditionally-pressed oils.	1 0%	2 1%	64 31%	92 44%	48 23%	207 100%	3,9
Non-refined oils are of better quality than refined oils.	0 0%	1 0%	98 47%	70 34%	38 18%	207 100%	3,7
Price of oil reflects the quality of oil.	9 4%	75 36%	43 21%	68 33%	12 6%	207 100%	3
I am willing to spend more money for quality oil.	1 0%	14 7%	28 14%	121 58%	43 21%	207 100%	3,9
Quality oils can benefit human health.	2 1%	3 1%	30 15%	113 55%	58 28%	206 100%	4,1
Olive oil is the best quality edible oil.	5 2%	38 18%	76 37%	71 34%	17 8%	207 100%	3,3
Sunflower oil is appropriate only for frying.	23 11%	78 38%	60 29%	40 19%	6 3%	207 100%	2,7

Source: Own work.

The last section of the questionnaire aims to establish whether respondents have yet heard of non-refined sunflower oil or used it. Depending on the answer, respondents were asked whether they would be willing to try it and how much they would be willing to pay for one litre of local, non-refined Slovenian sunflower oil.

Figure 22 shows the answers to the question of whether the respondents are already familiar with non-refined sunflower and whether they have heard of it before. Results show that 43% of respondents have never before heard of non-refined sunflower oil, while 24% have heard of it but never tried it. 33% of respondents have tried it before.

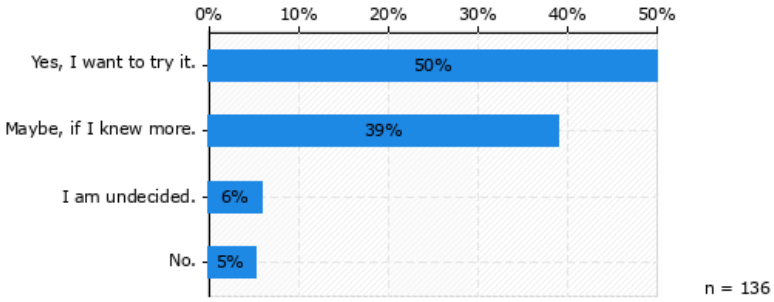
Figure 22: Respondents familiarity with non-refined sunflower oil



Source: Own work.

The respondents who have not tried or heard of it (meaning the second and third answers in the previous question) were then asked whether they would like to try the product. The answers are shown in Figure 23. Half of the respondents (50%) stated that they do want to try the product, while 39% would be willing to try it if they knew more about the product. 6% were undecided, while 5% of respondents stated that they did not want to try the product.

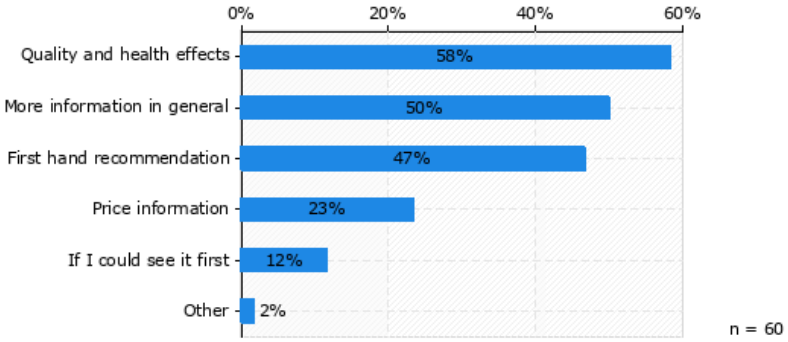
Figure 23: Respondents' willingness to try non-refined sunflower oil



Source: Own work.

Those who were unsure whether or not they would like to try the product (meaning the second and third answers in the previous question) were then asked what would convince them to try the product. 58% of respondents said they would like more information on quality and health effects, while 50% would like to know more information about the product in general before giving it a try. 47% would be willing to try the product based on first-hand recommendations from family or acquaintances. 23% would decide after knowing the price of the product, while 12% would like to see the product first before giving it a try. One respondent answered "other": the quality-to-price ratio.

Figure 24: Respondents' conditions under which they would be willing to try the product



Source: Own work.

All respondents were then asked how much they would be willing to pay for one litre of Slovenian non-refined sunflower oil. To avoid extreme answers, the maximum value was set at 30 euros. The obtained answers varied from 2 to 30 euros, with 186 collected responses (15 respondents have omitted the answer). Results are shown in Table 8. The most frequent answer among respondents was 10 euros (26%), followed by 5 euros (13%), and 15 euros (12%). Based on the obtained answers, the average price they would be willing to pay is 12,11 euros, while the weighted average price is 9,98 euros.

Table 8: Respondents' price suggestions for 1 litre of Slovenian non-refined sunflower oil

Answers (€)	Frequency	%
2	7	4%
3	10	5%
4	9	5%
5	24	13%
6	9	5%
7	4	2%
8	13	7%
9	4	2%
10	48	26%
12	11	6%
13	2	1%
14	1	1%
15	22	12%
17	1	1%
18	5	3%
20	13	7%
25	1	1%
30	2	1%
Sum	186	100%

Source: Own work.

5.2.4 Research findings

RQ1: How much do Slovenian consumer differentiate between different types of oil?

The results showed that the majority of respondents do differentiate between different oils for different uses, as 66% of respondents stated that they use different cooking oils when preparing different foods. When asked about the difference between traditionally pressed and cold-pressed oils, 32% of respondents do not differentiate and do not know the difference between oils. Furthermore, when asked about the difference between refined and non-refined oils, 30% said that they do not differentiate and do not know the difference. This means that almost a third of respondents have limited knowledge of different types of oil, leaving a big opportunity for oil producers to raise awareness of different types of oil and

therefore influence the purchasing patterns of consumers to start differentiating between different types of oils.

Results show that for cooking and baking, respondents use equal amounts of olive oil and sunflower oil (both 74%), followed by coconut oil, rapeseed oil, and peanut oil. For frying, most frequently, respondents use sunflower oil (76%) and rapeseed oil (19%), whereas a lot of respondents used the "other" option to say that they do not fry food at all. When it comes to salad dressings, respondents most frequently use pumpkin oil (89%), followed by olive oil (53%), and sunflower oil (12%). These results show that sunflower oil is mostly used for frying purposes. Nevertheless, we assume this oil to be industrially refined sunflower oil and not non-refined or cold-pressed sunflower oil. This shows the limited availability of non-refined sunflower oils both in commercial stores and in local production. Furthermore, this again shows a lack of consumer knowledge on non-refined sunflower oil and its use, understandably because it is still a novelty on the market.

RQ2: What characteristics of edible oils do Slovenian consumers attach the most value to?

Results show that respondents value most the quality of oil and the effect of oil on human health and certain diseases. In fact, 82% of respondents agree with the statement that quality oils have positive effects on human health, while only 2% do not agree with the statement (15% remain undecided). Furthermore, when asked to rank the quality of traditionally pressed and cold-pressed oils, 31% of respondents went for the option of "undecided", meaning that they do not know the difference. Similarly, when asked to rank the quality of refined and non-refined oils, almost half (47%) chose the option "undecided". This leaves potential for the company to advertise the positive effects of non-refined sunflower oil on human health and its beneficial nutritional value.

Respondents do place a lot of value on Slovenian and locally made products. Packaging oil in a glass bottle, certificates, and awards are of middle importance. Interestingly, the price of the oil is of low importance to respondents, implying that they are willing to spend more money for a quality product. The least important characteristics, according to the respondents, are the look of the product and the possibility of buying it online. Respondents prefer to purchase edible oils in physical stores. This may raise concern, as the company intends to start its business with an online selling point in the form of an online shop. Respondents put little value on the oil brand—producer or company—meaning that brand name is not important for respondents when it comes to purchasing edible oils, implying that they switch easily between different brands. Even though this leaves the opportunity to easily acquire new customers, it could also mean a low consumer retention rate, as it implies little loyalty to brands.

RQ3: Are Slovenian consumers willing to try and accept a new type of sunflower oil?

To test two general assumptions about olive oil and sunflower oil, respondents were asked for their level of agreement with two statements. Firstly, to what extent do respondents agree that olive oil is the highest-quality edible oil? 43% agree with the statement, 37% remain undecided, and 20% do not agree. This goes to show that there is a general belief amongst the general population that olive oil is of superior quality. The other stereotypical statement tested was that sunflower oil is appropriate only for frying. 22% agreed with the statement, 29% remained undecided, and interestingly, 49% disagreed with the statement. This goes to show that respondents find other proper uses for sunflower oil other than frying.

Furthermore, the survey questionnaire showed that 43% of respondents had never heard of non-refined sunflower oil before, and 24% had never tried it before. When asked whether they would like to try it, 89% of respondents answered yes. This clearly answers the research question with a positive answer.

RQ4: How much are Slovenian consumers willing to pay for non-refined sunflower oil?

39% of respondents agree that the price of the oil reflects its quality, 21% remain undecided, and the remaining 40% do not agree. This result was contrary to expectation, as the price of a quality oil should reflect its superior quality. Nevertheless, this is often abused due to deceived labelling and other tricks producers use to advertise 'healthy' oils and markup prices. On the other hand, 79% of respondents are willing to pay a premium price for quality oils, while 14% remain undecided, and only 7% would not be willing to pay more for a quality oil. The answers suggesting the price for one litre of non-refined sunflower oil showed very diverse answers, ranging from 2 euros to 30 euros. The most common answer was 10 euros (26%), followed by 5 euros (13%), and then 15 euros (12%). This shows that respondents in fact do not know where to price non-refined sunflower oil in comparison to other oils of comparable quality, understandably because a lot of them have never heard of it or tried it before. On average, they would be willing to pay 12,11 euros.

The findings benefit the shaping of the company's pricing strategy. Currently, the company estimates the following costs: oil packaging (glass bottle, bottle cap, label), purchasing cost of raw material (planting seeds), pressing cost, and shipment packaging. Other costs associated with oil production, such as equipment, machinery, transportation, warehousing, and labour work, are currently hard to breakdown in terms of cost per unit, as the company is also engaged in other farm-related activities that are not related to oil production. Roughly, the company estimates the cost per unit—one litre of non-refined sunflower oil—to be circa 5 euros. The shipping cost of bottles to end customers is cause for concern. As the oil is packaged in glass bottles, which get heavier with quantity, the company will face increased shipping costs with larger orders and heavier packages (shipping is outsourced and provided by a third party). Shipping for one litre is estimated at 2.5–3 Euros due to the weight. That cost, added to the production cost and packaging cost, is too high to be carried solely by the

company, which is why the final price for the end consumer will have to reflect a share of the relatively high shipping cost.

The findings of the survey questionnaire estimate an average selling price of 12 euros, whereas the most common answer was 10 euros. As the company is newly established with little brand recognition, the initial price of 10 euros per litre seems reasonable. Even though this price covers the costs, projections show that it would not generate enough profit to cover extensive production costs and labour work in the long term. Once the brand is more established with a loyal consumer base, the price will most likely need to be increased. The fact that the survey analysis showed an average answer of 12 euros is a positive signal for the company, as it shows that many respondents are willing to pay a premium price for the product. Nevertheless, opportunity remains for potential consumers, who are yet to be educated on the positive characteristics of the product and therefore may accept the higher price in return for a premium product.

5.3 SWOT analysis

A SWOT analysis will help facilitate the entrance of the company into the sunflower seed oil market by providing insights into the current situation and identifying areas for improvement. The ultimate goal of this strategic tool is to guide the decision-making process. SWOT analysis analyses the internal and external factors that can impact the organization. Internal factors include strengths, which are the positive attributes that give the organisation a competitive advantage, and weaknesses**,** which are factors placing the entity at a disadvantage compared to others. External factors are the result of the environment; they include opportunities, which can be a beneficial result of circumstances and the environment, and threats, which may potentially harm the entity.

Strengths:

- High-quality product: characteristics of oil purity, unique taste, and smell.
- Product differentiation: a unique product with which the company can focus on value propositions such as superior taste and specialized production methods.
- Market demand: sunflower oil is a widely known and popular edible oil known for its health benefits.
- Strong branding based on tradition.
- Advanced manufacturing facilities and physical assets of the company.
- Recent investments in product development and production facilities.
- Wide market reach and ensured availability of sunflower oil products.
- High customer acquisition through referrals and reputation.
- High rate of returning customers (high customer retention rate).

Weaknesses:

- Limited market experience: being a potential entrant, the company may lack experience and established relationships within the market, which could hinder its understanding of consumer preferences and industry dynamics.
- Limited product range: the company currently offers a limited variety of products, which may restrict its ability to cater to diverse consumer preferences.
- Reliance on external processes of production, which can expose it to supply chain risks and price fluctuations.
- Higher production costs: the production costs of non-refined sunflower oil may be relatively higher compared to other edible oils, impacting the company's competitiveness.
- Brand awareness: building brand recognition from scratch can be challenging and time-consuming. The potential company may face difficulties in establishing its brand presence and gaining consumer trust.
- Premium price.
- Relatively high shipping costs both for the company and end consumer due to heavier product and shipping conditions.
- Resource constraint: production capacity or access to key inputs could impact the company's ability to compete with established players.

Opportunities:

- Growing health-conscious consumer base: the increasing awareness about the health benefits of sunflower oil presents an opportunity for the company to target health-conscious consumers.
- Expanding global market: the demand for sunflower oil is rising not only domestically but also in international markets, allowing the company to explore new export opportunities by targeting regions with growing demand or where the product is less saturated.
- Product diversification: the company can consider expanding its product range to include organic, flavoured, or specialty sunflower oil variants to cater to different customer segments.
- Niche market segment: the company can identify and target niche markets, such as organic or premium segments, catering to specific dietary needs or culinary preferences.
- Consumer education: the company can educate consumers about the benefits of non-refined sunflower oil, and its nutritional value, cooking applications and health advantages, to stimulate market growth and preference.
- Potential markets outside edible oils include the use of sunflower seeds as confectionary, cosmetics, and potentially in the biodiesel industry.

Threats:

- Intense competition, players with strong market presence: the sunflower oil market is highly competitive, with numerous established players and new entrants. The company needs to differentiate itself and effectively position its product to withstand competition and gain market share.
- Price volatility of raw materials: fluctuations in the prices of inputs and sunflower seeds can impact the company's profitability, especially since it faces difficulty in passing on the increased costs to consumers.
- Regulatory and compliance factors: the company must stay updated on shifts in government regulations related to food safety standards and labelling requirements.
- Import and export regulations may pose challenges for the company's operations. It is necessary to take into account other industry-specific regulations to ensure compliance and avoid legal issues.
- Climate change and other natural conditions may threaten the farming and production of sunflowers.

5.4 Proposed strategy and recommendations

Define target market: the specific target market for the company is end consumers (B2C)—health-conscious consumers, home cooks, specialty food enthusiasts—or B2B—supermarkets, health-oriented specialty stores, and gourmet restaurants.

Unique selling proposition: determine the unique selling points of non-refined sunflower oil are based on its superior quality and beneficial effects on human health. A lot of importance is placed on origin and tradition.

Branding and packaging: developing a compelling brand identity that resonates with the target market is based on tradition, sustainability, nature, home production, local products, and family-owned businesses. Packaging communicates the product's key attributes and appeals to the target consumer's preferences, including a zero-plastic strategy and eco-friendly packaging and shipping.

Digital presence: in the form of a website, social media, and content marketing. The website serves as an informative and user-friendly point of information, showcasing the product, its benefits, and usage ideas. Include an online store for direct sales as well as information on retail locations. Popular social media is used as leverage to promote and engage with the target audience and share visually appealing content, recipes, and health-related tips. Potentially, collaborate with influencers or micro-influencers who would promote the product to reach a wider audience. The use of content marketing focuses on educating consumers about the benefits of sunflower seed oil. Furthermore, publishing blog articles, videos, and infographics helps build trust and loyalty with customers.

Collaborations and partnerships: connect with local specialty stores, health food stores, gourmet retailers, or supermarket segments of "local products" (example: Mercator's brand *Radi imamo domače*). Offer product demonstrations and sampling to increase product visibility. Offer product samples at local farmers' markets, food festivals, or community events to allow consumers to experience the product firsthand. Conduct product demonstrations to showcase its versatility in cooking.

Online advertising: use specialised search engines to capture relevant search traffic for keywords related to sunflower seed oil and healthy cooking. Collaborate with influential food bloggers, recipe creators, or lifestyle influencers who can promote the product through sponsored content or product reviews.

Customer reviews and loyalty programmes: encourage satisfied customers to leave positive reviews on websites and social media platforms to build trust and credibility among potential customers. Implement a customer loyalty programme, rewarding repeat purchases or referrals. Offer exclusive discounts or personalised offers.

Regular evaluation and adaptation: based on market feedback and performance analysis, measure the effectiveness of marketing strategies through web analytics, sales data, and customer feedback.

6 LIMITATIONS AND FURTHER RESEARCH

The last part of the thesis will focus on existing limitations and further research that would be meaningful for an extended analysis and better understanding of the topic. The main limitation for the research would be a rather limited database on non-refined oils when it comes to market research, as most existing data and analyses are based on refined oils. In the empirical part, the limitations with data acquisition with the online questionnaire were a relatively small sample size as well as a content- and time-limited questionnaire. To have a proper timeframe for the survey, the scope and depth of the questions were limited. The respondent pool was relatively small, affecting the generalizability and external validity of the findings. For a more thorough and comprehensive view of the researched issue, a larger pool of respondents would be needed, with a diverse regional geographical distribution from all regions in Slovenia. To obtain more relevant data, the questionnaire should be longer with more thorough questions and contain more practical implications. This would substantially prolong the time to finish the survey, which is why it was designed to obtain only the necessary data with an optimal finish time. Furthermore, the research was executed online, which is a limitation on its own, excluding a lot of potential respondents, mostly older generations who are not present on social media but represent a large portion of potential customers.

The thesis provides a good base for further research, not only for the potential company but also for other small farmers and entrepreneurs who wish to grow both their businesses and

their knowledge. Further research could contribute to a deeper understanding of sunflower seed oil, its properties, benefits, and market dynamics, leading to potential advancements and improvements in the industry. This research could help position sunflower seed oil as a healthier alternative to other edible oils by expanding research to include specific health benefits. Qualitative research gives insights into market trends and can guide product development and market expansion. Comparative research studies can assess sunflower seed oil against other edible oils not only in terms of nutritional value but also to help consumers and industry professionals make informed choices and understand the unique characteristics of (non-refined) sunflower seed oil. It would make sense to expand the survey questionnaire to focus more on consumer preferences and their buying habits for edible oils. Furthermore, the quantitative research in the thesis can serve as a starting point for research on consumer preferences, attitudes, and purchasing behaviours related to edible oils, providing insights for product positioning and marketing strategies. It could also test some stereotypes based on oil consumption as well as help raise awareness about the importance of distinguishing between different types of oils and their both positive and negative effects on human health.

CONCLUSION

The sunflower seed oil market has witnessed steady growth over the last decades. Its characteristics of high levels of unsaturated fatty acids and its high smoke point have led to its worldwide and rapid usage (CBI, 2022).

Rising demand in recent years has been observed in developing countries, where it is considered a healthier and cheaper option than competitive oils. Increased consumption of sunflower oil offsets the global decline in palm, cottonseed, and rapeseed oils. Europe holds the largest share of the sunflower oil market, as the natural neutral oil market is experiencing steady growth in the region. As consumers in developed countries are choosing healthier cooking oils to support their health, sunflower oil consumption has increased both in households and in the food service sector. As a result, an increase in areas cultivated with sunflowers pushed up the price of sowing seeds. As Ukraine and Russia account for the largest exporters of sunflower oil, the conflict between the two countries resulted in a disrupted global vegetable oil market, resulting in higher prices and low supply. Higher market prices have reflected in the prices of other types of vegetable oils; nevertheless, exporters are benefiting from the higher market prices, making up for the higher cost of production inputs and the expected decline of exports to Russia and Ukraine (CBI, 2022).

Vegetable oils can be consumed in both non-refined and refined forms, with a growing interest in the consumption of traditionally-pressed and cold-pressed oils as functional foods. It is known that non-refined oils have beneficial effects on gut microbiota, affecting the nervous system and body health, as well as regulating inflammatory and metabolic changes, which makes such oils highly valuable amongst consumers. Demand is shifting towards healthier and higher-priced oils (Hashempour-Baltork et al., 2022).

A potential local company, which currently operates as a farm producing mainly sunflower seed oil, amongst other oilseeds and oils, sees a lot of potential in its novelty product, non-refined sunflower oil. Quantitative research in this thesis showed that Slovenian consumers highly value quality oils and that there is a general belief that quality oils do have a positive impact on human health, confirming that there is a wide variety of potential consumers for such products. By advertising the positive health effects of non-refined oils, health-conscious consumers are expected to react positively to the company's product. Research showed that already a large share of respondents are willing to buy this product, even at a premium price.

Based on the market analysis and consumer research conducted, results have shown that there is market availability for non-refined sunflower oil in Slovenia. Even though research findings have outlined a pricing strategy, the company will have to conduct a more detailed analysis in order to conduct a proper business plan, starting with a thorough cost analysis.

Entering the market presents both opportunities and challenges. By developing a comprehensive entrance strategy and implementing an effective marketing plan based on quality, natural products, and sustainability, the potential company can expect high sales along with a strong market share. Continuous improvement and adaptation, along with monitoring market trends and industry developments, are necessary, as the nature of the business faces vulnerability to natural conditions on top of the shortcoming of being a new, small company.

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APPENDICES

Appendix 1: Povzetek v Slovenščini

Sončnično olje je globalno znano jedilno olje, ki je skozi zadnja desetletja obdržalo močan tržni delež na izjemno konkurenčnem trgu rastlinskih olj. Povpraševanje po jedilnih oljih se je v zadnjih desetletjih na svetovni ravni močno povečalo. Sončnica ostaja tretja najbolj pridelana oljnica na svetu, medtem ko je sončnično olje četrto najbolj proizvedeno olje na trgu rastlinskih olj. Čeprav se sončnice kot kulturne rastline gojijo po celem svetu, je kar dve tretjini proizvodnje koncentriranih v Evropi, kjer izstopata Ukrajina in Rusija kot največji proizvajalki (Pilorgé, 2020).

V zadnjih letih so krize, predvsem pandemija in vojna v Ukrajini, močno vplivale na inflacijo cen in zaznamovale dinamiko trga sončničnega olja. Poleg drastično višjih cen, proizvajalce najbolj skrbi primanjkljaj ponudbe. Ruska invazija na Ukrajino je močno posegla v oskrbovalne in dobavne verige skoraj polovice svetovnega izvoza sončničnega olja. Ukrajina, ki je največja svetovna izvoznica sončničnega olja, je na vojnih območjih utrpela velike škode na kmetijskih površinah, kar se zadnji dve leti kaže v pomanjkanju olja in visokih cenah. Na trgu nastale vrzeli zapolnjujejo druga olja oziroma nadomestki, kot sta palmovo in sojino olje (Glauber in drugi, 2022).

Globalni trendi v zadnjih letih spreminjajo potrošniške navade pri nakupu jedilnih olj. Sodoben življenjski slog večine ljudi v razvitih državah spodbuja potrošnike k iskanju zdravega načina življenja, prehrane ter večji prehranski ozaveščenosti (Holland, 2023). Glede na način procesiranja, olja delimo na rafinirana in nerafinirana olja. Najbolj razširjena olja z najširšo možnostjo industrijske uporabe so rafinirana olja, ki pa so za človeško zdravje najmanj koristna. Večjo hranilno vrednost, s tem pa tudi višjo ceno, pripisujemo nerafiniranim oljem, kot so tradicionalno stiskana in hladno stiskana olja. Raziskava lokalnega trga v okviru magistrske naloge je pokazala, da je na slovenskem trgu najpogosteje prisotno rafinirano sončnično olje, sledi mu hladno stiskano sončnično olje, medtem ko je tradicionalno stiskano sončnično olje redkost na slovenskem trgu.

Lokalno podjetje, ki si želi zrasti iz majhne kmetije, želi ponuditi nerafinirano, tradicionalno stiskano sončnično olje slovenskim potrošnikom kot novost na slovenskem trgu. Rezultati anketnega vprašalnika v okviru magistrske naloge so pokazali, da respondenti cenijo kvalitetna olja, ki imajo pozitivne učinke na človeško zdravje in so za takšna olja tudi pripravljeni odšteti več denarja. Po drugi strani pa se je izkazalo, da sta trenutna ozaveščenost in znanje respondentov o razlikah med različnimi vrstami olja zelo pomanjkljiva. Tu novo podjetje vidi veliko priložnost in potencial pri lansiranju svojega inovativnega olja, z uvedbo spletne trgovine. S pravilnim pristopom, marketinško strategijo in ozaveščanjem potencialih kupcev o koristnih lastnostih proizvoda podjetje verjame, da lahko doseže dobre poslovne rezultate z močno prodajo v vseh slovenskih regijah.

Appendix 2: Survey questionnaire

Q1 - Ali pri pripravi različnih jedi uporabljate različna olja?

○ Da, pri pripravi različnih jedi uporabljam različna olja.

○ Ne, za vse jedi uporabljam enako olje.

○ Včasih da, včasih ne.

Q2 - Ali pri pripravi jedi razlikujete med toplo in hladno stiskanimi olji?

○ Da, pri pripravi različnih jedi uporabljam različna olja.

○ Ne razlikujem in ne poznam razlike.

○ Ne razlikujem, vendar poznam razliko.

○ Včasih da, včasih ne.

Q3 - Ali pri nakupu jedilnih olj razlikujete med rafiniranimi in nerafiniranimi jedilnimi olji?

○ Da.

○ Ne razlikujem in ne poznam razlike.

○ Ne razlikujem, vendar poznam razliko.

○ Včasih da, včasih ne.

Q4 - Katero olje uporabljate pri kuhanju/pečenju?

Možnih je več odgovorov

☐ Oljčno

☐ Sončnično

☐ Repično

- [ ] Kokosovo
- [ ] Sezamovo
- [ ] Bučno
- [ ] Orehovo
- [ ] Laneno
- [ ] Drugo:

Q5 - Katero olje uporabljate pri cvrtju?

Možnih je več odgovorov

- [ ] Oljčno
- [ ] Sončnično
- [ ] Repično
- [ ] Kokosovo
- [ ] Sezamovo
- [ ] Bučno
- [ ] Orehovo
- [ ] Laneno
- [ ] Drugo:

Q6 - Katero olje uporabljate za pripravo solat?

Možnih je več odgovorov

- [ ] Oljčno
- [ ] Sončnično

- [ ] Repično
- [ ] Kokosovo
- [ ] Sezamovo
- [ ] Bučno
- [ ] Orehovo
- [ ] Laneno
- [ ] Drugo:

Q7 - Kako pomembne so vam naslednje lastnosti pri nakupu jedilnega olja:

	Nepomembno	Manj pomembno	Vseeno mi je	Bolj pomembno	Zelo pomembno
Kvaliteta olja.	○	○	○	○	○
Cena olja.	○	○	○	○	○
Znamka olja (podjetje oz proizvajalec).	○	○	○	○	○
Slovenski/lokalni izdelek.	○	○	○	○	○
Pakiranje v steklenici.	○	○	○	○	○
Izgled izdelka.	○	○	○	○	○
Vpliv olja na zdravje in na določene bolezni.	○	○	○	○	○
Certifikati (BIO, Izbrana	○	○	○	○	○

kakovost, naravno ipd.)					
Priznanja in nagrade (testi potrošnikov, Dobrote slovenskih kmetij ipd.)	○	○	○	○	○
Možnost nakupa preko spleta.	○	○	○	○	○
Možnost nakupa v fizični trgovini.	○	○	○	○	○

Q8 - Ocenite koliko se strinjate s spodnjimi trditvami.

	Sploh se ne strinjam	Ne strinjam se	Ne vem	Strinjam se	Zelo se strinjam
Hladno stiskana olja so bolj kvalitetna od toplo stiskanih.	○	○	○	○	○
Nerafinirana olja so bolj kvalitetna od rafiniranih.	○	○	○	○	○
Cena olja je odraz kvalitete olja.	○	○	○	○	○
Za kvalitetno olje sem pripravljen/a	○	○	○	○	○

odšteti več denarja.					
Kvalitetno olje ima pozitivne učinke na zdravje.	○	○	○	○	○
Oljčno olje je najbolj kvalitetno olje.	○	○	○	○	○
Sončnično olje je primerno samo za cvrtje.	○	○	○	○	○

Q9 - Ali ste že slišali za nerafinirano sončnično olje?

○ Da, sem že uporabljal/a.

○ Da, vendar še nisem uporabljal/a.

○ Ne, prvič slišim.

(1) Q9 = [1]

Q10 - Koliko bi bili pripravljeni plačati za liter slovenskega nerafiniranega olja?

Opomba: Nerafinirano sončnično olje je naravno olje, z izrazitim okusom in vonjem, ki ni industrijsko obdelano in je po kvaliteti in uporabi primerljivo z ekstra deviškimi olji.

€

(2) Q9 = [2, 3]

Q11 - Ali bi bili pripravljeni poskusiti slovensko nerafinirano sončnično olje pri pripravi jedi/kuhanju?

○ Da, želim si poskusiti.

○ Mogoče, če bi izvedel/a več o produktu.

○ Vseeno mi je.

○ Ne.

IF (3) Q11 = [3, 2]

Q12- K nakupu bi me prepričalo:

Možnih je več odgovorov

☐ Več informacij o samem izdelku.

☐ Informacije o kvaliteti olja, sestavi in učinku na zdravje.

☐ Če bi lahko izdelek najprej videl/a.

☐ Priporočila znancev.

☐ Informacija o ceni.

☐ Drugo:

(4) Q11 = [3, 2, 1]

Q12 - Koliko bi bili pripravljeni plačati za liter slovenskega nerafiniranega sončničnega olja?

Opomba: Nerafinirano sončnično olje je naravno olje, z izrazitim okusom in vonjem, ki ni industrijsko obdelano in je po kvaliteti in uporabi primerljivo z ekstra deviškimi olji.

€

Q13 - Hvala za izpolnitev ankete. Za konec prosimo še za nekaj podatkov statistične narave.

V katero starostno kategorijo spadate?

○ do 24 let

○ 25-40 let

○ 40-64 let

○ 65 let ali več

Q14 - V kateri regiji prebivate?

Statistične regije Slovenije

○ Pomurska regija

○ Podravska regija

○ Koroška regija

○ Savinjska regija

○ Zasavska regija

○ Spodnjeposavska regija

○ Jugovzhodna Slovenija

○ Osrednjeslovenska regija

○ Gorenjska regija

○ Notranjsko - kraška regija

○ Goriška regija

○ Obalno - kraška regija

Q15 - Spol:

○ Moški

○ Ženski