

NARRATIVES OF KUMIS CONSUMPTION AND PRODUCTION  
IN CONTEMPORARY KAZAKHSTAN

ВЗГЛЯДЫ НА ПОТРЕБЛЕНИЕ И ИЗГОТОВЛЕНИЕ КУМЫСА В  
СОВРЕМЕННОМ КАЗАХСТАНЕ

ҚАЗІРГІ ҚАЗАҚСТАНДА ҚЫМЫЗ ТҰТЫНУҒА ЖӘНЕ  
ДАЙЫНДАУҒА КӨЗҚАРАС

by

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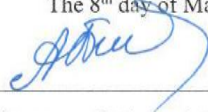
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**Abstract**

Kumis, a beverage made with fermented mare's milk, is a part of national cuisine, symbol of health, and unique cultural identity in modern Kazakhstan. It is also a part of the traditional cycle of horse husbandry and the modern small business production that thrives in the countryside around big cities. In my study, based on the in-person and online survey of kumis consumers and on in-depth interviews with kumis producers in the two major cities of Kazakhstan, Astana and Almaty, I explore the dynamics of kumis supply chain and customer behavior and discuss how modern-day city dwellers make choices about kumis consumption while imagining the landscape, seasonality, and "natural-ness" of kumis production.

**Keywords:** kumis, urban Kazakhstan, mare's milk, customer behavior

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I dedicate this thesis to my family, who were my emotional support in my Master's degree adventure, to the Embassy of the Republic of Kazakhstan in Mexico for introducing me to the wonders of Kazakh language, traditions, and legacy, and to Kazakhstan for giving me the awesome opportunity to receive high-quality education in the heart of Eurasia.

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# **Narratives of Kumis Consumption and Production in Contemporary Kazakhstan**

## **Introduction**

In my study of kumis consumption in the major urban centers of the Republic of Kazakhstan I want to understand the motivations of those Kazakhstani urbanites who consume kumis in their daily lives. What is the reason that the consumers come to drink kumis: as a product of personal nourishment to obtain a state of well-being, as a trendy product consumed by the younger sectors of the population, and/or as a marker of identity that could lead the people to claim closer ties to the motherland and its traditions?

My initial interest studying kumis production, consumption and commercialization in the Republic of Kazakhstan began as part of my Bachelor's dissertation project where I studied the chemical and nutritional properties of fermented food products produced in Eurasia. Due to my academic background in Food Technology, I wasn't able to explore issues related to ethnography and entrepreneurship of kumis since my research was limited only to describing the microbiological and chemical properties of the beverage.

I chose kumis as an object of my study because of its strong connection to Kazakh cuisine, history, and oral tradition, as well as due to its status as a product that is available for consumers to purchase in different spaces such as bazaars, in

*auyls*<sup>1</sup>, *kumishanas*<sup>2</sup>, at the supermarkets, and in boutiques with “made in Kazakhstan products”.

Observing the interactions of customers and sellers of kumis, and the growing interest of persons of non-Kazakh nationality to start including kumis in their diets made me have the preliminary assumption that kumis, as a traditional product, was experiencing a growth in consumption. Therefore, this was the main incentive that made me decide to explore through the development of this research project if indeed an increased interest in buying and consuming kumis exists for urban settlements of Kazakhstan. Because of the scope of this research project was a bit limited, I will focus only in describing the supermarket, bazaar and the *kumishana* as spaces of selling and consumption selected by people from urban areas to purchase the beverage, as I did not have time to fully investigate these interactions in the *auyls*.

When conducting this research, I often surprised the people I encountered with my interest in kumis. In some instances, before I began speaking there were people who assumed I was a local due to my appearance, most notably in the eyes and shape of my face. Before hearing me speak, people would sometimes take me for a Kazakh citizen. Sometimes, their first interaction with me was responding to me in the Kazakh language despite me approaching them in Russian during our first contact. As soon as they understood that I spoke with foreign accent, they were intrigued about my origins and started asking me where I come from and what I liked about Kazakhstan. The people I met at the bazaars, supermarkets, and *kumishanas* were often intrigued because I am an international student in Kazakhstan, and a

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<sup>1</sup> Auyl (in Kazakh Cyrillic Alphabet: Ауыл) is a word that means "village".

<sup>2</sup> Kumishana (in Kazakh Cyrillic Alphabet: кумызхана) is a word that describes a place in the form of a yurt (traditional house of Central Asia and Mongolia), a store or a restaurant that sells kumis and shubat to the customer on request.

researcher who is not Central Asian, who is from a country that doesn't count the consumption of fermented milk products as part of its national cuisine and I had all of these questions about kumis.

I must confess that before visiting my research sites I had some concerns about my personal safety when visiting the bazaars and *kumishana* facilities, especially the facilities located on the peripheries of the cities of Almaty and Nur-Sultan. These concerns probably stemmed from a personal bias connected to listening to some acquaintances talk about the bazaar as being a risky place for a woman to visit by herself during the afternoons. Therefore, this made me decide to visit the bazaars and *kumishana* facilities in the early morning using public transportation or hiring a taxi.

Another issue of concern was that my command of the Russian language was only at the intermediate level. I was afraid of not being understood by the sellers and producers of kumis during the interview process. In order to overcome this, I enrolled in the intensive Russian lessons where I had an opportunity to increase my proficiency in the Russian language in a two-month program offered by the university. In the mornings I attended Russian language, and, in the afternoons, I visited my research sites to collect survey responses and oral testimonies and at the same time, practice intensively my newly acquired speaking skills. Since I was interested in listening to the stories and experiences related to kumis, the sellers and producers of kumis were friendly to me due to my initiative in contributing to the promotion of the healthy benefits of the beverage, encouraging the consumption of the beverage, and preserving the Kazakh culinary legacy for the future generations to come.

One of the goals of this thesis project is to acquaint students and scholars from the areas of Food Anthropology and Cultural Tourism and Marketing about the main actors behind kumis selling and production in contemporary Kazakhstan, the relationship of the real and imagined chain of production to consumption, the selling and consumption of kumis, the consumer's perceptions towards kumis, and the opportunities and challenges the market is facing in the diversification and expansion of food choices related to kumis as a regionally specific product of the national cuisine. I would also like for this project to be used as a tool of raising awareness of the future generations of the Republic of Kazakhstan in preserving the consumption of kumis, and for specialists in the cultural tourism area to develop kumis as a trademark for the promotion of a Kazakh culinary identity.

To provide in detail the current state of the kumis production and consumption in the main city hubs of Kazakhstan, the present document is divided into three chapters: the first chapter will discuss the relationship between imagined and real places of kumis production, selling and consumption in contemporary Kazakhstan, the second chapter will focus in describing the connection existing between kumis production and seasonality, while the third chapter will provide the profiles of contemporary consumers of kumis in terms of the sensorial experiences they are seeking and its connection to culture and family. For the next section, I will briefly present the research methods used for data collection and itinerary of events for conducting the project.

## **Methodology**

### **Research methods**

For the purpose of data collection, the present project used a combination of ethnography, grounded theory, and quantitative research methods. The ethnographic component was explored in the form of participant observation and interviews at the bazaars, supermarket, and the *kumishanas*. Before approaching my interviewees and the people from whom I collected responses for the in-person survey, I carefully observed the verbal and non-verbal interactions between the customers and sellers when promoting and purchasing the product, the preferred language of use between sellers and customers, the type of customers that visit the marketplaces, predominant sex and age of sellers, and their relationships to one another. The grounded theory approach was used in the form of open coding of interviews obtained from producers of kumis: one producer in Nur-Sultan and one in Almaty to contrast if there are regional differences in kumis production and consumption and what is the connection of the population with the beverage in terms of their region of origin and the city they live in nowadays. Also, it was important to understand what prompts the local producers and sellers to turn kumis as a profession for their income and personal development. I was curious to find out if the kumis business for the producers and sellers is a business created through family legacy or if some people entered into the business at a later stage of their lives after being encouraged to promote kumis to achieve connection with their cultural roots. More details about the producers' motivations to become sellers and promoters of kumis will be discussed in Chapter 2.

## **Schedule**

The summer research fieldwork was divided into four stages. The first stage consisted of conducting an in-person survey with customers purchasing kumis from the milk products section of a supermarket. The chosen supermarket was Alma in Nur-Sultan due to its short distance to campus and a high influx of customers during the weekends attracted to the low prices of the merchandise. Responses to the in-person surveys were collected between May 27 and May 30, 2018. Inside the supermarket, 20 responses from a 15-question survey were collected, 17 in Russian language and three in the Kazakh language. This part of the project made me have a broader initial understanding about the desires that lead customers to buy the product, what they like the most about it, where the contemporary population of Kazakhstan usually buys kumis, what different brands of kumis means to consumers, and if there were preferred places of consumption. Speaking about consumption, I wanted to know from the sellers, producers, and consumers with whom the beverage is usually shared, at what time of the year it is more widely consumed, and the reasons why people make the choice to buy and consume kumis during their preferred times of the year.

The second stage took place between July 1 and July 23, 2018 and consisted of doing participant observation at the bazaars, getting an interview with a producer of kumis, collecting in person survey responses from bazaar customers, and interviewing sellers of kumis from the three bazaars in Nur-Sultan (i.e., Eurasia, Artyom and Shanhai). Before collecting in-person survey responses and seller interviews, participant observation was done in the bazaars in order to describe the selling strategies used by the vendors to attract the customers' attention, describe the distribution of the milk products' sector, know the prices of kumis, and take a look

at the different presentations purchased by the customers, and to see approximately how many liters of kumis the clients usually took home. After doing the participant observation, I conducted interviews with the sellers of kumis in the Russian language. The approach I took for recruiting participants among the sellers at the bazaar was through the snowball method. My recruitment strategy was to position myself as a visitor at the bazaar, try and purchase some kumis from the stall, and then have informal conversations with the sellers. During the interviews, I asked the sellers about their thoughts towards the drink, the place of origin of their kumis, what they enjoy the most about their jobs, and the most importantly part, what kumis means for them speaking in terms of its relationship with Kazakh culture and tradition? In total, I interviewed eight sellers of kumis. Three sellers were interviewed in Eurasia, three in Big Shanhai, while two interviews were collected from Artyom. The testimonies of sellers of kumis and perceptions of kumis consumption in contemporary Kazakhstan will be described and analyzed in Chapters 1 and 3. For me, it was important to visit the *bazaar* to collect first-hand testimonies that complemented the information explored in the literature review about kumis production and selling in Kazakhstan.

Once new elements emerged from the interviews after the open-coding process, I decided to have an interview with a producer of kumis, therefore, I proceeded in contacting a producer of kumis in Nur-Sultan. The person I contacted is called Bakhyt. He acts as the main producer of the kumis brand “Qazaq House”, a brand that has some presence in the local market of Nur-Sultan. His kumis brand is sold at the Galmart supermarket, in the bazaar “Eurasia”, and the restaurant “Shynar” located in the neighborhood “Koktal”. I contacted him through my advisor and agreed to have a meeting at his place. At his home we conducted a 35-minute in-

depth interview where I was able to learn specific details about kumis production such as the location of mare's farms close to Nur-sultan city, the steps to prepare kumis, in which places of the city the kumis produced at the farms is distributed, and also, clarify the in-person survey answers related to exploring the connection between the taste of kumis and seasonality.

The third stage took place outside of Nur-Sultan between July 28 and August 1, 2018. During this process, I traveled to Almaty and visited the Zeleniy bazaar (i.e., the Green Market), Saryarka bazaar, a supermarket (i.e., Magnum in Gagarin street), and a *kumishana* located in the Southern part of the city (i.e., going by the name of "Mes"). During my first day in the city of Almaty, I conducted a three-hour participant observation of the Green Bazaar's surroundings where I took pictures of the facilities and became acquainted with the bazaar's space. I was interested in finding out about how customers approach sellers of kumis in the bazaars, how the language of communication in Almaty might compare to the language of communication used in Nur-Sultan, the types of clients that visit the bazaar (i.e., proportion of Kazakh and non-Kazakh), as well as to learn the histories behind the sellers, specifically how they chose their profession. During the second day of my stay, I collected ten in person survey responses from the Green Bazaar's consumers. On the third day, advised by the receptionist of the hotel I stayed in, I visited Saryarka bazaar where I interviewed a person who acts both as producer of kumis and a seller in the bazaar to gain insight into of the kumis market from a person involved both in production and promotion of kumis, so that I could compare this perspective with that of persons who only sell kumis but do not produce it themselves. Also, the experience of interviewing the producer of kumis in Saryarka bazaar gave me a picture about the different types of business involved in the selling of kumis, as this

individual highlighted the *kumishana* as another place in the city that caters to the selling of kumis. After the visit to Saryarka, I did research on social media (Instagram) to find out how many *kumishanas* existed inside the city of Almaty and which businesses were the most popular ones outside the city. During the fourth day, I visited a *kumishana* going by the name of “Mes” located on Gagarin avenue close to Mega Alma-ata. In this *kumishana*, I collected an interview from the wife of a kumis producer who indicated to me that the kumis they sell comes from a *fazenda*<sup>3</sup> located three hours away from Almaty. Through this interview, she provided me with insights related to the frequent consumers that visit the *kumishana* and the presentations they take home. On the fifth day, which marked my last day of stay in the city, I bought kumis from the Green Bazaar, Saryarka, and at Sydyk camel milk gourmet store. The purpose of buying kumis from different parts of the city was to be able to do a degustation experiment when I returned to Nur-Sultan at Nazarbayev University with consumers of different ages and professional backgrounds. The experiment was done to learn about the types of properties consumers search for in drinking the best kumis, and what the sensorial properties preferred by the customers can tell the marketing departments of kumis companies, so that they can target products based on the personal preferences of people belonging to different generational groups. On August 2, I returned to Nur-Sultan with my kumis purchased in Almaty. To contribute to preserving the quality and sensorial properties of the kumis I bought, I decided to return by airplane instead of taking the train. After reaching campus, the Almaty samples were preserved in the fridge of my dormitory at 4 °C until the day of the degustation experiment. The same day of my return, I went to buy kumis from the bazaars of Nur-Sultan where I collected the survey

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<sup>3</sup> Fazenda is the name used in Russian language to denote a farm where mares are milked.

responses: Artyom and Big Shanhai. Also, I bought a popular kumis brand in Nur-Sultan (Zhana-arka) from Alma supermarket. In this way the experiment would have consumers taste products from both Almaty and Nur-Sultan, from both supermarkets and bazaars.

On August 3, 2018, the degustation session was conducted at Nazarbayev University campus in a classroom booked at the School of Humanities and Social Sciences. In total, 11 participants between the ages of 22-40 years old were recruited through a corporate email sent to the student and staff community with a description of the project in English, Kazakh, and Russian. The degustation experiment was intended to be a blind taste test for the consumers. To do this, I code the kumis samples by assigning a random set of numbers to identify the source's sample brought from the various places of study in Almaty and Nur-Sultan. The codes used for the Nur-Sultan's samples were 11 for the commercial brand "Zhana-arka", 12 for the sample coming from Artyom, and 13 for the kumis bought at Big Shanhai. For the case of the Almaty's samples, the following codes were used: 121 for the commercial brand "Sarzhailau altai", 122 for the sample bought at Saryarka bazaar, while the code 123 was given to the kumis acquired at the Green Bazaar. The testers, who were both students and staff members from Nazarbayev University were required to assess the level of enjoyment of the beverage by assigning a grade in the hedonic scale of 1-9 to each one of the samples. According to **Pereira da Silva (2015)**, a Brazilian food engineer who studies rheological and sensorial properties of fermented food products, fermented milk products should be assessed using the affective method by Acceptance Testing with a 9-point hedonic scale. In this hedonic scale, 1 represents "extremely disliked it", 2 "dislike it very much", 3 "dislike it

moderately”, 4 “dislike it slightly”, 5 “neither like not dislike”, 6 “like it slightly”, 7 “like it moderately”, 8 “like it very much”, and 9 “I extremely like it”.

Since no sensorial study related to evaluating kumis was found in the literature, the sensorial attributes selected for judging the quality of the drink were taken from the responses collected by the clients at the supermarket and bazaars of both Nur-Sultan and Almaty. Since most people voted for freshness, taste, and acidity as the properties that define a “good quality kumis”, these three qualities were the ones consumers were asked to assess for all the samples. The consumers’ assessment of these attributes was used to do the statistical analysis of their sensorial preferences. Afterwards, in order to see if there was statistical significance in their preferences, an ANOVA analysis was used to compare the relationship between place where the kumis came from and the consumers’ perception of the taste of kumis. I formulated two hypothesis (H0 and H1), where H0 symbolized that there is no significant difference in consumer perception of kumis bought either from the bazaar or the supermarket, while H1 implied that there is a difference between the kumis bought in bazaar from the one bought at the supermarket.

The next stage of the project took place between November 28 and December 1 in Almaty. I decided to return and collect more data, do interviews with kumis producers in the villages close to the city, and do observation of the availability of kumis stock inside the supermarkets. The purpose of visiting Almaty in winter was to learn about the state of the kumis market, its commercialization and availability in the bazaars and supermarkets during that time of the year. For this fieldwork activity, I returned to the Green bazaar to document how many sellers were selling kumis in winter in comparison to the summer period, ask the sellers if people buy and consume the drink at that time, and how the drink is produced and distributed in

the villages close to the city. To achieve this purpose, I visited one village located in the west part of Almaty called Koksay. I found about this village while researching on the olx.kz platform about *kumishanas* located inside Almaty or within the Almatinskaya and decided to visit the oblast to conduct interviews about kumis production in winter. Checking one advertisement about tours outside Almaty that included horseback riding and tasting of Kazakh traditional cuisine, I found about the *kumishana* Boz Bie in Koksay. I decided to go visit this place, as the concept that was promoted on their Instagram page was totally different from that of the previous *kumishana* I visited in the city during the summer. Boz Bie includes a farm and restaurant that can be used for recreation, to host festivals, and targeted at foreign visitors. Boz Bie also has a catering service with Kazakh specialties for the city. In Boz Bie, I had a 32-minute interview with a producer of kumis in the Kazakh language where I learned about the organization of the *kumishana* as a business, which experiences his *kumishana* clients *seek*, and what the profile is of the clients that visit this business. Testimonies from this interview on the topics of seasonality and its relationship to business development will be provided in chapter 2. Finally, after coding the interviews with the producers and sellers of kumis, in February 2019 I proceeded to design a survey to taste consumers' preferences in social media by sharing the survey's link in WhatsApp, Facebook, and Instagram platforms. The survey was uploaded in the Qualtrics platform and consisted of 20 questions where 13 questions were multiple choice and five questions were designed as open-ended questions. The proposed questions for the survey were the following:

**Multiple choice**

- What is your sex?
- How old are you?
- Which language do you speak at home?
- Please tell us the place you were born
- Where do you live now?
- Please indicate your favorite place to drink kumis
- Which season do you consider the best to drink kumis?
- Which is your favorite type of kumis? When you buy kumis the most important aspect is...
- Which is your favorite kumis brand?
- Why do you like your favorite kumis brand?
- Which kumis presentation do you usually buy?
- Monthly income in tenge

**Open-ended**

- Please pick all the seasons when you drink kumis
- What do you like about kumis?
- You buy kumis because...
- Why do you drink kumis?
- Which places in the city you recommend buying kumis?

Before proceeding to describing the motivations and perceptions that lead clients to consume kumis, the purpose of the following chapter, is for the reader to get acquainted with the places of production, selling and consumption of kumis in contemporary Kazakhstan by analyzing the conversations of consumers, sellers and producers of kumis and trace parallels and differences between imagined and real ideas about the production and distribution chain, and how this relates to the spaces of kumis selling and consumption in Nur-Sultan and Almaty. This will help the reader to understand how the kumis supply chain works and what is the significance of kumis for the modern Kazakh population in terms of defining if it has a potential to become a culinary brand for the republic of Kazakhstan in the future.

## Chapter 1. The places of kumis in urban Kazakhstan

### Current state of the mare's milk industry and kumis in Kazakhstan

According to **Rasmussen (2014)**, an American chemist who studies fermented alcoholic beverages, kumis is defined as a fermented beverage made with mare's milk product of a mixed lactic acid with alcoholic fermentation. At first it may seem that defining kumis only through its chemical properties does not give enough attention to the cultural and historical legacy of kumis preparation and consumption. Defining kumis as a product of chemical transformation, however, is a topic fruitful for further discussion in the 21<sup>st</sup> century due to society's interest in using food innovations as therapeutic agents to cure diseases. In the last 15 years, due to the surge of healthy eating practices around the world, the practicing of milking of mares' has spread beyond Eurasia to countries such as Belgium, Hungary, the Netherlands, Italy, Austria, and Germany. But what about the mare's milk sector in Kazakhstan? **Nurtazin (2016)**, a Kazakh biologist who studies the bioresources and dairy production of Kazakhstan, says that nowadays the farms of the country make a variety of secondary products from mare's milk: yogurt, cream, milk powder, and tablets. The fresh milk obtained from mare's is called *saumal*. The composition of mare's milk is closer to human milk compared to that of other ungulates therefore, research centers in Kazakhstan have studied the chemical composition of the liquid in depth, specifically which vitamins, minerals, and proteins could be of benefit for maintaining a good state of health.

Several articles in the area of Nutrition and Food Technology have been selected to explain the current state of the mare's milk production. Most of the scholarship chosen to develop the literature review for the present project deals with

explanations of the industrial production of mare's milk and the chemical and nutritional properties associated to the product. For instance, **Park (2017)**, a Korean food scientist who studied the chemical properties of non-bovine animals, reports that mare's milk has been used mainly in Central Asia and Mongolia for the manufacturing of kumis and not for the making of other secondary products. Nevertheless, **Nurakhova (2017)**, a Kazakh economist specialized in developing marketing strategy models for the dairy sector, contradicts this claim highlighting that the mare's milk industry through the introduction of modern equipment and partnership with foreign companies has started to produce innovative products outside the niche of kumis. According to the Food and Agriculture Organization (FAO), the world population of horses, as of 2014, was estimated in 58 million heads where the Eurasian space (constituted by Russia, Kazakhstan, and Mongolia) has between 1,000,000 to 4,995,599 horses in estimation distributed in rural and urban settlements of the republic. For the statistical analysis, **Nurakhova (2017)** showed that the population of horses has increased since the year 2009 until the year 2017. During the year 2009 the number of horses in Kazakhstan was estimated in 1,370,500 heads, in 2010 it increased to 1,438,700 heads, for the year 2013 there were 1,528,300 heads, while for the year 2016 and 2017 the number of horses in the republic was kept in 2,017,700 heads and 2,119,080 heads, respectively.

**Nurakhova (2017)**, highlighted in her scholarship that even though Kazakhstan did not regain the agricultural performance level it had before the 90's decade, it hasn't been a challenge to boost the output of the farming sector thanks to the implementation of the ABI Growth Government Program for 2017-2021 aimed at the efficient utilization of the country's land resources. According to the e-

government portal of the Republic of Kazakhstan <sup>4</sup>, this program was implemented with the purpose of promoting productive employment of the population and involvement of citizens in entrepreneurship. The objectives of the program “Development of Productive Employment and Mass Entrepreneurship for 2017-2021” applied to the farming sector are the following: Teaching of the basics of entrepreneurship, assistance in providing employment for the unemployed and self-employed, and expansion of microcredit in the countryside and in the city. It was reported by the Annual Bank Investment (ABI) Growth Government Program that for the period of 2016-2018 the households’ dependence on livestock products in Kazakhstan was calculated at 71%, where 15% of the products were produced by peasant and private farms and 13% fell to agricultural enterprises. Owing to the implementation of the various subsidized purchasing programs such as “Sybaga” (i.e., focused on cattle), “Kulan” (i.e., focused on horses), and “Altyn Asyk” (i.e., focused on sheep), there has been a stable increase in the number of livestock of all types per year, except for poultry and pigs. Livestock breeding is an important branch of Kazakhstan’s agriculture, which provides about 40% of its gross output. As reported by **Nurakhova (2017)**, the main products of horse breeding are meat and milk which are consumed by the population in the form of *saumal*, *kumis*, *kazy*, *zhaya*, *besbarmak*, and *kuyrdak*.

Before doing fieldwork, I was interested in finding out if there was a preference by the local producers of kumis or the industries towards choosing a horse breed in specific for milking purposes. **Alavi (2017)**, an Iranian veterinarian from the Islamic Azad University, described that in comparison with the milk of other farming animals such as sheep, cows, camels, or reindeers, mare’s milk differs in



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<sup>4</sup> E-government program: [http://egov.kz/cms/en/articles/zanyatost\\_2020](http://egov.kz/cms/en/articles/zanyatost_2020)

content solids according to the horse breed, age, diet, and climatic conditions. Another scholar, **Park (2008)**, a Korean food technologist specialized in the study of physicochemical properties of non-bovine mammals reports that milk from species such as cows or goats presents differences in taste and fat content according to the breed used for transformation into secondary products such as fermented drinks, cheese, cream, or butter. So, it seems that breed can affect the quality and taste of products, as well as the age and diet of the animals, and the climate where the animals are raised.

Considering all these things, some people might wonder which varieties of horses are most commonly used for milking purposes in the Eurasian steppes. In order to solve this question, **Akimbekov (2012)**, a Kazakh veterinarian, who has studied the diversity of horse species in Kazakhstan, provides the reader with an overview about the morphological characteristics of horses according to their race and which varieties are used for milk production, as a part of hippic culture, as a mean of transportation, and as a spiritual entity for the cultures of the Eurasian steppes. According to his findings, the types of horses used for milking purposes in the republic of Kazakhstan are the following: Bashkirskaya, Buryatskaya, Donskaya, Kazakhstanskaya zhabe, Kirguiskaya, Kushumskaya, Lokaiskaya, Orlovskaya, and Yakutskaya (**Table 1**).



**Table 1.** Races of horses in Kazakhstan used for milk production.

Horse race	Milk produced by mares (L)	Characteristics
Bashkirskaya	1780	<p><b>Height:</b> 142-145 cm.</p> <p><b>Morphology:</b> Fleshy and straight neck of medium length, broad-bodied, wide and deep chest, short, rounded and deflated croup, thick bangs, short and bony limbs, red suit.</p> 
Buyatskaya	1700	<p><b>Height:</b> 150 cm.</p> <p><b>Morphology:</b> Medium neck, short cannon bones, chestnut, bay, gray, and black coat color, strong back and well-developed croup.</p> 
Donskaya	1727	<p><b>Height:</b> 155-160 cm.</p> <p><b>Morphology:</b> Bay, black, gray or chestnut colored, clean head with a dished profile, wide and deep chest, long, well-muscled, and clean legs with broad joints, strong tendons, and tough hooves.</p> 

(continued)

Horse race	Milk produced by mares (L)	Characteristics
Kazakhstanskaya zhabe	2173	<p><b>Height:</b> 144-180 cm.</p> <p><b>Morphology:</b> Proportional head with a broad frontal part, small ears, well-developed jaw muscles, normal length neck, muscular withers, round rib cage, and short scapula.</p> 
Kushumskaya	2310	<p><b>Height:</b> 154-157 cm.</p> <p><b>Morphology:</b> Large head, long and flat back, broad and deep chest, bay and chestnut colored, well-muscled croup.</p> 
Lokaiskaya	1518	<p><b>Height:</b> 145-155 cm.</p> <p><b>Morphology:</b> Coats with curls, short head with a straight profile, medium length neck, straight, wide and short back, deep and broad chest, solid legs, and hard hooves.</p> 

(continued)

Horse race	Milk produced by mares (L)	Characteristics
Orlovskaya	1776	<p><b>Height:</b> 161.4-164 cm</p> <p><b>Morphology:</b> Big head, large expressive eyes, with long arched neck set high, prominent whitters, broad croup, muscular body, and strong built legs.</p> 
Yakutskaya	1536	<p><b>Height:</b> 136 to 140 cm</p> <p><b>Morphology:</b> Bay, gray or light dune in color, dark dorsal stripe, dense coat.</p> 

The testimonies of kumis producers in Nur-Sultan and Almaty agrees with the information about horse breeds used for milking in Kazakhstan provided by **Akimbekov (2012)**. In Nur-Sultan I interviewed a producer called Bakhyt who acts as the owner of Qazaq House who commented to me that there is not a specific horse breed used for milking purposes, any type of horse can be used for this activity. However, the producers usually consider two breeds as the most predominant horse races in Kazakhstan: Zhaby and Orlovskaya. The producers described Zhaby's breed as smaller in size and as producing a sweeter flavored milk in contrast to the Russian mare. From the two producers I interviewed speaking about what they know more generally about production in Kazakhstan, it seems that Zhaby is the preferred horse for making kumis due to it being an endemic race in Kazakhstan.

Another interesting fact about kumis production came from these two interviews. It is important to highlight that not all the milk obtained from mares goes to the production of kumis. As I learned from local producers, some portion of the day's milk is needed to feed the foals in both the commodity farms and those owned by smaller independent producers. It seems that the ratio of milk that goes to kumis production depends on the scale of operation. At Qazaq house in the outskirts of Nur-Sultan, Bakhyt notes that the milk used specifically for kumis production is between 30%-60% of the total milking per day. This might be a standard ratio for other commodity farms. Whereas, I observed from a smaller scale independent producer named Yerubay in Koksay village in Almaty that an estimated 75-80% is sucked by the foal as part of their diet and only 25% is destined to produce kumis. Both types of production are essential to the market.

According to reports given by the *Eurasianet*<sup>5</sup>, agriculture and farming should be one of the most important agendas for the government to consider in order to foster economic growth and diversify the national economy in the upcoming years. *Eurasianet* reports that the government needs to consider not only the production of kumis but also, needs to support the production of other products made from horse such as facial masks, baby formula, creams, candies, and shampoo. Expanding the production of these secondary products could greatly contribute to creating a trademark for the Republic of Kazakhstan around "horse based" products, and this trademark could receive recognition not only locally but also possibly regionally, if such products were exported to neighboring countries in the future. For instance, the

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<sup>5</sup> "Kazakhstan: Horse Milk Gallops Into The Dairy Market.": <https://eurasianet.org/s/kazakhstan-horse-milk-gallops-into-the-dairy-market>

*Astana Times* <sup>6</sup> highlighted the inauguration of the biggest mare's milk farm in Kazakhstan in the Karaganda region with equipment coming from Germany through a partnership with the company "Kurgestut Hoher Odenwald" which is considered nowadays as the most important mare farm in Germany. Part of the innovation in this factory is to make the animals feel adapted to their environment without stressing them. The production stages proposed by the company include the fabrication of soap, baby formula, shampoo, body lotion and gel. This article notes that the main market is expected to be the largest urban settlements in Kazakhstan. This article highlights a potential growth for secondary products in the local market, but unfortunately the author didn't address if there are plans to promote such products abroad soon. Nevertheless, Karmalova, a correspondent from *Tengrinews* <sup>7</sup>, wrote about an entrepreneur called Galymzhan Meirambekov who opened a new plant to produce powdered milk using German technology of milk sublimation in order to contribute preserving milk's nutritious properties. His intention is to produce baby formula powder and fermented milk products such as kumis is to be exported abroad in order to cater the markets of Germany, France, The UAE, South Korea and China. It seems from the literature review that the market for such products really is growing in Kazakhstan and abroad.

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<sup>6</sup> "World's Largest Mare's Milk Processing Factory Launches in Karaganda.": <https://astanatimes.com/2015/08/worlds-largest-mares-milk-processing-factory-launches-in-karaganda/>

<sup>7</sup> "Mare's milk based infant food to be produced in Kazakhstan.": <https://en.tengrinews.kz/health/Mares-milk-based-infant-food-to-be-produced-in-Kazakhstan-254118/>

## **Perceptions of kumis production, selling and consumption**

Every urban Kazakhstani citizen who has consumed kumis in the big city and not in the *auyls* has probably faced the dilemma about how to decide where the best places to buy and drink the beverage in the city. When discussing about “urban spaces of kumis consumption” I will refer exclusively to the cities of Nur-Sultan and Almaty where I conducted my fieldwork and data collection. I chose to focus my project in these two cities due to their status as cultural, financial and social centers populated by multiple nationalities and persons coming from different regions of Kazakhstan. In researching the nature of kumis consumption, I decided not to categorize kumis as a product exclusively belonging to a Kazakh ethnic identity but to explore the idea that due to the diversification of the food marketplace after the collapse of the Soviet Union, kumis has become an accessible product to be found and purchased by people of all ages, ethnicities, and different socioeconomic backgrounds in malls, bazaars, or gourmet boutiques with “made in Kazakhstan products” (**Figure 1,2 3 & 4**). One piece of evidence that supports the idea that kumis acts as a cross-cultural food in post-Soviet Central Asia, was a testimony given by Akmaral, a sales representative from Daulet-Beket’s company at the Green Bazaar in Almaty. Akmaral is a woman in her 30’s of Kazakh ethnicity that enjoys promoting Kazakh traditions through cuisine despite herself not being born in a family of kumis producers. She has a background in education, specifically in the teaching of Kazakh language and history in middle school. Her interest towards taking the job of kumis promoter and seller was guided due to love for her motherland and the desire to promote cultural interactions among different minority groups in Kazakhstan. During the interview process, she highlighted that people belonging to other ethnicities guided by advice of their Kazakh friends or

acquaintances have decided to incorporate kumis as a supplement in their diet due to its health properties. During the interview, she emphasized the following:

Kumis is consumed by people from other ethnic backgrounds such as Russians, Ukrainians, or Koreans for medical purposes for the treatment of tuberculosis, for weight loss or to keep themselves youthful. They have probably learned from their Kazakh friends about these benefits. Also, an increasing number of foreign citizens are interested in exploring our city and have the taste of local specialties unusual for their palates <sup>8</sup>.

This quote provided by Akmaral, illustrates the incorporation of kumis consumption in the dietary practices of other ethnicities living in the territory of Kazakhstan. Nevertheless, even the non-Kazakh population still value visiting a local producer or *kumishana* to purchase kumis. **Sarsekova (2010)**, a Kazakh food technologist, who focuses on doing research of indigenous food products in Central Asia, argues that most of the Kazakh population prefers to buy kumis from local producers or at *kumishanas* rather than in the supermarkets or the bazaars guided by the perception that the drink bought from the villages is “natural” and “healthy”.

Kumis acting as a natural and healthy drink for the Kazakh population can be tied to the concept of “functional food”. I conceive a “functional food” as a food or beverage that not only provides to the customer a pleasant sensorial experience and attractive visual presentation, but also confers health benefits for the prevention and treatment of diseases. In present day Kazakhstan, conversations I had with customers during my fieldwork showed that many people see kumis as a “natural product”. This perception of “natural” is tied to the smaller scale local production and distribution. These informants believe that the kumis produced in family businesses or “on the farm ” is not diluted with water, making it more authentic than

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<sup>8</sup> Akmaral (2018, August 1). Personal interview.

the kumis from the supermarkets which has been altered during the process of bottling and transportation to the selling centers.

Customers from the bazaars in Almaty and Nur-Sultan in their answers to the survey gave a hint to their personal preferences for drinking kumis during the spring and summer seasons specifically. According to the responses from the surveys applied in the bazaars of Nur-Sultan and Almaty, most of the respondents from the ages of 22 to 53 years old stated that the thing that they like the most about kumis is the taste and the freshness associated to the beverage, in other words, they prefer a kumis that is not very sour on taste and can provide them with energy and vitamins. These first in person surveys were the basis for a longer survey launched on social media to explore the questions of seasonality more fully, and this is discussed in depth in chapter 3.

A few people who reported a preference for kumis consumption during autumn or winter also noted that they liked to visit the *kumishana*, while they did not provide the reason, one might assume that this is because they know that kumis is available in these businesses on an all-year-round basis. While the survey did not ask about household composition, my participant observation at the bazaars and supermarkets led to believe that many shoppers buy not only for themselves but other members in their households. Customers may be making a purchase not only for their own consumption but to share with their family members –perhaps for small children or the oldest family members of the household. As will be discussed in chapter 3, consumers purchase the beverage for a variety of reasons such as taste, health, and staying connected to tradition. Buying kumis especially during the cooler months either for the children or the oldest members of the family might show the shopper's concern for their family's health. Folk wisdom highlights the idea that incorporating

kumis into one's diet can be beneficial for the treatment of respiratory diseases due to the attributed healing properties of kumis. **McGuire (2017)**, an experienced researcher in the area of Cultural Studies gives a historical overview of how kumis was used in the past in Kazakhstan, highlighting the healing properties of the drink. He discusses how kumis was used to treat various medical conditions such as tuberculosis, gastrointestinal and cardiovascular diseases and summarizes the locations where people came from and where they visited in order to receive treatment for their ailments. His analysis focuses not only on kumis as a drink with healing properties, but how it is tightly interconnected with Kazakh culture and traditional values and be a tool of national revival in present day Kazakhstan. From the literature review and my fieldwork, it seems that some segment of today's population is concerned about their health, and that these consumers are protecting their wellbeing by returning to consumption of the traditional foods passed from generation to generation by their ancestors. For the case of the non-Kazakh populations, they might also find consumption of this product useful. These individuals may celebrate with their Kazakh friends at important life-cycle events, they may also have heard about the folklore surrounding the drink and health, or even if it is not "their" culture, they may also want to build connections in such a multiethnic environment. Non-Kazakh consumers might also seek a strong attachment to the Kazakh nation in the form of kumis consumption because it is part of the country's tradition and historic legacy, and they want to reinforce their connection to Kazakhstan through food.



**Figure 1.** Kumis in the supermarket. Magnum in Almaty, Gagarin street.



**Figure 2.** Kumis in the *bazaar*. Green Bazaar in Almaty.



**Figure 3.** Kumis in boutiques with made in Kazakhstan products, Sydyk camel milk store in Almaty.



**Figure 4.** Kumis at the *kumishana*. Saduahas hazhi Gylmani mosque in Nur-Sultan.

## The real spaces of kumis production, selling and consumption

### The production centers of kumis in Nur-Sultan and Almaty

Speaking about the mare's milk production in Nur-Sultan and Almaty, the production and commercialization of *saumal*<sup>9</sup> and kumis in the city is concentrated in the villages. The villages or *auyl* in the Kazakh language can be defined as settlements located in the countryside composed of houses or apartment complexes, farms, restaurants, and sometimes they foster open-air markets during the weekends that local producers use as a platform to commercialize their products. However,

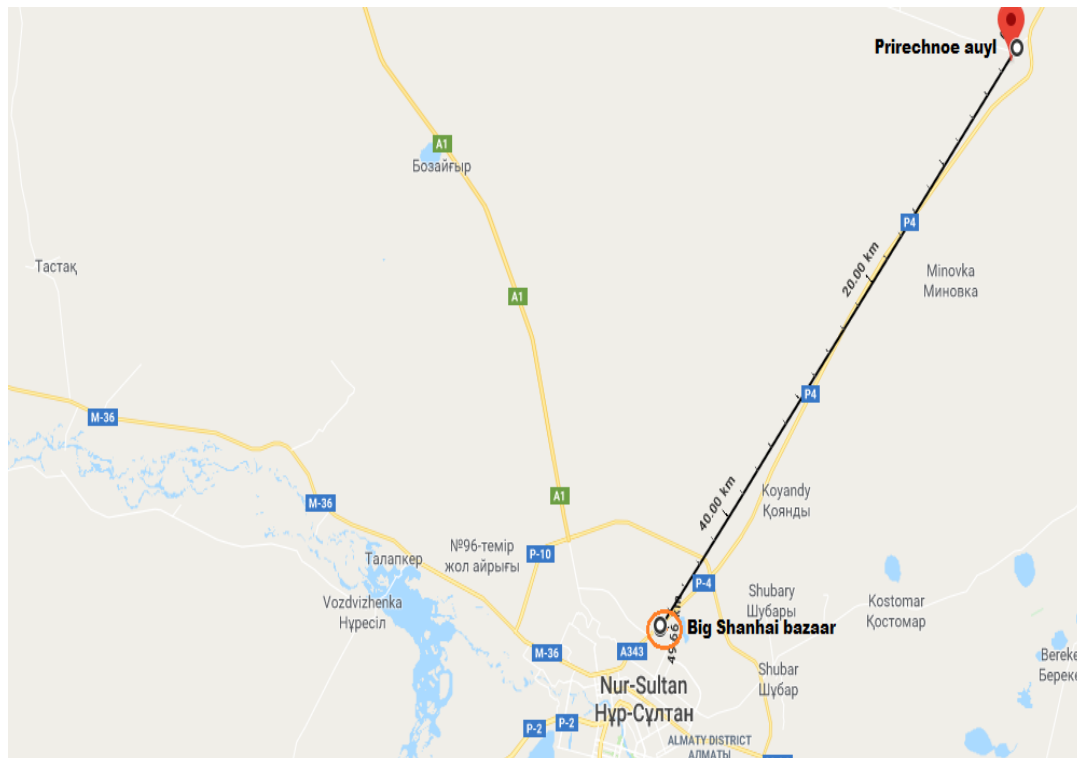
<sup>9</sup> Name in the Kazakh language of mare's fresh milk.

speaking about Nur-Sultan, the local production of kumis caters towards its distribution and commercialization in the bazaars. The only product sold on site at the villages is *saumal*. The villages around Nur-Sultan known by local people as the main selling and distribution points of kumis are Prirechnoe, Kosshy, Il'inka, and Koktal.

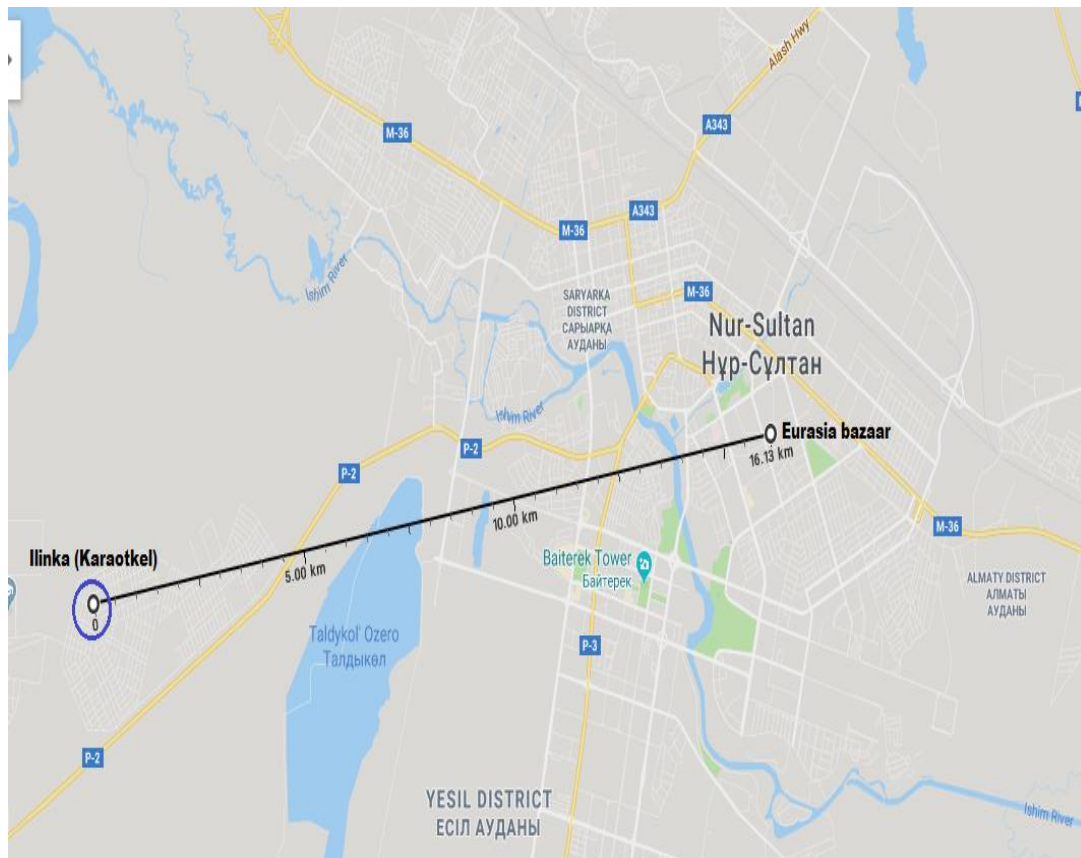
There are likely other regional villages that produce kumis; however, this research only considers these four villages because during my interviews with sellers at the city's bazaars they were the ones specifically named as the places that supply the city with kumis. For instance, according to the interviews I conducted with two sellers of kumis called Aizhan and Amanbek at the Big Shanhai bazaar the kumis they sell comes from the village Prirechnoe. Prirechnoe is a village located 50 km away from Big Shanhai bazaar (**Figure 5**). According to the advice I received from both sellers, a person can arrive there only by taxi or car following the Alash highway path since there are no buses in the public transportation of Nur-Sultan that are able to reach this corner outside the city. In Big Shanhai there are six sellers of kumis. All of them come from Prirechnoe but they don't share family ties. If Amanbek is not available to run the stall, he has his teenage son or daughter to look after the stall in his place, and during the weekends his daughter comes to help him so that there are two workers during the busier time. Nearby Amanbek's stall there is another stall attended by a woman called Gulnara and her teenage daughter, they are acquaintances of Amanbek. It is important to mention that Amanbek acts as both a seller and producer of kumis, Gulnara is the wife of a kumis producer and she herself sometimes assists during the milking process. Gulnara's daughter, however, has never assisted in the production of kumis despite coming from a family of producers of kumis. When I asked her about the reasons why she decided never to get involved

with the task she stated that she wasn't interested at all in learning about the art of making the beverage.

It was interesting to find out that a seller I interviewed from one of the stalls called Aizhan is not connected to the rest of the families and lives in Nur-sultan instead of Prirechnoe, she told me she comes from Shymkent, she has been for one year and a half in the business, and she is not a producer of kumis in contrast to the other families at the bazaar. She came to the business attracted by a stable source of daily income and to change professions. In the past, she used to be a seller of clothing. While I was doing the participant observation, I noted that she only hung out with one female friend who worked in a stall next to her selling cheese, milk, and sour cream. Also, it happened that this friend of hers was from Shymkent. My assumption about why they weren't interacting with the other sellers of kumis comes that the group may not trust them due to them not being part of the Prirechnoe community. Also, Aizhan did not have the family ties with production that the other sellers seemed to have, she is just a seller probably hired by the net of producers from Prirechnoe.



**Figure 5.** Prirechnoe village. The place where the kumis sold at Big Shanhai comes from. The distance between Big Shanhai and “Prirechnoe” village is approximately 50 km following the Alash highway. Each division from the scale represents 2 km. The Alash highway acts as the continuation of Bogenbay batyr avenue, an avenue located in Northeast Nur-Sultan. This is the part of the city that concentrates the highest number of bazaars and open-air markets such as Artyom, Shapaghat, Asem, the Central Market, Sharyn, Kok bazaar, and Nurdaulet.



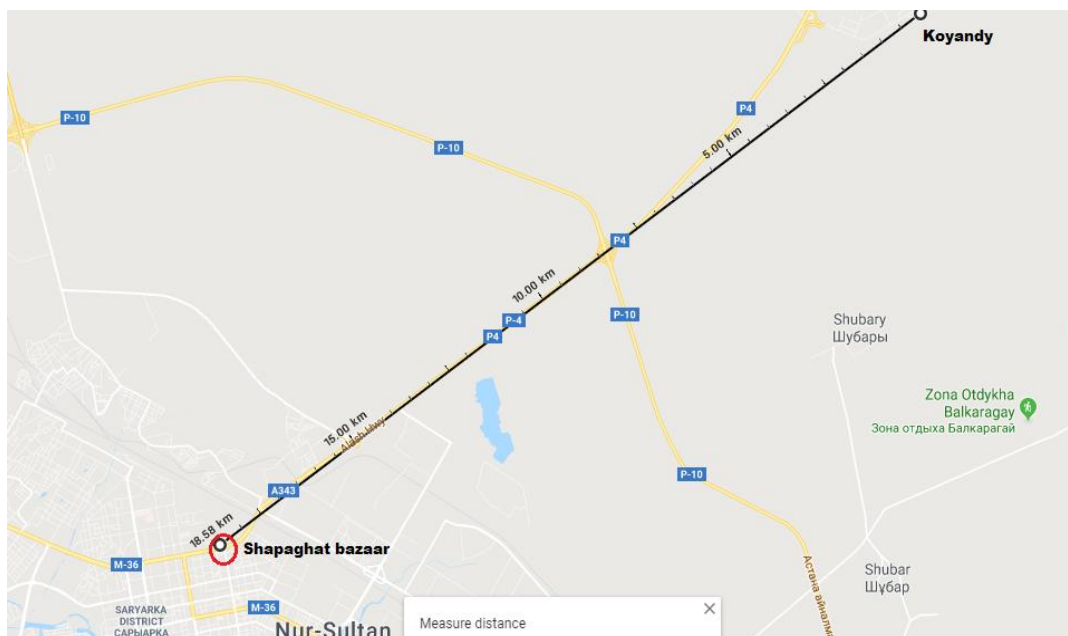
**Figure 6.** Distance from Ilinka to the Eurasia bazaar. Each division in the map represents 0.5 km. Ilinka is located next to the Korgalzhyn highway. To reach the bazaar “Eurasia” one has to follow the highway to the right until reaching the mall “Keruen City” located in Turan avenue, then continue to Baraeva avenue until reaching Tauelsizdik and then turn left in Kuyshi Dina street.



**Figure 7.** Distance from Ilinka to the Artyom bazaar. Each division in the map represents 0.5 km. Artyom is located between the avenues Seifullin and Valihanov in the Baikonur district. To reach the bazaar “Artyom” one must follow the highway to the right until reaching Kabanbay batyr avenue, then turn left in Respublika and drive straight ahead until reaching Seifullin avenue, then in Seyfullin avenue turn right and drive five more blocks until reaching the bazaar.



**Figure 8.** Location of Zhana-arka district between Karaganda and Zhezqazghan. Each division represents 52 km. It takes 5-6 hours to reach the destination.



**Figure 9.** Distance between Koyandy and Shapaghat. Each division represents 2 km. Shapaghat is in Bogenbay batyr avenue behind Artyom bazaar. To reach Koyandy, one must take the Alash highway.

Other central hubs involved in the production of kumis for the Nur-Sultan area are the villages of Il'inka, and Koyandy. Il'inka, nowadays called Karaoktel by the local population, is located 16 km away from the Eurasia bazaar and 15 km away from the Artyom bazaar (**Figure 6 & 7**). The main selling points for Il'inka kumis are the Eurasia and Artyom bazaars. However, there are some sellers of kumis in these bazaars that still ensure that the kumis they sell comes from different places even outside the Nur-Sultan area, like the case of kumis coming from Zhana-arka which is a district located between Karaganda and Zhezqazghan (**Figure 8**). If a person is not a connoisseur of kumis and is unfamiliar with the landscape and distances between the city and the bazaar distribution points then, he or she, might assume that the fabricated story about kumis in Nur-Sultan coming from this village is the absolute true. Those who visit the supermarkets see bottled and branded Zhana-arka as one of the most popular commercial brands. However, most kumis sold at the bazaars seems to be in bulk presentation, and not industrially produced branded bottles. When it is in smaller quantities than 5 liters, it is sometimes bottled onsite at the bazaar (see discussion **Chapter 2**). Maybe people might think that the bazaar kumis could be from smaller scale producers located near Zhana-arka. Many have this concept of the high quality of kumis coming from Zhana-arka guided by stories from their acquaintances where they valued the high quality of the horse meat and milk due to the diet of the horses rich in pasture and some autochthonous fruits such as apples. As for Koyandy, is also considered an important place for kumis distribution due to its proximity to some of the bazaars located alongside the Alash highway such as the Central Market and Shapaghat (**Figure 9**).

## **Interpretation of kumis production and business**

It was interesting to find out that some of the producers of kumis arrived at the business guided by personal hobbies where a family used a certain amount of horses for production of food for the household's own use, including such ingredients as kumis, kurt, meat, etc. This means that the production and commercialization of kumis in the villages is a family based. In order to illustrate this claim, here is a quote from Yerubay of "Boz bie" who relayed to me information concerning how a mare's farm operates:

We have been working in the area of animal breeding for four years now. We raise cows and horses. We have camels at a different place... It is our family business, my brothers, wife and other relatives are involved, around 6-7 families. We pay salaries to them.<sup>10</sup>

Thus, in a rural community all the producers know each other and create relationships of trust with one another where the families can exchange food products derived from the horse or mare. For a producer, overseeing kumis can be a profitable business because they can earn money every day though the production of high-quality kumis that clients will appreciate in terms of its sensorial properties and authenticity connected to a natural landscape. Geography plays fundamental role in determining the sensorial properties of the beverage. Information emerged during my interviews with producers that led me to the idea that flavors can be tied to the natural landscape prevalent in a region. I propose a model of the kumis supply chain discussing sensorial qualities, by considering the type of vegetation and food ingredients local producers use to feed the horses and mares. Some areas of the country might be more advantageous in producing kumis with the qualities valued

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<sup>10</sup> Yerubay (2018, December). Personal interview.

by customers. For example, being that Nur-Sultan is part of the steppe, this makes it difficult for herbs to grow due to a higher salinity of the ground. According to Bakhyt's testimony:

In Karaganda the kumis is great, it is a little bit sweet. The taste in the Nur-Sultan region is a little bit different, it is salty, maybe it depends on the soil, since this is the steppe.<sup>11</sup>

In contrast with Nur-Sultan, in Almaty there is more availability of herbs in the countryside. Also, there are trees that provide of fruits to the villagers that are involved in the processing of kumis, more specifically, apples. According to Bakhyt's experience, if horses are feed with apples, the taste of kumis can get even sweeter and this quality emerged as desirable to consumers. Also, the more abundant herbs in the South can provide freshness to the drink, and this was also one of the sensorial properties valued by consumers that emerged during the data collection from in person surveys given at the bazaars of both Almaty and Nur-Sultan and Alma supermarket, as well as the social media survey. The flavor of kumis is also connected to the fermentation process. The difference existing between each type of kumis is determined in the days of fermentation of *saumal*. The fermentation process can be from one to five days. During the fermentation process, the kumis is separated into two classifications: sweet and sour. In the sweet classification it is possible to include *bal kumis* and *sary kumis*, whereas *tunemel kumis* and *besti kumis* are considered in the sour classification of the drink (see **Table 14**). Here, it's also necessary to mention that for the preservation of the color and flavor of kumis some producers add *tobylghy* which essentially is ash produced by the burning of a small white flower known by the genus *Spiraea*.

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<sup>11</sup> Arystanov, B (2018, July 23). Personal interview.

Almagul, a seller from the “Eurasia” bazaar, agreed with the opinion about why it is necessary for some producers to add this extra ingredient:

They (the clients) don't enjoy the kumis that has black color in the upper part, we add ash because we need to keep kumis from turning extremely sour earlier. This is the taste that consumers from Nur-Sultan don't enjoy. In Kazakh, we call it *tobylghy*. Once the kumis is ready, we filtrate this element from the liquid.<sup>12</sup>

### **Interpretation of kumis production and experiences**

These findings were obtained from one interview with a producer called Yerubay at the Koksay village in Almaty. The Koksay village is located 40 minutes away from Almaty's city center. The producer was contacted through social media. I found his contact in Instagram while searching for places in the city to buy and consume kumis. His company is called Boz Bie (White Mare). Boz Bie is not only a farm but it's also a *kumishana* where people from the city can enjoy dishes from the Kazakh traditional cuisine such as *bashbarmak*, *kuurdak*, and *plov*, and accompany their meals with kumis or *saumal*. Boz Bie is a family-oriented business, this means that some family members are involved in the farming, milking, selling and production process of kumis as written in the section “Interpretation of kumis production and business”.

The main goal of the *kumishana* businesses is to offer high-quality products to clients that search for “food authenticity” in the countryside. According to the producer, clients continue to buy kumis from the villages because the kumis sold there is natural due to not having chemicals added for preservation purposes. When starting this work, some informants expressed a belief to me that kumis can only be

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<sup>12</sup> Almagul (2018, July 5). Personal interview.

purchased during the spring or summer periods, when I did the three surveys, many respondents also picked spring and summer as the best times to drink (see **Chapter 3**). It seems while some Kazakhstanis know that you can get kumis year-round, and some portion of the population drinks it year-round, a lot more people perceive it as a drink whose consumption is seasonally limited. Both producers informed me that mare's milk can be purchased still during the winter season.

For the *kumishana* to advertise their services and make available to the people a way to order kumis on request, they provided their contact information on various social media outlets. They mostly use Instagram where they have the possibility to share pictures of guests enjoying kumis, and to present clips devoted to Kazakh traditions and testimonies of customers enjoying the beverage. For the case of Almaty, people usually order more than 5 L through Whatsapp to take home for life-cycle festivities or for therapeutic purposes. Restaurants in the village also feature kumis produced at this location. Yerubay has plans of expanding to the city by opening stores with the “Boz Bie” name, or to place “Boz Bie” branded kumis for sale in shops with gourmet businesses that feature “made in Kazakhstan products”.

According to Yerubay, men drink kumis more than women, and he thinks that men probably handle better the sourness and slightly alcoholic level of kumis. He notes that women tend to prefer instead the taste of *saumal* due to its sweetness. In terms of types of kumis that might be more appealing to women, *bal kumis* was highlighted as the most suitable option for women to drink due to its only slightly sour taste.

The sourness of kumis depends exclusively on the duration of its fermentation. I found out that even among the community of producers there is still

a little knowledge on how many days of fermentation it takes for kumis to transition to one type from another. The most familiar terms for the customers are *bal kumis* and *asau kumis* (in the case of Almaty), with *asau kumis* being the sourest type of kumis. Not knowing exactly how many days of fermentation are needed to produce a specific type of kumis causes conflicts in discerning which is the criteria taken by the producers when distinguishing one type from another. Bakhyt helped to clarify this issue by adding the following:

The more days of fermentation, the greater the acidity and alcoholic content of kumis. In general, nowadays, almost nobody understands the difference between the types of kumis and are not able to base a qualification of the product by designing a standard.<sup>13</sup>

The quotes given by both Bakhyt and Yerubay open possibilities for future research in terms of kumis' chemical composition and how to discern the sensorial properties of each type of kumis. It would be very helpful for not only researchers, but also producers and consumers to have a standardized and accepted list of types, and that this classification could help predict how each type of kumis should look and taste according to the days of fermentation. Also, having this classification could help local producers to estimate the maximum shelf life of the drink and produce a new combination of products based on the behavior of kumis in contact with other food ingredients. More details about sensorial properties of kumis in terms of survey data and the degustation experiment conducted at Nazarbayev University will be revealed in Chapter 3.

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<sup>13</sup> Arystanov, B (2018, July 23). Personal interview.

## **Description of the bazaars object of study in Nur-Sultan**

According to **Zhukovskaya (2018)**, a Russian anthropologist who studies the culture of the Siberian and Central Asian populations, shopping at the bazaar for the contemporary Kazakh society remains a central feature in the social life of the cities. Bazaar facilities can be considered as the “beating heart” of a district because they reunite people from different countries and ethnicities who gather together to offer their merchandise and establish friendly relationships between sellers and traders. Also, another important aspect of bazaars is that they have expanded their sphere of influence outside borders, this means that they are attracting new categories of customers such as “foodies”, who are people looking forward to exploring new sensorial experiences of food or “urban youngsters” that would like to have closer connections to the food memories from their childhood. “Urban youngsters” cherish the image of the horse as an important element of the Kazakh soul despite belonging to a different ethnic origin or socioeconomical background to engage in celebrations in order to cherish the value of food and beverage in company of the family.

### **Artyom**

The date chosen for visiting Artyom bazaar was May 17. Before conducting the interviews I decided to do participant observation of this bazaar because I wanted to know the distribution of the milk products’ section in terms of the number of sellers offering kumis, how sellers promoted their products to the customers, which was the preferred spoken language (i.e., Russian or Kazakh, or a mix of both), and also compare if the prices of kumis were similar from one stall to another. The buses preferred by the citizens of Nur-Sultan to reach Artyom are number 10, 37 or 53. Nevertheless, people prefer to take bus number 53 despite it being one of the most

crowded bus routes because it offers people the opportunity to continue their shopping in other bazaars close to the area such as Shapaghat, Asem, the Central Bazaar, Shanhai, and Sharyn. I decided to go on a working day because I didn't want to have many interruptions in terms of describing the interaction scenario between sellers and customers, detail how many sellers dedicate themselves to the selling of kumis, if apart of kumis they sell other milk products in their stalls, etc.

Artyom bazaar is located between Seyfullin and Valikhanov avenues. The construction consists of a five-floor gray building. On the first floor it is possible to buy fruits, vegetables, kitchen appliances, cereals, spices, salads, milk products, meat, fish, sausages and ham. Also, there are ATM machines and a device of the ASTRA company where people can refill their balance for using Nur-Sultan's bus system. The second floor specializes in the selling of men's clothing, kitchen appliances, and traditional handicrafts. The third floor is composed of small boutiques where people can buy suitcases, cosmetic products, and dresses for special occasions. On the fourth-floor winter clothes and hats can be bought, as well as bed sheets. The last floor is divided into 3 sections: a section where there are only beauty shops, a section where furniture is sold, and a food court where the visitors can have tea or coffee and taste local culinary specialties.

The section of Artyom object of study can be accessed through the entrance located on Seyfullin avenue. The dairy products section has two doors: one door next to the nuts and spices stalls, and other door located next to the ice-cream stalls. In each side there are 15 stalls. The stalls located closer to the nuts and spices section are the ones devoted to the selling of cheese, sour cream, *ayran*, and *yogurt*, whereas the stalls closer to the ice-cream sector entrance are focused on selling local specialties such as *kurt*, *tvorog*, kumis, *shubat*, and *irimshik*. Among the stalls

catered to promoting kumis there are seven stalls. All the sellers of kumis are women between their late 30's and early 50's. Among them, six are ethnic Kazakhs and there was only one seller that belonged to another ethnic group (Figure 10 & 11).

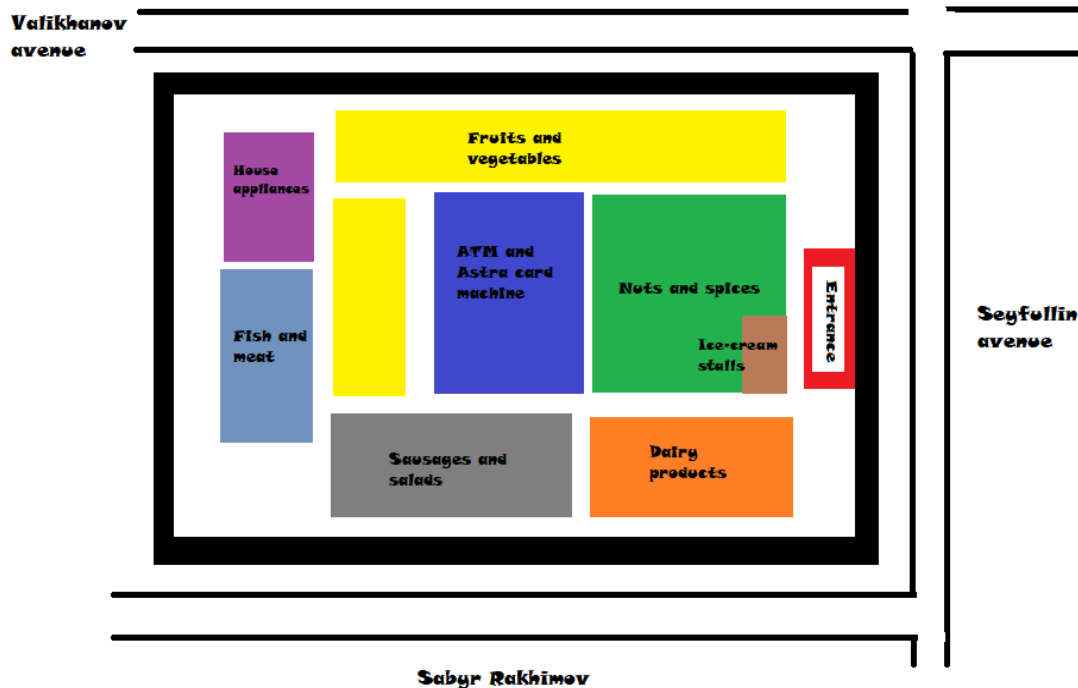


Figure 10. Map of the first floor of Artyom.

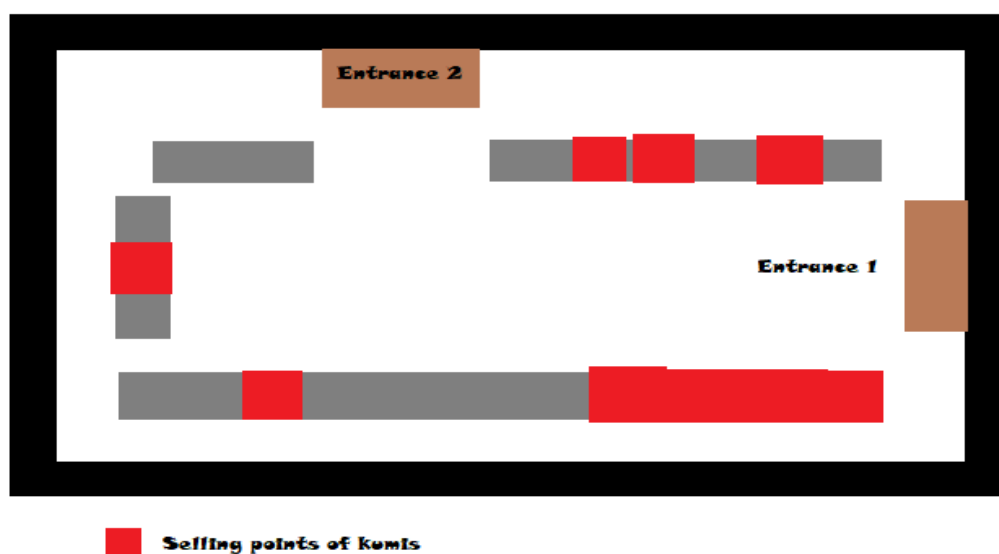


Figure 11. Stalls where kumis is sold in Artyom.

I first approached the sellers in the bazaar by going to each one of the stalls asking if I could have a try of kumis. While tasting the kumis I struck up friendly conversations with the sellers asking about the properties of kumis, which were the most recommended dishes of Kazakh cuisine to be tasted alongside kumis, where did the kumis come from, their work schedule and how to reserve kumis for special occasions. Then, I mentioned them that I was conducting a research project about the tendencies of kumis consumption and if they were interested in taking part in the project as interviewees assuring confidentiality during the process. To approach casually the sellers and strike up conversations with them I decided to visit the bazaar on working days between 12-2 pm. The language of choice I used to strike a conversation was Russian, since this is the language that is more comfortable for me to use to talk to people on campus and on the street. Nevertheless, when buyers purchase kumis from the sellers the language of preference to conduct business is Kazakh. Nevertheless, in Artyom people can also switch to Russian to ask for the prices and purchase products.

To get permission from the sellers at the bazaar, I used oral consent. It is important to note that I couldn't record their responses because they were feeling a sense of mistrust in how the information was going to be used for the research, therefore I decided to take their testimonies instead by writing on paper the most memorable facts about their experiences as sellers of kumis, their reasons to enter the business, the type of clients they cater their promotion to, which type of kumis the clients prefer to consume, how they perceive the sensorial properties of kumis coming from different *auyls* inside Nur-Sultan, the days of the week when people buy more kumis, etc.

I interviewed one seller whose name is Samal (**Figure 12**). Among the sellers from Artyom bazaar, she was the only one that accepted to take part in the study showing interest towards my position as a foreigner in learning more about the cultural aspects of the beverage. Samal is a woman in her late 30's, with dyed red hair, of Kazakh ethnicity. My first impression of her was that she didn't seem to be in a good mood, maybe because there were many clients of that day, still since I tried with the rest of the sellers to collect interview but all of them rejected to be interviewed, I approached the lady politely. Despite not being as cheerful as the seller I encountered in Eurasia she was respectful, and at the end of the interview invited me a cup of kumis. I was surprised by this act of kindness.



**Figure 12.** Samal from Artyom bazaar.

Samal shared something in common with the sellers from other bazaars concerning how they arrived at the profession. In the Artyom bazaar, there are no people that act as a producers and sellers of kumis, the sellers here act as intermediaries in the product's promotion. Before entering the profession of kumis seller, she was a housewife, she arrived at the kumis seller profession guided by prospects to earn extra money because in bazaars there are always clients without

regardless of the time of day or the weather conditions. Also, another aspect that motivated her to stay in this profession for six years now was that she saw it to be able to contribute to the promotion of Kazakh culture and tradition. During our interview, she noted that as a child she learned from her family about how healthy consuming kumis was, and that it could be drunk as a therapeutic agent to cure diseases. Her favorite place to consume kumis is at home with her family. For her kumis symbolizes something sweet, something that can be drunk like water and that is good for the organism:

It is good for health, I like to drink everywhere, kumis is fine, like water, it's just normal for me, I like to drink kumis with my family. Here the kumis in Nur-Sultan is sour. In Karaganda is sweet, is not that acid.<sup>14</sup>

It was interesting to find out from Samal that the sellers claim that the kumis sold at Artyom bazaar comes from Zhana-arka, a village in the Karaganda region located approximately 5-6 hours away from Nur-Sultan. Zhana-arka kumis has a reputation among local people from Akmolinskaya and Karagandinskaya regions in being the most delicious kumis in the area due to its sweet flavor. The reputation of Zhana-arka of being the area with the “best” kumis in the region according to the sellers and buyers is tied to the fact that this region is home to many milk factories, and the local diet is based mainly in the consumption of horse meat.

## **Eurasia**

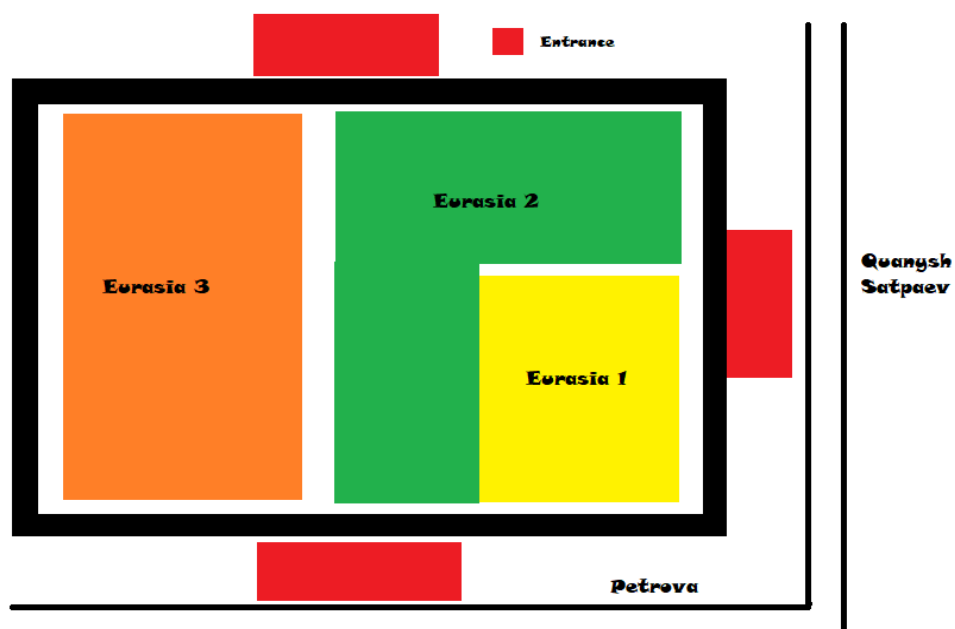
Eurasia is an example of a modern bazaar, a category that involves the combination of a shopping center with food court, cinema and entertainment amenities with the concept of a traditional bazaar constituted by stalls with food

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<sup>14</sup> Samal (2018, July 3). Personal interview.

products, clothing, and furniture. This facility is in the Almaty district of Nur-Sultan between the streets Petrova and Kuanysh Satpaev. The construction is made up of three sections called Eurasia 1, Eurasia 2, and Eurasia 3.

Eurasia 1 was the first section to be opened from the bazaar, in this section the visitors can find meat, fruits and vegetables, bread, milk products, and handicrafts (**Figure 13**), in Eurasia 2 the visitors can be able to buy clothing, jewelry and kitchen appliances, while in Eurasia 3 it can be found a bowling area, cinema complexes and food court where people can relax after their shopping.



**Figure 13.** Map of the first floor of Eurasia.

The food section of Eurasia is divided into nine sections. Starting from the entrance of Kuanysh Satpaev street, the buyer can find stalls specialized in the selling of meat and chicken products. Walking towards the entrance at the end of the chicken section, one can access a small door to enter to another subsection with bakery products, nuts, spices, tea, dairy products, fruit and vegetables, and salads. In this

section, at the right side, the customers can find bread, dried fruit, nuts, tea, candies, and cookies, while in the left side the buyers can delight themselves by tasting salads or buying milk products. The stalls that form part of the milk product section are in the center of the gallery. This section is constituted by two corridors. The first corridor is devoted to the selling of kumis, *shubat*, *kefir*, and *tvorog*, while the other two corridors are dedicated to the selling of cheese, *irimshik*, *smetana*, and *kaimak* (Figure 14). In total, five sellers are dedicated to selling kumis. In terms of the region of precedence, it was interesting to find out the sellers come from different corners of Kazakhstan, with the most predominant cities of origin for the sellers being Karaganda and Shymkent.

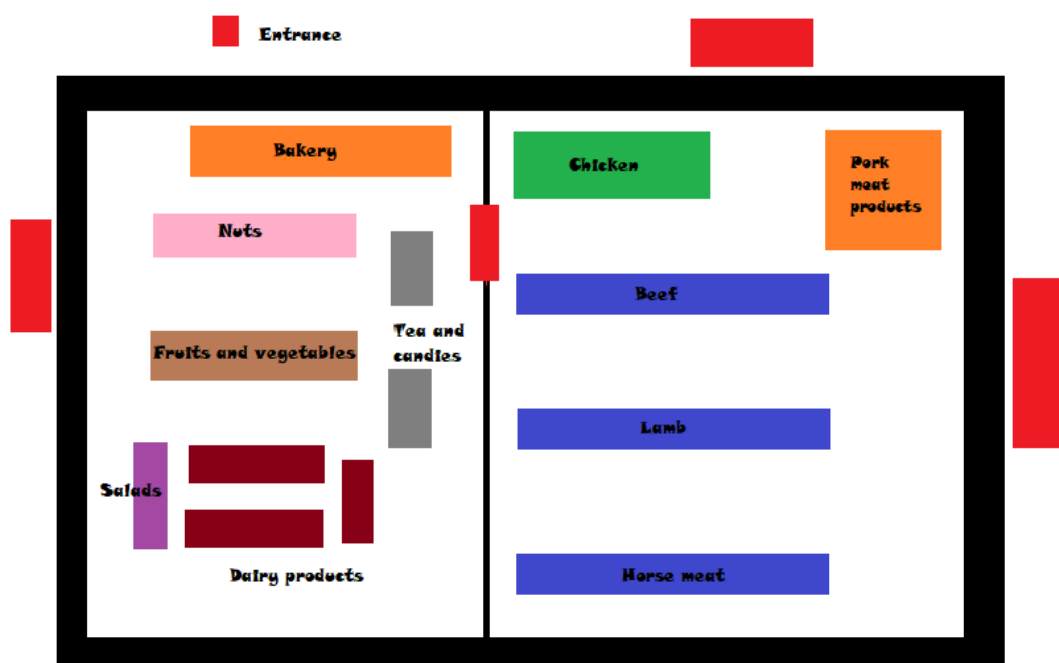


Figure 14. Map of Eurasia 1 first floor (food section).

## **Shanghai**

On July 19, I visited this bazaar for the first time to do participant observation. Before going to the bazaar, I had concerns if it was a safe place for a foreigner to go by himself/herself. Therefore, I asked my acquaintances the days and times where one could feel safer exploring the bazaar. Following their advice, I decided to explore the bazaar on Saturdays and Sundays as these are the days where many people from the city do their shopping.

The road towards Shanghai bazaar is interesting to admire since it is in a place outside Nur-Sultan where a person can see open air markets and stores dedicated to the selling of furniture, fruits and vegetables and clothing. While on the bus, I understood the reason related to the high influx of people visiting this area of the city. This tendency is connected to the fact that people might visit multiple bazaars in a single day. They might buy their supplies not only from one bazaar but from different ones since the prices, variety and quality of products fluctuate from one place to another. After passing Artyom, the bus moves towards Alash highway. On this highway, one can find the additional bazaars apart from the ones that I focused on in this study. These other bazaars that I do not use as an object of study are: The Central Market, 12 Mesyatsev, Nurdaulet, Kok Bazaar, Sharyn, and Alay. Shanghai is located between the Kok bazaar and Nurdaulet. In order to reach Shanghai, a person should get down at the last stop of bus number 53 and cross the open-air clothing stalls of Kok Bazaar.

Shanghai bazaar is in a two-floor brown colored building where all the stalls are divided into sectors. According to the nature of the things sold in each stall, they are distributed as following: In sector I, II and III the customers can buy dried fruit,

cookies, tea, spices, coffee, and nuts. In the sectors IV, V, VI the customers can find sellers offering kitchen appliances, beauty products, and sports' kits, while the sectors VIII and IX are dedicated to the selling of fruits and vegetables, and milk products. In the sector IX, the milk product section is divided into three corridors where it is possible to buy cheese, sour cream, and butter. In terms of kumis tasting and selling, there are only three stalls that offer kumis in the bazaar. The stalls are in the marked black section of the map (**Figure 15**).



**Figure 15.** Map of the first floor of Shanhai Bazaar.

During the second visit to the bazaar, which took place in July 25<sup>th</sup>, I conducted interviews with the sellers of kumis. Since Shanhai is a bazaar that gathers more visitors during the weekend, it was a challenging task to get an interview from the sellers. It is also important to note that in Shanhai the language of communication is Kazakh, therefore, this was one of the main challenges in getting to communicate with the locals due to my lack of fluency in the language. Nevertheless, the

interviewed people were very friendly when I tried to use a little bit of Kazakh to introduce myself by telling them where I come from and at which university I study. Afterwards, when I couldn't continue to explain the purpose of the interviews in Kazakh I continued the explanation in the Russian language about my interest towards researching kumis and how beneficial could be to continue encouraging the consumption of kumis among the younger generations. Out of the three sellers of kumis, one declined to participate in the interview claiming she had a difficult time understanding the Russian language and because she had many clients. The first seller that agreed in participating in the interview was a woman in her 40's that wasn't comfortable in disclosing her name, she just told me that her city of origin was Shymkent and that she had been working as a seller for four years. In my transcripts and description of her interview I called her by the pseudonym Aizhan. The seller told me she worked before in the clothing sector and came to sell kumis by recommendation of a friend who is a producer of kumis in her hometown Mereke, Taraz. She also claimed that the kumis she sells comes from Zhana-arka.

The second interviewed seller came from Nur-Sultan. His name is Amanbek. He has been working in the kumis sector for 1.5 years. He noted that among the younger generations it is becoming increasingly more popular to drink kumis as an appetizer in restaurants. Amanbek noted that drinking it before the meal could help enhance the appetite, refresh the mouth, and allow the person to get nutrients as therapeutic agents to preserve healthy lungs. It is interesting to find out that prices of kumis can fluctuate from one place to another when comparing between bazaars. For instance, in Eurasia 1 L of kumis costs 800 tenge, in Artyom 700 tenge, and in Shanhai 600 tenge. Does this difference in price depend on the origin of kumis? The

reputation of certain villages? Or perhaps the sensorial properties? These aspects will be further discussed in chapter 3 of the present thesis.

### **Descriptions of the bazaar object of study in Almaty**

The third stage of the project involved a visit to the former capital of Kazakhstan: Almaty. The first visit to Almaty was planned on the summer between August 1-6, whereas the second visit to the city took place between November 29 and December 2. The purpose of deciding to visit the city in different seasons was to trace if there is a connection between seasonality, production and availability of kumis, and to describe through first-hand testimonies from sellers and producers of kumis if the beverage's organoleptic properties change when consumed in spring, summer, or winter.

The interest in continuing the research of kumis production and consumption at the ex-financial capital of Kazakhstan was related to the fact that the city acts as one of the main important hubs of marketing and commercialization of kumis in Kazakhstan. My assumption in considering Almaty as an important hub of kumis production, began when I visited supermarket chains in Nur-sultan to check out which were the most prominent brands of kumis and the place where they come from. Surprisingly, I saw Southern brands sold in all Nur-Sultan's supermarkets and at the bazaars. This made me have the interest to explore in Almaty's bazaars and supermarkets if brand penetration in the market was restricted to local level or if there was the possibility to find in stock brands coming from different regions of Kazakhstan. For more specific details about the brands found in Nur-Sultan and Almaty, please refer to the section of "supermarket".

I arrived at the city on August 1 at 7 am. Since I wasn't acquainted with the city's bazaars and supermarkets I decided to stay in a central part of the city, that is, in the area between Raiymbek avenue, Seyfullina and Pushkin streets. The accommodation I chose was the Turkestan hotel, which is a touristic enterprise located conveniently in front of the Green Bazaar in the intersection of Makatayeva and Pushkin street. Staying in front of the Green Bazaar gave me the advantage in exploring the bazaar during the morning and the afternoons to do participant observation of the surroundings, explore the milk products area, count the number of sellers involved in the promotion of kumis, check the peak hours where clients arrive to do their shopping, and in terms of kumis consumption observe the usual presentations bought by the customers.

### **The Green Bazaar**

The Green Bazaar is a construction located at the crossroads of Pushkin, Jybek Joly, and Makatayeva streets. The construction can easily be spotted by the customers due to its color and size. The bazaar commercial model is located inside a two-floor green and gray colored building. During my first visit, it looked a little bit lonely during the morning due to there being very little traffic because of road repair of the streets of central Almaty. The outside territory of the bazaar is surrounded by cafeterias that offer Turkish coffee, pastries, and kebabs. These cafeterias are very popular with frequent clients of the bazaar due to their cheap prices and large portion sizes. The trade center opens from Tuesday to Sunday from 9 am until 7 pm. Apart of selling food products, it is possible also to buy textiles, home appliances, books, movies, clothes, and cleaning products (**Figure 16**).



**Figure 16.** The Green Bazaar.

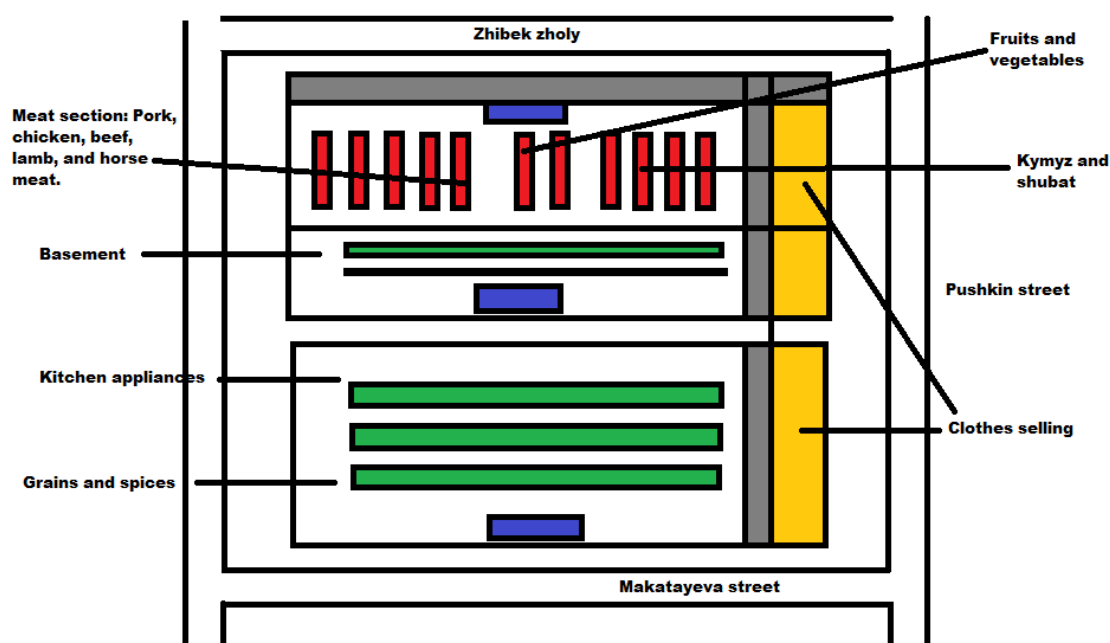
According to an article published in *voxpopoly.kz*<sup>15</sup>, the Green bazaar is the oldest and most important trade center in Almaty. It has an almost 100-year history. It was built in 1875 by the initiative of an architect named Kozell-Poklevskiy. The architectural design of the complex transitioned between two phases: being an open-air market in the first years of the 20<sup>th</sup> century and starting from the 80's decade to become a closed complex through the construction of a roof.

The bazaar is divided into two sections. The first sector is in Makatayeva street. Here the customers can buy grains, spices, kitchen appliances, and clothes in the stalls located next to Pushkin street. The second sector is divided into two subsections: the basement and the first floor located next to Zhibek zholy street. This section is the most well-known among customers not only from Almaty but also customers coming from other regions of Kazakhstan because it has been featured in documentaries and tv series (**Figure 17**). One example of a Kazakh tv series that

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<sup>15</sup> Green Bazaar's history: <https://www.voxpopuli.kz/history/istoriya-zelenogo-bazara-11778.html>

used the facilities of the Green Bazaar to film an episode was “Lyubov traktorista”, a production from Khabar tv channel starring Kamshat Zholdybayeva. The episode with the Green Bazaar as a protagonist was episode 16. The striking part of this episode is that it shows the bazaar not only as an entity where housewives or pensioners go, but also it shows that the bazaar is becoming a trendy place to explore among young middle class urban Kazakhs due to the low prices, availability of fresh fruits, vegetables, and milk products, and also it can be taken as a way to reconnect to their cultural roots.



**Figure 17.** Stalls distribution at the Green Bazaar.

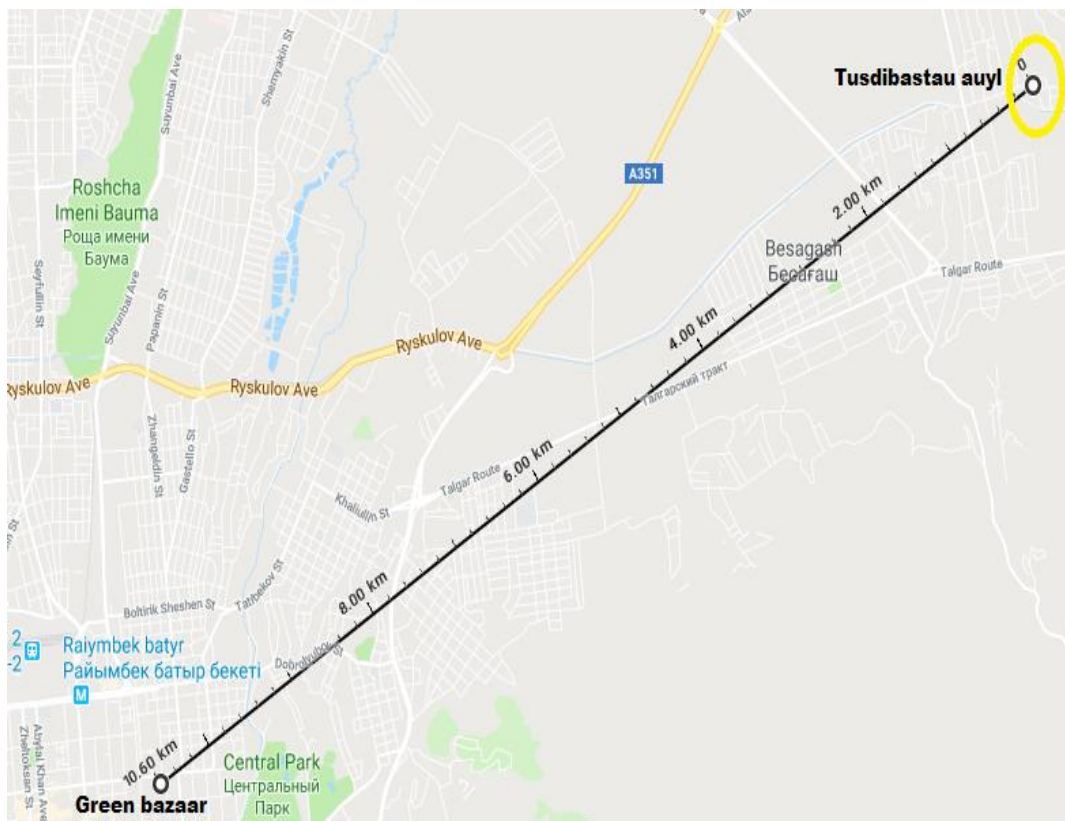
### **Interviews collected at the Green Bazaar with sellers of kumis**

During my first day in Almaty, I conducted a three-hour participant observation of the surroundings. I was interested in finding out about how customers approach sellers of kumis in the bazaars, the forms of communication sellers of kumis employ in order to capture their prospective client’s attention, the

relationships of trust between sellers and consumers, and learn about the histories behind sellers in deciding to pursue the profession of kumis seller or producer. An interesting aspect of bazaar life, that Akmaral from Daulet Beket's stall shared with me is that to become a seller at the bazaar, the person making the request must follow certain rules. First, in order to become a seller, one must be a minimum 18 years old, to get a permit for getting a stall one should sign a form attaching certain documents such as resident card. For the people selling fruits, vegetables, and milk products the vacant positions can be taken only by people coming from the villages who are relatives of the farmers or agricultural workers.

Before collecting interviews with the sellers, I decided to approach them informally by requesting to try their product and showing a genuine interest in learning about the health properties associated with the consumption of kumis. This approach worked very well for achieving communication between me in the position of a researcher with the interviewees. Nevertheless, since Kazakh is the working language of kumis producers and sellers at the bazaar, this created some difficulties in getting all the sellers to agree to an interview due to them not feeling comfortable speaking Russian or preferring to use Kazakh as an element of connection to their ethnic identity. My position as a researcher in the Green Bazaar was an interesting experience because it was not the first-time that local citizens told me that I could pass for a Kazakh citizen. This fact complicated the interview process with some of the sellers because they at first doubted my motivations. I perceived a sense of mistrust due to me asking questions about their product and their motivations in deciding to become sellers, due to my appearance and not being able to speak Kazakh.

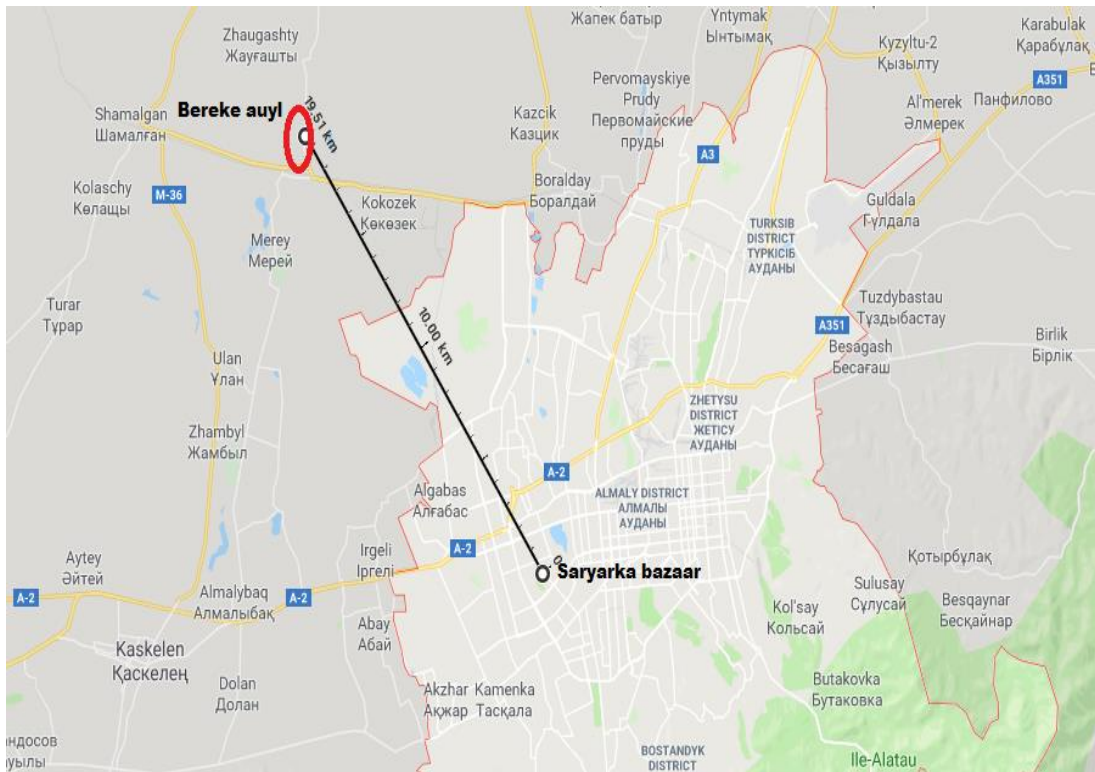
During the first part of the fieldwork project in Almaty, in the milk product section there were nine stalls devoted to the selling of kumis alongside other milk products such as *shubat*, *irimshik*, *smetana*, and *kurt*. In six of the stalls there were single woman, while the other three stalls were occupied by couples. Most kumis sellers are women in their early 40's or early 50's, in some stalls sometimes there is presence of a man. This "man" figure is most likely their husband who himself is involved in the production of the beverage. Before starting my fieldwork in Almaty, I thought it was going to be much easier to get more interviews than when I was conducting my fieldwork in Big Shanhai where Kazakh was the only language spoken in the kumis section. Despite the bazaar being the most popular spot in the city to get kumis and knowing the reputation of Almaty as a city with more Russian speakers, I observed in the Green Bazaar that all the sellers were ethnic Kazakhs and that the working language of communication was Kazakh. It was easier to get a testimony from an elderly woman when I introduced myself in the Kazakh language, and then excused myself for my poor knowledge of Kazakh and if she could help me answering some questions about kumis in the Russian language, she agreed despite having many clients, and not feeling very enthusiastic in speaking Russian. For future scholars wishing to continue any of the topics from this dissertation project is a must to have a good command of the Kazakh language. (**Figure 18**).



**Figure 18.** Production point of kumis in Almaty that distributes to the Green Bazaar. Each division represents 0.2 km. To reach Tusdibastau from the Green bazaar one must take the Raiymbek batyr avenue located 5 blocks away from the bazaar, then take Al-Farabi avenue and turn right at the Talgar route. The village is located close to the airport.

During the second day of my stay, guided by the advice of a receptionist from the hotel I stayed in, I decided to explore another bazaar called Saryarka. Saryarka is a bazaar located 10 min away of the subway station Moskva. Saryarka can be described as a combination of a bazaar and an open-air market frequented by customers from the Auezov district. The people from Almaty know about the reputation associated to the bazaar in terms of the low prices of fruits and vegetables and that it is also a place where the farmers from the neighboring villages of Almaty such as Tusedibastau, Bereke, Zhambyl, and Terekti come to the city to promote and sell their production of milk products or conserves. At Saryarka, there was only one stall dedicated to the selling of kumis due to it being a small bazaar centered mostly to the selling of fruits and vegetables. Here I interviewed one seller of kumis called Amanzhol. I wasn't able to do a recording of his testimonies due to him being deaf-mute. Nevertheless, even though he wasn't able to speak, we found a common language. While asking him questions in Russian, I opened wider my mouth when articulating the words and did mimic of my emotions. In case something wasn't clear he wrote me after our brief interview through WhatsApp about the place of origin of his kumis. He told me that he is not a producer of kumis, but his son is responsible for the beverage's production. Their family comes from Taraz and they have been living in Almaty for 15 years. Amanzhol's son learned the technique of kumis production from his grandfather. Their farm is in Bereke around 20 km away from Almaty (**Figure 19**). They start milking the mares at 5 am, finish at 7 am, and then, they transport the kumis to the Saryarka bazaar. According to his testimony, people know about the reputation of Bereke's kumis as being sweet to the palate and made with love. The analogy connected to "love", is related to the hospitality of the people

coming from this village who ensure producing the best quality kumis through passion and hard work.



**Figure 19.** Production point of kumis in Almaty that distributes to the Saryarka bazaar. Each division represents 1 km. The fastest route to reach the village is to take Raiymbek batyr avenue until reaching Kaskelen and then drive in the highway straight ahead till reaching Shamalghan.

### Supermarket

According to **Steeneken (2012)**, a Dutch economist, who studies the architecture of business processes applied to big retail companies, the supermarket business is a large and complex structure where people can buy food and utensils to satisfy their basic needs of survival. This business consists in the presence of a chain of retail stores in a city or region, various transportation systems from the production

areas to the stores, an array of product suppliers under contract, and a set of warehouse distribution systems. This business model exists in a competitive environment, where it acts as a valued-added intermediary between geographically dispersed supplier companies and the scattered individual customers who eventually buy their products. In carrying out these functions, a supermarket business acquires and assembles a wide assortment of goods from individual suppliers, then organizes and distributes them as needed to a chain of retail stores for sale to local customers. The supermarket model is about focusing on the work that is involved in physically handling stock as it makes the journey from supplier to customer. Although it references the business entities that are involved, the model does not include the life cycle development of the physical housing structures of warehouses, stores and trucks, or the equipment they employ.

Consumers play a vital role in developing the economic system by forming part of the supply chain of manufacturing and distribution of products. In the supermarkets, consumers accompanied by their families can have the possibility to buy kumis from the shelf. Therefore, in this context, kumis can be considered as a “commodity”. The word “commodity” means that the supermarket makes available the presence of kumis during all the year despite being a product that many consumers consider having peak production only in the period between spring and autumn. Compared to the prices at bazaars for similar goods there seems to be more fluctuation in price. One of the inconveniences of shopping in supermarkets is that prices can vary according to factors such as currency devaluation, scarcity of imported supplies, or dependence on seasonality to produce food supplies. Therefore, the products sold in the supermarkets can be twice as expensive as purchasing them in the closed or open-air markets. There are, however, some

perceived benefits to shopping at a supermarket. One thing to consider about people's preference in doing their shopping at the supermarkets are the weather conditions and distances. Being the Republic of Kazakhstan a country where temperatures in some regions of the North can reach  $-45^{\circ}\text{C}$  during the winter and the long period it takes to get to the closest bazaar by public transportation makes it very difficult for people to buy their products on a weekly basis. Therefore, during these times of year they prefer to buy from the supermarkets despite the higher prices of the products.

The biggest and most important supermarkets in the Republic of Kazakhstan are Magnum and Ramstore. Ramstore is the best-known supermarket chain in Kazakhstan. It sells local and international products such as groceries, fresh salads, meat, fish, bread, etc. The first Ramstore was opened in Almaty in 1997. The concept of the supermarket chain comes from a Turkish company called Migros who's main actioner is Koc Holding (a company in Turkey behind the investment control of food products, transportation, IT, construction, financial services, energetics, and tourism). The store goes by the name Ramstore in Kazakhstan. Nowadays, Ramstore has 3 stores in Nur-Sultan, and 6 stores in Almaty. Magnum Cash & Carry LLP is a corporation founded in 2007 and headquartered in Almaty that operates retail stores specialized in the selling of consumer goods such as groceries, bakery products, meat, fish, cookery, confectionery, dairy products, and salads. Currently, it operates approximately 33 shopping centers in the main cities of Kazakhstan such as Nur-Sultan, Almaty, Karaganda, Taldykorgan, Shymkent, Kaskelen and Petropavlosk.

Nevertheless, there are other smaller retail companies where people also do their shopping due to its lower prices. One example of these retail companies is the supermarket Alma, which has four stores in Nur-Sultan and one store in Almaty.

Alma was chosen for the project as a model object of study due to their affordable prices and because is frequented by families during the weekends to do the shopping of milk products and prepared food.

In Nur-Sultan, the main Alma supermarket is located inside the shopping mall Asia Park (**Figure 20, 21 & 22**). However, there are other smaller Alma stores in Saryarka avenue, Respublika avenue, and inside the business center Moskva. Asia Park is one of the oldest and coziest shopping centers in Nur-Sultan where people can gather for pleasant meetings all-year-round with family or friends, meet new persons in the weekly spectacles of music and cultural festivals, do comfortable shopping at affordable prices of makeup, clothing and jewelry, enjoy films at the cinema theater, buy groceries and fresh products, have a meal at the food court where there is a great variety of restaurant choices, and enjoy a drink at the sky bar.

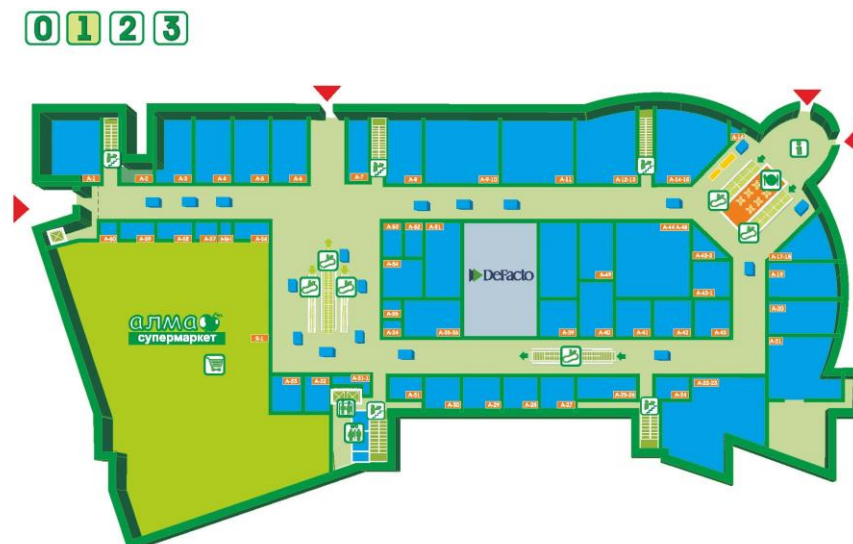
Alma is in the first floor of Asia Park. Asia Park can be accessed through 4 entrances: Two entrances located in Kabanbay batyr, a second entrance located in Dostyk street, and an entrance at the back of the building facing Turan avenue. Coming from Kabanbay batyr, a client must walk straight ahead pass Costa coffee, then turn to the right walking through small stalls of jewelry selling. Almost at the end of the hall one can encounter the supermarket. Alma offers the buyers a wide choice of fresh products, delicacies, bakery, and cookery at affordable prices. The busiest days of the week for shopping are Saturday and Sunday when most of the families buy their weekly food choices.

The supermarket is divided into 7 sections. Starting from right to left, the clients can find appliances, beauty products, liquors, the grocery section, and the bakery. The milk product section is located at the left corner of the store next to the

bakery section. It is important to mention that there are 2 dairy sections: A small stall where one woman sells homemade *kurt*, *kumis*, *irimshik*, and *tvorog*, and the section where the persons can find the industrial kumis brands. Since it was not possible to collect research data from the supermarket without permission, it was decided first to submit a letter to the manager. My first visit to Alma began on May 15<sup>th</sup> in order to deliver the permission letter to conduct research inside the store. One thing I realized is that the manager changed according the work schedule. When I applied for permission the afternoon's manager was reluctant at first in granting me permission to conduct my project in the store because she didn't understand well what I wanted to say in Russian. As soon as I showed my ID and the letter with our Dean's signature she became more amicable since she didn't know before there were international students from Nazarbayev University. Since she didn't want to disclose her name she just sealed me the letter to get the official authorization to visit the store and collect responses from the clients.

Collecting responses wasn't an easy task to do despite being inside of a supermarket at peak hours where more people came to visit. I found myself during the first day standing up for 6 non-stop hours and collecting three responses: two in Russian and one in Kazakh. In the second day, I collected 17 responses: 15 in Russian and two in Kazakh. I approached people by greeting them cordially, asking them in a friendly manner how much they enjoyed kumis, and afterwards, if I found out the persons enjoyed the drink, then I invited them to take part in the study. Despite the difficulties from the first day in gathering more participants, during the second day people were very eager to share their thoughts with a foreign student about the most popular spots to buy kumis from the city, and which according to their opinion was the best branded kumis when buying from the supermarket. Most people claimed

that the kumis sold in the bazaars is not of good quality because according to them it can be adulterated with substances such as water. Therefore, if they cannot visit a local producer, they can be able to buy kumis on a year-round basis from the supermarket. Among the preferred brands of kumis, 85% of the people from the supermarket sample agreed that Zhana-arka is the one that has the best taste. But can the reputation of a brand be able to illustrate the consumption preferences of the population from different generational groups? This aspect will be explored in chapter 3 in the section of sensorial analysis.



**Figure 20.** Map of Alma supermarket.



**Figure 21.** Asia Park in Nur-Sultan.



**Figure 22.** Alma supermarket in Nur-Sultan.

The relationship between kumis brands, seasonality and the supermarket of origin is illustrated in the following chart (**Table 2**). In the chart, during the summer the prices of kumis decrease in Magnum and Ramstore, whereas in other supermarket chains of Nur-Sultan the prices remain the same. Nevertheless, as soon

as autumn approaches the price of certain brands of kumis such as Zhana-arka increase their price. Does it have to do with the number of bottles left from the industry? Or is it connected to a decrease in L milked from the mares? In order to answer this question, please refer to chapter 2 to the section of production and seasonality.

**Table 2.** Prices of kumis in Nur-Sultan and Almaty.

Brand	City	Presentation	Supermarket	Price (tenge)		
				Spring	Summer	Autumn and Winter
Zhana-Arka	Nur-Sultan	1 L	Ramstore	750	750	900
			Alma	750	750	850
			Galamart	750	750	-
Sarzhailau	Nur-Sultan, Almaty	500 mL	Ramstore	550	430	550
		1 L		649	559	649
		1 L	Alma	320	600	-
		500 mL	Magnum	320	320	-
		1 L		600	600	-
Qazaq House	Nur-Sultan	1 L	Galamart	940	940	-
		5 L		-	4705	-
Daulet-Beket	Nur-Sultan, Almaty	500 mL	Galamart	420	420	-
		1 L		780	780	-

## **Chapter 2: Seasonality of kumis, safety and transportation**

The present chapter will explore the connection existing between mare's milk production and seasonality where the concept of seasonality will symbolize the period when mares are milked, the peak seasons for kumis production, and how the natural landscape and climate affects the sensorial properties of the beverage. Also, I will describe the current state of scholarship in mare's milk safety measures in the industry, and the relationship between quality control and the transportation practice of kumis to the selling points.

This project is at first exploratory – in that I was curious how limited the market is due to seasonality, and if there are ways to increase consumer consumption throughout all seasons. In order to try and answer these questions, I spoke with producers about issues of seasonality and in the online version of the survey created for launch on social media, I tried to add questions to get at how much seasonality affected consumption choices. I even asked which seasons of the year people drank kumis, to how limited or prevalent year-round consumption is (see **Chapter 3**).

The social media survey elements were shaped by the responses from earlier in person surveys, interviews with sellers at the bazaars, and producers. I asked a question about why the participants chose a favorite season to consume kumis. Open coding of the earlier data led me to provide three answers: that horses consume more grass than in other seasons, because the taste is much better in that season, or the vitamin content of kumis during that season is higher. I also allowed for an open response “other” choice. These three aspects are in some ways connected to the geographical space of Kazakhstan, more specifically the relationship between north and south in terms of climate and land. As seen in Bakhyt's testimony written in the

section of “Interpretation of kumis production and business”, the flavor of kumis can be tied to the natural landscape of the region, more specifically, by considering the type of vegetation and food ingredients local producers use to feed the mares. In the Nur-sultan part of the steppe, as said by Bakhyt, it makes it difficult for herbs to grow due to a higher salinity of the ground. A higher salinity content in the soil could make the mare’s milk lose a little bit of its sweet flavor and consequently provide a sourer flavor of the drink, while in Almaty there is more availability of herbs in the countryside.

Despite the belief of the local population that kumis can only be purchased during the spring or summer periods, Bakhyt confirmed that mare’s milk can be purchased still during the winter season. The personal bias of the population towards not consuming kumis during the autumn or winter is probably guided by the assumption that kumis in the winter comes from leftovers of the autumn season that turn sour due to the fermentation process. Usually, people prefer to drink kumis in the spring and summer seasons because they consider that the kumis produced during that period is sweet and has the highest content of vitamins. People might enjoy this kind of taste because the grass in this period is fresh and provides a sweet taste to the drink. Nowadays there are concerns in the food industry about solving the challenge of providing the Kazakh population with a year-round kumis production. One of the pioneers that thought about this idea was **Sarsekova (2010)**, a Kazakh food technologist, whose research focuses on the indigenous food products of Central Asia. The aim of Sarsekova’s research is to develop processing techniques that ensure a higher lifespan for the product and at the same time contribute to retaining its original nutritious properties. She also highlights the benefits of kumis’s transformation into powder using cold temperatures by obtaining of a high-quality product that can be

easily transported to regions inside Kazakhstan or even being exported to neighboring countries in the future. The scholarship's limitations are that the author doesn't provide enough background information about the process of how kumis is made into a powder. She also doesn't sufficiently address the potential rejection of powdered kumis by consumers, because of the idea that the industrial transformation to make the powder might eliminate kumis' healthy properties, or that there might be consumer stigma towards this presentation as "unnatural". So, although, the future market might see these powdered forms to ensure year-round access to mare's milk, what about the more traditional formulation's availability throughout the year? How much is kumis' production and consumption limited by season?

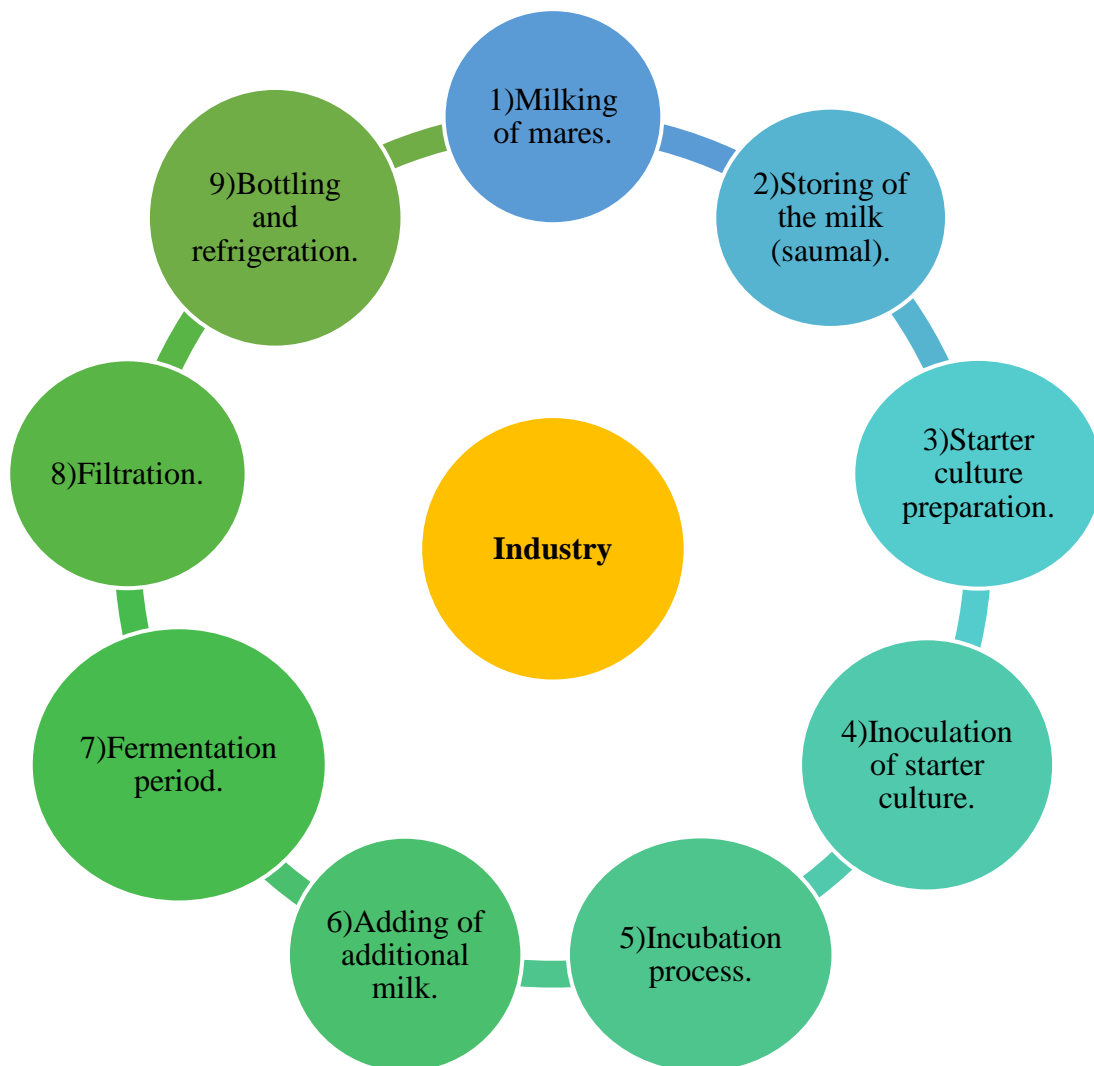
### **Specific details of the milking process and its connection to seasonality**

According to **Doreau (1989)**, a French veterinarian specialized in the study of mare's morphology and histology, milk is produced through the mammary gland. The mammary gland of a mare consists of two halves separated with an intermammary groove. Each halve consists of a mamma and a teat. Responsible for colostrum, and later milk excretion, are epithelial cells forming alveoli which are grouped into lobules. The number of epithelial cells increases with gestational age and enlarges the excretory surface. The lobules are surrounded by myoepithelial cells responsible for the ejection of secretion, which is discharged via ducts into the teat opening. The first secretion of the mammary gland is called colostrum, whose content quickly changes within 12 h after birth. The lactation period of mares lasts for 6 months. For practical purposes mostly related to the climate and availability of more abundant herbs for grazing, lactation most often begins in April and ends in the beginning of November. However, in talking with some producers, it is clear that production and lactation can be manipulated to occur during other seasons even in

the northern regions of the country, though likely on a much smaller scale than during the optimal seasons of production. In order to obtain milk for preparing kumis it is necessary to milk the mares every two hours. The production of milk and its connection to seasonality is described in the following chart:

<b>Spring</b>	<b>Summer</b>	<b>Autumm</b>		
<ul style="list-style-type: none"> <li>• Signs of estrus: Ovulation period begins on March.</li> <li>• The breeding season begins until April.</li> <li>• Milking period begins between April and May.</li> <li>• Milk produced per 2 hours session: 4 L.</li> </ul>	<ul style="list-style-type: none"> <li>• Kumis with a sweeter taste, fresh, and with a higher content of vitamins.</li> <li>• Milk produced per 2 hours session: 5 L.</li> </ul>	<ul style="list-style-type: none"> <li>• Kumis with a slightly sour taste,</li> <li>• Milk produced per 2 hours session: 4 L.</li> <li>• Milking period ceases in November.</li> </ul>		
<table border="1"> <thead> <tr> <th data-bbox="577 1084 1031 1265"><b>Winter</b></th> </tr> </thead> <tbody> <tr> <td data-bbox="577 1265 1031 1552"> <ul style="list-style-type: none"> <li>• Anestrus period: The mare doesn't show signs of estrus, the ovules are inactive, few mares ovulate during this period.</li> <li>• Sour flavored kumis.</li> <li>• No milking of mares.</li> </ul> </td> </tr> </tbody> </table>			<b>Winter</b>	<ul style="list-style-type: none"> <li>• Anestrus period: The mare doesn't show signs of estrus, the ovules are inactive, few mares ovulate during this period.</li> <li>• Sour flavored kumis.</li> <li>• No milking of mares.</li> </ul>
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## Industrial production

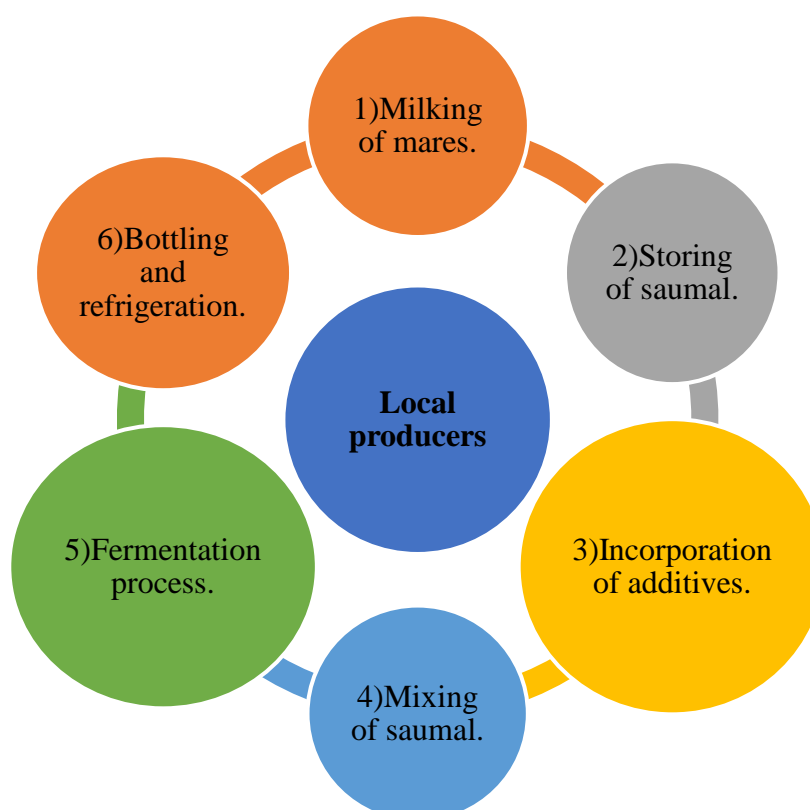


**Chart 1.** How kumis is produced in the industry?

For the industrial production, as described by **Maksyutov (2013)**, an Ukrainian food scientist who studies the technology development of kumis as a functional drink, it is necessary to use two types of microbiological samples to control the fermentation process, one type of microorganism to produce lactic acid (*Lactobacillus delbrueckii*), and a yeast to produce alcohol such as *Saccharomyces lactis*. These microorganisms are added to a sample of mare's milk in order to

produce a substrate called “starter culture”. The difference with the homemade production of kumis is that it uses less equipment for monitoring conditions compared to the industrial-scale production process where the temperatures to inoculate the microorganisms in the mare’s milk and to preserve the kumis are monitored by specialized equipment. The started culture is ready to be incorporated into mare’s milk after four days of incubation process. This starter culture is added in a 30% proportion according to the total volume of milk to be used for kumis processing. The fermentation process to produce kumis takes place at 29 °C with a mixing time of the sample of 2 hours. Then the sample is transferred into bottles, left for 2 hours at room temperature and then transferred to fridges in order to be preserved at 4 °C (**Chart 1**).

### **Homemade production**



**Chart 2.** Homemade process of kumis.

The process of homemade preparation of kumis begins with the cleaning of udders using a warm cloth in order to eliminate soil and milk residues. Before initiating the milking process, the operator should touch gently the mare's udders and squeeze softly to check out if there is no presence of blood or ulcerations in the animal. Once checked out there is no alteration in the mare's organs, the mare is milked using the right hand. It is advisable to begin squeezing the left-sided udder, and then proceed to squeeze one by one the rest of the udders. This process is done for 30 min. Once collected the milk, the liquid is filtered in order to eliminate soil residues or pasture. The fresh milk obtained in this step is called *saumal*.

Then, the *saumal* is stored in a plastic or wooden barrel. Afterwards, ashes from a flower called *tobylghy* are added in order to preserve the quality of the beverage in terms of maintaining its characteristic coloration (light yellow) and inhibiting the apparition of an acid flavor in the early stages of fermentation. The wooden barrell is closed and the milk is mixed with the help of an automatic piston for 200 times (the number of times necessary to mix the *saumal* is a secret kept by every producer). Mixing the *saumal* helps with the distribution of oxygen in the beverage. Once passed the mixing time, the *saumal* is preserved in a wooden barrel to proceed for filtration. Filtration is done in order to eliminate the remnant ash from the sample. Then, the kumis is bottled, sealed and preserved in refrigeration until its transportation (**Chart 2**).

## **Safety of mare's milk and kumis in the industry**

One of the issues of concern in the local mare's milk industry is the need to develop new methods to prolong the shelf life of mare's milk and kumis. **Nurliyani (2015)**, a Pakistani scholar specialized in nutrition of milk products, conducted studies related to the modification of the chemical and physical properties of mare's milk during storage at room temperature. For his study, he took samples of mare's milk, stored the samples on sterile bottles and incubated the content at room temperature. Then, after the incubation process, he measured the pH, water and fat acid content of the samples. Through his results, he found out that sensorial properties such as acidity, color, and texture of the milk can be affected by temperature and light exposure. After conducting various experiments with mare's milk samples, he set up 16 h as the maximum time mare's milk can remain at room temperature in contrast to pasteurized cow's milk that resists only five hours. According to the words of **Nurtazin (2015)**, a Kazakh biologist, an issue of concern for researchers in the Food Technology sector is that despite the long resistance of mare's milk to room temperature conditions, the chemical composition makes it susceptible to become spoiled at a faster pace than cow's milk due to the oxidation of its unsaturated fatty acids in contact with the light, and the rupture of the whey proteins due to the formation of alcohol and organic acids during the fermentation process. Therefore, it is important for the research centers and the milk product industries in Kazakhstan to develop a method that can provide a similar outcome like pasteurization to mare's milk but without affecting its physical and sensorial properties of the product complying with the quality control norm established for kumis and mare's milk in the Republic of Kazakhstan.

## **Quality control of kumis in the Republic of Kazakhstan and transportation in the industry**

Kumis on industrial level is regulated by the standard “RK 1004-98” issued by the order of the committee on technical regulation and metrology of the Ministry of Industry and Trade of the Republic of Kazakhstan<sup>16</sup>. This norm dictates that kumis should satisfy the following organoleptic characteristics: be homogeneous, have a sparkling and foaming texture, be slightly sour in taste, and, as for the color, it should be milky white with a bluish tinge. In terms of safety, it is stipulated that kumis should be rejected if the microbiological analysis shows the presence of coliform bacteria in the form of *Escherichia coli* and *Salmonella* in 0.1 g and 25 g per 1 L of mare’s milk sample. In terms of packing specifications, kumis should be bottled in glass, aluminum cans, metal flasks, and non-transparent plastic bottles with a mass capacity of 10 dm<sup>3</sup>. The bottles of kumis should be sealed with a cap and tightly closed with covers of rubber gaskets.

When labeling the bottles of kumis, all the contents should be written in the Kazakh and Russian languages providing description about the manufacturer’s name and/or trademark, its location, production date and estimated expiration date, storage mode, net weight, and nutritional content in 100 g of product.

### **Transportation of kumis by local producers**

While industrial level production has regulatory guidelines, I was interested in some of these safety issues regarding smaller-scale production. For the small-scale production, I was curious about how kumis is transported and preserved from the production farms to the bazaars. I asked Bakhyt from Qazaq House if he

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<sup>16</sup> Link to the norm in Russian language:  
[https://online.zakon.kz/Document/?doc\\_id=30002183#pos=1;-27](https://online.zakon.kz/Document/?doc_id=30002183#pos=1;-27)

could describe me how kumis is preserved after the bottling process. He just detailed that the kumis inside the bottles is refrigerated and if not opening a bottle, the product can last from two to five months. The reason why the kumis lasts this period is due to the oxygen being removed from the beverage during the process of sealing the plastic cap to the bottle with the help of a vacuum.

Yerubay from Koksay mentioned that bulk kumis taken to the bazaars is transported in a van and can last maximum one day if not being stored in a cool place such as a refrigerator, however, he didn't offer specific details if the containers with bulked kumis were protected with something else such as ice for maintaining the temperature or, if the containers were covered with a cloth in the van to protect them from the sun and heat especially during the summer season.

When at the Saryarka Bazaar doing my participant observation, I happened to see one man whose van stopped in front of the seller I interviewed carrying with himself kumis stored in 5 L plastic bottle gallons. The gallons in the van despite not having a label were clean and kept inside carton boxes. As soon as the kumis reached the stall, the gallons with the beverage were cleaned with a cloth and afterwards they proceeded to store them inside the fridge alongside other milk products. After finishing the storing process of kumis in the fridge, both men proceeded to wash their hands. In terms of industrial production, the process of kumis transportation is dictated by the standard "RK 1004-98" with the transportation taking place in the following way: The bottles are allocated in refrigerated trucks at a temperature not exceeding 6 °C and placed inside metal basket containers to isolate them from the light. Nevertheless, still, there is a lot of work to be done in terms of standardizing the norm of kumis and mare's milk to consider adding the maximum shelf life of both products at different temperature conditions, provide details about how the units

that transport the product to the selling points should be sanitized, and add the heating treatment conditions applied to mare's milk to ensure the product's safety for human consumption.

How closely small-scale producers who sell their products somewhat distance from the place of production follow these regulations is not clear. It is also not clear with smaller-scale production, how long the product typically sits in transit, and what type of transport is most commonly used. Is it a standard van or small truck? It also isn't clear how many small-scale producers would have access to, the means to afford, or even the desire to ship their kumis on refrigerated trucks. If they wanted to do this, how easy or expensive would it be to use refrigerated trucks? At this time, for small-scale producers it may not be easy, cheap or desirable. So, if most transport is for fairly short distances (i.e., see the maps from **chapter 1**) using small vans and trucks, how often are bags of ice or insulated coolers used in the warmer months? All of these are questions that could be explored by a future researcher.

Perhaps the current state of transportation for small-scale producers getting their products to bazaars in the city is not a large problem, because if spoiled, or slightly "off", or even "not so fresh" kumis was frequently offered at the bazaars then one would expect customers to complain or not buy it. If there were frequent problems with freshness then even sellers (i.e., those that are only intermediaries and not producers themselves) could begin to deprioritize a relationship with a producer if the product stopped inspiring confidence.

### Chapter 3: Who are the consumers of kumis?

In the previous chapters, I mostly explored the qualitative data coming from the interviews with the producers and sellers of kumis in Astana and Almaty in terms of the state of production, seasonality, and consumers' preferences. For the present chapter, I will focus on describing the relationships between consumers and their kumis enjoyment in terms of its sensorial properties and its connectedness to geography, age, personal preferences, and cultural roots. In chapters 1 and 2, some interesting ideas emerged about the state of kumis consumption in contemporary Kazakhstan from the producers during the interviews and my own analysis of the qualitative data, therefore, this made me want to test and compare my qualitative data in the form of in-person and online survey responses. It is important to mention that due to the surveys being launched at different points and collecting slightly different data they are not completely comparable. This means that I used the in-person surveys to check first the consumer's habits of drinking kumis in places in the city such as the bazaars and supermarkets to compare the responses of people I actually saw purchasing kumis with the responses of people from social media who may or not be as frequent of consumers of kumis. Below you can find the questions asked in the Social Media Survey, some of which were also asked earlier in the in-person surveys at the bazaar and supermarket. The social media survey was launched last; therefore, the quality of the questions is more refined than the earlier surveys. This survey tried to get at the reasons behind why people buy kumis, the sensorial qualities they prize, and the seasons when they buy kumis and the season when they consider is best to buy the beverage (See **Table 3**).

**Table 3.** Survey for buyers of kumis in Social Media in Russian and English language.

<b>Question/Answer Type</b>	<b>Russian</b>	<b>English</b>
Closed type with preselected answers <ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> </ul>	Укажите ваш пол:	What is your gender?
Closed type with preselected answers <ul style="list-style-type: none"> <li>• Less than 22,</li> <li>• 23-37,</li> <li>• 37-53,</li> <li>• 45-72</li> <li>• more than 72</li> </ul>	Сколько Вам лет?	How old are you?
Closed type with preselected answers <ul style="list-style-type: none"> <li>• Kazakh</li> <li>• Russian</li> </ul> Allowed open answer for other language. <ul style="list-style-type: none"> <li>• Other</li> </ul>	На каком языке вы предпочитаете говорить дома?	What language do you prefer to speak at home?
Closed type with preselected answers <ul style="list-style-type: none"> <li>• Most common oblasts and cities were provided</li> </ul>	Откуда Вы родом?	Where were you born?
Closed type with preselected answers <ul style="list-style-type: none"> <li>• Most common oblasts and cities were provided</li> </ul>	Укажите, где Вы живете сейчас?	Where do you live now?
Closed type with preselected answers <ul style="list-style-type: none"> <li>• In Childhood,</li> <li>• As a Teenager,</li> <li>• As an Adult</li> </ul>	Когда вы в первый раз пили кумыс?	When did you first drink kumis?

(continued)

Question/Answer Type	Russian	English
Closed type with preselected answers <ul style="list-style-type: none"> <li>• answers for different frequencies provided</li> </ul>	Как часто вы пьёте кумыс?	How often do you drink kumis?
Closed type with preselected answers <ul style="list-style-type: none"> <li>• At home</li> <li>• At a restaurant</li> <li>• At family celebrations</li> <li>• At <i>Kumishanas</i></li> <li>• At fairs or festivals</li> </ul>	Где вы чаще всего пьете кумыс?	Where do you usually drink kumis?
Question allowed respondents to select multiple answers for all seasons they drink in. <ul style="list-style-type: none"> <li>• Spring</li> <li>• Summer</li> <li>• Autumn</li> <li>• Winter</li> </ul>	Выберите все времена года, когда вы пьете кумыс	What time of year do you drink kumis?
Allowed for only one answer. <ul style="list-style-type: none"> <li>• Spring</li> <li>• Summer</li> <li>• Autumn</li> <li>• Winter</li> </ul>	В какое время года лучше всего пить кумыс?	What is the best time of year to drink kumis?
Three preselected options were provided as well as an open response box for “other” preselected answers: <ul style="list-style-type: none"> <li>• because the horses eat fresh grass.</li> <li>• because the taste is better.</li> <li>• because there are more vitamins in it</li> <li>• Other</li> </ul>	Если вы выбрали в какое время года лучше всего пить кумыс, выберите самый важный фактор почему:	What is the reason you picked for the best season to drink kumis?
Ranking question where individuals moved options around Taste Smell Freshness Color Acidity	Что вам нравится в кумысе? (Пожалуйста, оцените ваши ответы от 1 до 5, где 1 является наиболее важной причиной и 5 наименее важной причиной для покупки кумыса):	Why do you like kumis? Please rank the following reasons from 1 to 5, where 1 is the most important and 5 the least important, for why you buy kumis

(continued)

Question/Answer Type	Russian	English
Closed type with preselected answers Named 7 types and “I don’t know these types”	Какой ваш любимый кумыс?	What is your favorite kumis?
Ranking question where individuals moved options around, and could enter an “other” option into the ranking <ul style="list-style-type: none"> <li>• I like the taste</li> <li>• For Health</li> <li>• Because it is part of my tradition and culture</li> <li>• It is a local product</li> <li>• Someone recommended it to me</li> <li>• Other</li> </ul>	Вы покупаете кумыс потому что (Пожалуйста, оцените ваши ответы от 1 до 5, где 1 является наиболее важной причиной и 5 наименее важной причиной для покупки кумыса. Если вы выбрали "Другие причины," пожалуйста, напишите причину):	Why do you buy kumis rank the following reasons from 1 to 5, where 1 is the most important and 5 the least important, for why you buy kumis?
Closed type with preselected answers <ul style="list-style-type: none"> <li>• At Bazaars</li> <li>• At the Supermarket</li> <li>• From a local producer</li> <li>• From a store that features “Made in Kazakhstan” products</li> <li>• From a small neighborhood market</li> </ul>	Где вы обычно покупаете кумыс?	Where do you usually buy kumis?
Four of the most common brands in Nur-Sultan and Almaty were provided, along with an open response box for other, and the answer “brand doesn’t matter”	Какой ваш любимый бренд кумыса?	What is your favorite brand?
Four closed type with preselected answers, along with an open response box for other, and the choice “I do not buy one particular brand” <ul style="list-style-type: none"> <li>• Price</li> <li>• Taste</li> <li>• Packaging and Design</li> <li>• A recommendation</li> <li>• I do not buy one brand</li> <li>• Other (open ended)</li> </ul>	Почему вы предпочитаете свой любимый бренд?	Why do you buy your favorite brand?

(continued)

Question/Answer Type	Russian	English
Closed type with preselected answers <ul style="list-style-type: none"> <li>• 500ml</li> <li>• 1L</li> <li>• 2L</li> <li>• 5L</li> <li>• More than 10L</li> <li>• The volume doesn't matter</li> </ul>	Какую объем кумыса вы обычно покупаете?	What volume of kumis do you usually buy?
Open ended	Вы можете посоветовать нам, где в Вашем городе продаётся самый лучший кумыс?	Can you recommend the best place to buy kumis in your city?
Open ended <ul style="list-style-type: none"> <li>• Less than 149 999</li> <li>• 150 000 to 299 999</li> <li>• 300 000 to 449 999</li> <li>• 450 000 to 599 999</li> <li>• 600 000 to 749 000</li> <li>• 750 000 to 999 999</li> <li>• More than 1 000 000</li> <li>I prefer not to say</li> </ul>	Какое из этих чисел (в тенге) описывает ваш месячный доход?	What is your monthly income in tenge?

*Note:* For the case of the supermarket and bazaars, the surveys were launched earlier and did not include all the questions above.

Deciding who should be considered as a consumer of kumis has been a challenging task for marketing specialists to achieve due to the lack of studies in Kazakhstan that focus in analyzing the sensorial properties of fermented milk products. Since there is still no scholarship in Kazakhstan that has reported research projects focused in studying the relationship between hedonic scales and consumer's enjoyment of milk products, our starting point for the present project was to analyze the relationship of scholarship in the Anthropology of Senses area with the results

obtained during the collection of responses from the survey. The main research questions to conceive as part of this section in the present document are the following: is there a relationship between the places that consumers choose for themselves to buy kumis? What leads the consumers pursue kumis in this location? Could it be possible to describe a particular “Nur-Sultan” “Almaty” taste? Which sensorial properties preferred by the consumers could help specialists on marketing to develop innovative products catering to each generation’s food preference? The responses obtained by consumers in the bazaar and supermarket of the cities of Nur-Sultan and Almaty and the producers or sellers from the places object of study will provide a clear picture about what consumers are looking for to enjoy in kumis and how can producers contribute to create more awareness in the consumption of kumis by the Kazakhstani population.

The consumers of kumis from the present study were persons from 18-72 years old. To make easier the visualization of the consumers’ trends, four age groups were proposed: less than 22 years old, 22-37 years old, 38-53 years old, and 54-72 years old. At first sight, the age breakdowns between the groups may seem big and unrelated to any of the generation definitions such as Gen X, Millennial, or Baby boomer. The choice in choosing this age breakdowns was based not due to me wanting to study the consumption of kumis vs generational gaps, but because I thought that some persons might have felt uncomfortable in disclosing their real age. This age ranks were thought thinking in the study age of the participants, the average ages they start their work experience or become the families’ breadwinners, and the retirement age of the local Kazakhstani population. According to a report published by the portal egov.kz<sup>17</sup>, the current retirement age for women and men in Kazakhstan

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<sup>17</sup> Age of labor and retirement in Kazakhstan: [http://egov.kz/cms/en/articles/pensionnaya\\_sistema](http://egov.kz/cms/en/articles/pensionnaya_sistema).

is 63 and 58 years, respectively. In terms of the initiation of higher education, Kazakhstani students are enrolled in the university between the ages of 17-22 years old. As soon as the students finish their Bachelor studies, the majority chooses to continue with Master or PhD. studies, also many of the students to pay for their living costs in the main cities of Kazakhstan are involved in job activities. As soon as they start their working experience, most of the students are thinking in getting married and forming a family. The Tengri news portal <sup>18</sup> reports that the average age on getting married is 24.3 years. The purpose of extending this year gap group till 38 years old lies in considering the population as active workers who can purchase kumis from either the supermarkets or the bazaars in company of their families. As for the population from 38 to 53 years old, I wanted to explore their patterns of purchasing kumis and the reason why they buy it, since they belong to an age group that has likely finished any post-graduate studies, has been in the workforce for a number of years, or if they chose to marry and raise a family, are likely further along on this path rather than those who are 24 to 37 years old. Although not everyone has children, and people can have children over many decades of their life, in Kazakhstan many individuals in this age range if they have had children will have done so earlier, and these children may be in primary or secondary school at this point. These consumers may have slightly different desires than those in other age ranges. Also, as people start to enter this stage of their life, they may begin to show more concern about their health and taking care of it with the help of a healthy diet <sup>19</sup>. This age

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<sup>18</sup> Marriage age in Kazakhstan: <https://en.tengrinews.kz/people/80-of-Kazakhstan-women-get-married-when-they-are-under-25-10467/>.

<sup>19</sup> Kazakhstan health: <https://eurasianet.org/as-kazakhstans-economy-regains-vigor-concerns-shift-to-healthcare>

range represents those Kazakhstanis who are preretirement, and for some in the age range one (less than 22 years old) might consider them “middle aged” individuals.

Also, I was interested in seeing if any of these age groups showed greater concern towards not only keeping a good state of health through natural ingredients, but also choosing to consume kumis due to a belief about kumis curative properties, that they have heard about from folklore and the belief that their ancestors drank it for this reason multiple generations before the usage of Western medicine practices. Finally, I was interested in any age group if drinking kumis was a way to reconnect to their roots and culture, beyond these issues related to health.

Other interesting variables analyzed per age groups were sex, the language they speak at home, their place of birth, how frequently they consume kumis, when do they started to consume the drink, where do people enjoy drinking kumis the most, the seasons they drink kumis, the favorite season to drink kumis according to their personal opinion and the reasons that lead them to choose this particular season, which sensorial properties they like about the drink, if there is awareness of a preferred kumis brand per region, and the presentation they usually take with themselves home. Before disclosing further information about the correlation between variables to understand the consumer’s behavior, I will describe the number of participants and methods of data collection for the online and in-person surveys.

### **Data and analysis of the consumers’ responses in-person and online**

The total responses collected from both the in-person survey and the digital survey were 103. To analyze the variables, the responses were divided in terms of sex, age, birthplace, and language used at home. Among the 103 responses obtained, 23 came from the bazaar, 19 from the supermarket, and 61 were collected from the

digital survey. It is important to mention that the population size for the online survey fluctuated in the number of collected responses from 55 to 61 due to the survey being configured in not forcing responses to the participants. This caused that some of the participants left questions without being answered. In terms of the data, for the tables that present statistical information in percentage, the values were rounded and so sometimes the columns may add to 99% or 101%. The geographic and financial information about the income and place of origin of our participants was requested only through social media considering that it could have been a very sensitive question to ask to the participants on site.

### **Basic Demographic Description of Three Surveys**

The in-persons surveys were printed and given to the customers to answer on site while the digital survey link was shared on social media and via email to interested parties. For both surveys, the participants had the power of choice to decide in which language they were interested in answering the questions, either in Russian or Kazakh. In terms of sex, from the bazaars, 9 responses coming from men and 14 from women were collected, from the supermarket setting, three men and 16 women responded, and from the online survey, 25 men and 34 women answered the questions in the survey (see **Table 4**).

**Table 4.** Participants of the study per sex.

	<b>In Person Bazaar (N=23)</b>	<b>In Person Super Market (N=19)</b>	<b>Social Media Survey (N=61)</b>
Male	39%	16%	43%
Female	61%	84%	57%

In terms of language from the social media survey, 46% of the respondents answered that they prefer to speak Kazakh at home, 39% prefer to speak Russian at home, and the remaining 7% speak a mix of Russian, Kazakh or other languages at home.

In all three surveys, most respondents come from the age group 22-37 years old with around 42% of the sample respondents falling into this age category (see **Table 5**). The biggest differences are that in the social media survey, the youngest demographic (i.e., less than 22 years old) is represented at a higher rate, while those 54 years old and over, are perhaps underrepresented due to the data being collected via an internet survey. The oldest members of society, those 73 years and older are very underreported. They are not in the bazaar or social media samples. There are only 2 respondents in this age group, from the supermarket survey. Because the social media survey has the largest sample, most of the discussion later in this chapter by age will focus on that data.

**Table 5.** Survey samples by age.

<b>Age Group</b>	<b>In Person Bazaar (N=23)</b>	<b>In Person Super Market (N=19)</b>	<b>Social Media Survey (N=61)</b>
Less than 22 Years Old	9%	16%	21%
22-37	43%	42%	43%
38-53	35%	20%	33%
54-72	13%	11%	3%
73 - 90	0%	11%	0%

For the in-person surveys, I did not collect income data. This question was later added to the social media survey (See **Table 6**). From the 61 participants, 29% disclosed that their monthly income is calculated between 150,000 to 300,000 tenge, while 26% preferred to maintain their income anonymous.

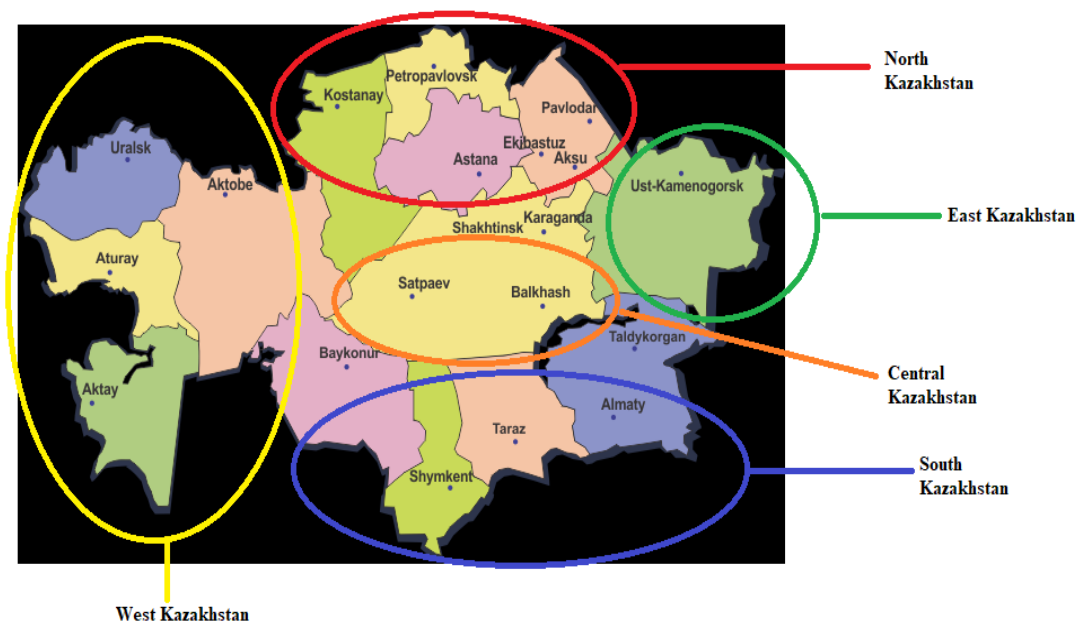
**Table 6.** Average income of the population object of study in social media.

Average salary	Social Media Income (N=61)
Less than 149 000	16%
150 000 to 299 000	29%
300 000 to 449 000	18%
450 to 599 000	0%
600 to 749 000	3%
750 000 to 999 000	5%
More than 1 000 000	3%
I prefer not to say	26%

The two in-person surveys did not collect geographic information, but the social media survey asked where people were born and where they currently live. In terms of the birthplace of the respondents from social media, 15 persons indicated they are from North Kazakhstan, 7 from Central Kazakhstan, four from East Kazakhstan, 9 from West Kazakhstan, and 24 from South Kazakhstan. In my classification of North Kazakhstan, I included Nur-Sultan, Pavlodarskaya oblast, Kostanayskaya oblast, Akmolinskaya oblast, and Severo-Kazajstanskaya oblast <sup>20</sup>. For Central Kazakhstan only the Karagandinskaya oblast was considered. For East Kazakhstan the Vostochno-Kazajstanskaya oblast (Ust-Kamenogorsk). For West Kazakhstan the Aktyubinskaya oblast, Mangistauskaya oblast, Aktauskaya oblast, and Zapadno-Kazajstanskaya oblast, and for South Kazakhstan Almaty city,

<sup>20</sup> Severo, from “sever” in Russian language: north. “Oblast” in Russian language: province.

Almatinskaya oblast, Turkistanskaya oblast, Zhambylskaya oblast, Kyzylordinskaya oblast, and Shymkent (See **Image 23**).



**Image 23.** Divisions of the Republic of Kazakhstan.

From the participants, 46 people currently live in Nur-Sultan, and of these 17 moved from the South, 7 from the West, 6 from the Central region, 3 from the East. Although, 13 of the Nur-Sultan residents are from the North, only 3 indicated that they were born in Nur-Sultan.

### **General Trends in the Survey**

After collecting this basic information about demographics, the surveys then asked a series of questions about how often people drink kumis, where they like to drink it, why they drink it, a series of questions about seasonality and times of the year consumers drink kumis, the types they are familiar with, the brands they like, where they most often buy kumis, the sensorial qualities they prize, factors that are

important to them in purchasing, and the quantities they most often purchase. Before moving into deeper analysis comparing multiple variables, I want to first describe the basic findings of three surveys where possible. For some questions, I will only discuss the social media sample as certain questions were only added later. All three surveys asked about frequency of consumption in the form of the question “How often do you drink kumis”?

Depending on when the survey was launched there were various responses available. In order to make the trends more understandable, I have grouped anyone who picked “I drink weekly” or “I drink kumis a few times a week” as the *Most Frequent Consumers*, I grouped anyone who picked “I drink monthly” or “I drink a few times a month” as the *Medium Frequent Consumers*, and I grouped those who picked “I drink kumis a few times a year” as *Least Frequent Consumers*.

When looking at the responses to the question “How often do you drink kumis”, the % of people who answered that they are the most frequent consumers of kumis was much higher for the in-person survey than compared to those who took the social media survey. If we were to only look at the data from the in-person surveys, it might appear that there is a high percentage of very frequent consumption of kumis. But this should be viewed with caution. When looking at the social media responses, this survey shows that most people are very infrequent consumers of kumis (see **Table 7**). Because all the samples are quite small, it is hard to generalize the true rate of consumption in Kazakhstan. Thus, for future research projects, in the in-person survey the question of how often you consume kumis should be added, and the collection of responses should include the visited bazaars and, increase the choice to consider other bazaars in Nur-sultan and Almaty.

**Table 7.** Frequency of kumis consumption per place object of study.

	<b>In Person Bazaar (N=23)</b>	<b>In Person Super Market (N=19)</b>	<b>Social Media Survey (N=61)</b>
Most Frequent Consumers	61%	32%	7%
Medium Frequency Consumers	16%	26%	21%
Least Frequent Consumers	22%	42%	72%
Total	99%	100%	100%

When asked “When did you first drink kumis”? Eighty percent of the respondents from the social media survey answered that they first tried it in childhood (see **Table 8**). This response may seem a little bit controversial due to kumis being labeled by the local population as a beverage that has a slightly alcoholic content. According to **Minjigdorj (2012)**, a Mongolian chemical engineer who studies biochemical reactions in fermented milk products, it is reported that the chemical composition of mare’s milk is the following: 11% total solids, 2.0% fat, 6.6% lactose, 2.2% protein, and 0.3% ash. The lactose due to biochemical reactions during the fermentation process is transformed into ethanol. Depending on the dosage, ethanol can make a person sleepy.

Why the Kazakhstanis despite the alcoholic content start consuming kumis since childhood could be attributed to preserving the tradition of drinking kumis for ritual purposes. In the oral tradition, as described by **Malone (2018)**, an Australian anthropologist who is an expert on urban ecologies and early childhood studies says that in Central Asia, mothers frequently make their children drink warm kumis as a nightly ritual to make them have a good sleep where according to the beliefs of the

local population, the mother figure requests subconsciously the forces of earth to protect their children against evil through the sipping of kumis. This aspect symbolizes that some sectors of the local Kazakhstani population drink kumis guided by their families to connect to their ancestors and claim closer ties to the homeland.

**Table 8.** Age when respondents first drank kumis from social media survey.

	<b>When did you first try kumis? (N=61)</b>
In childhood	80%
During teenage days	11%
In adulthood	8%
Total	100%

The social media survey asked respondents about the locations they consume kumis. When asked about the location they most often drink kumis, most respondents mentioned that they drink it at home, with 51% answering this way. Respondents also drink kumis frequently at family celebrations with 34% selecting this as the most common place they drink it (see **Table 9**). For me, asking about their preferred location to consume kumis was important in order to find out if kumis consumption was a drink restricted only to enjoy it during life-cycle festivities such as weddings or if indeed there were population groups that decided to buy kumis for their personal enjoyment and the enjoyment of their families. Therefore, the majority answering that they enjoy drinking kumis at home is not surprising because people in Kazakhstan, according to Almagul, usually gather during the weekend to share meals and enjoy each one's company:

Because people have guests during the weekend, so they do not just buy for themselves.

In Eurasia, most people come to buy kumis from 12-15 pm on Saturdays and Sundays <sup>21</sup>.

**Table 9.** Location where consumers most often drink kumis.

Place	Where do you most often drink Kumis? (N=61)
Home	51%
At Family Celebrations	34%
Kumishana	7%
In a Restaurant	5%
At Festivals or Fairs	3%
Total	100%

The social media survey asked where you most often buy kumis. Most respondents answered, “with local producers”, with 71% picking this choice. About 18% said they most often buy kumis at the bazaar, and 8% selected the supermarket, while only 2% selected at stores featuring “made in Kazakhstan products” (see **Table 10**).

**Table 10.** Where social media consumers most often buy kumis.

	Where do you most often buy Kumis? (N=60)
Bazaar	18%
Supermarket	8%
With local producers	71%
In stores with “Made in Kazakhstan” products	2%

<sup>21</sup> Almagul (2018, July 5). Personal interview.

When the social media survey asked about what quantity they usually buy, most respondents answered that they buy 1L at a time (see **Table 11**). Above, I noted that most people still prefer to buy from local producers. In the social media survey there were 12 respondents who said that they most often buy 5 liters or more than 10 liters, of these respondents two people didn't say where they like to buy most often, but 9 out of 10 remaining said that they like to buy from the producers, and one picked at the bazaar.

**Table 11.** Most common quantities bought by the clients.

<b>Presentation</b>	<b>Usual quantity bought (N=61)</b>
500 ml	5%
1 Liter	34%
2 Liters	23%
5 Liters	16%
More than 10 Liters	3%
The quantity isn't important to me	18%

I was interested in teasing out what people's most important motivations are for drinking kumis. The survey asked them to rank 6 reasons they might choose to drink kumis from most important to them to least important to them. These factors were presented in the following order in the survey: "I like the taste of kumis", "for health", "Because this is our tradition and culture", "I prefer to buy local products", "because I was recommended to buy kumis" and "other reasons". The survey respondents were asked to move the rankings around, and there could be a danger that some respondents left the rankings in the order they were presented. However, it seems that most did truly answer this question because the rankings did not stay 100% in the order the survey presented them. A total of 55 of the 61 respondents on social media ranked these reasons. Most respondents picked the most important

reason to them as taste, and the 2<sup>nd</sup> most popular reason was for health, with 44% and 35% respectively (see **Table 12**).

**Table 12.** Social media consumers' #1 reason for drinking kumis.

	<b>What is the most important reason you drink kumis? (N=55)</b>
Taste	44%
Health	35%
Tradition and Culture	7%
Local Products	5%
Someone Recommended me to drink	5%
Other	4%
Total	100%

Throughout my interviews with sellers at the bazaars and the producers, certain sensorial qualities were mentioned multiple times. These include taste, freshness, acidity, smell, and color. Additionally, the quality “sweetness” appeared often, but this detail emerged after starting the survey collection. Unfortunately, I did not ask respondents about “sweetness”. We cannot assume that taste is the same as sweetness, because while some people prize sweet kumis this may not be universal. I would recommend that future researchers, perhaps change this question to include “sweetness” as a sensorial quality. Majority of the social media respondents picked “taste” as the most important quality for what kumis they like, with 58% picking it. About 19% said freshness was more important. For some – about 15 – acidity is a very desirous quality (see **Table 13**). For a very small part of social media respondents, the qualities of smell and color, are the most important sensorial ones. Later in this chapter, I will discuss if preference for these qualities correlate in anyway with gender or age, or even ideas about seasonality.

**Table 13.** Social media consume' favorite sensorial qualities of kumis.

	<b>What Sensorial Quality is most important to you (N=59)</b>
Taste	58%
Freshness	19%
Acidity	15%
Smell	3%
Color	5%
Total	100%

I wanted to know how familiar social media users were with types of kumis and if they had a preference. What gave me the hint about the different types of kumis existing in the market were the interviews I conducted with sellers and producers of kumis before the survey launching. Amanbek from Big Shanhai bazaar, Bakhyt from Qazaq house, and Yerubay from Boz bie in Almaty provided me with information about the types of kumis known by certain members of the population in Kazakhstan. The name assigned for each type of kumis depends on its period of fermentation, color, and flavor. The classification of kumis was translated from Russian into English language (**Table 14**).

**Table 14.** Kumis classification per days of fermentation.

Type of kumis	Characteristics
<i>Uyz kumis</i>	One day of fermentation maximum, kumis coming from the first milking process.
<i>Tay kumis</i>	Kumis of a one-day fermentation process.
<i>Bal kumis</i>	Two days of fermentation. White to yellow coloration in the liquid's surface. Sweet-flavored. Type of kumis preferred by the population of Nur-Sultan and Almaty. Sometimes, at home, people add <i>kazy</i> to enhance the taste of the drink.
<i>Sary kumis</i>	Three days of fermentation, white to yellow coloration, slightly sour flavored.
<i>Kunan kumis</i>	Three days of fermentation
<i>Tunemel kumis</i>	Four days of fermentation, white colored, a little bit acidic in flavor. It is usually prepared during the autumn.
<i>Besti kumis</i>	Five days of fermentation. White colored. Sour flavored. This is the type of kumis usually sold during the winter.

**Table 15.** Favorite type of kumis among social media respondents.

	What is your favorite type of kumis (N=61)
<i>Uyz kumis</i>	2%
<i>Tay kumis</i>	10%
<i>Bal kumis</i>	5%
<i>Sary kumis</i>	7%
<i>Kunan kumis</i>	10%
<i>Besti kumis</i>	13%
<i>I do not know the types</i>	54%

When I launched the survey, I asked the participants which type of kumis was their favorite: *Uyz*, *tay*, *bal*, *sary*, *kunan*, and *besti*. I also allowed the answer “I didn’t even know there were these types of kumis.” Majority of respondents – 54% -- did not know about these types. About 13% picked *besti*, as their favorite, 10% pick *tay* and 10% picked *kunan* (see **Table 15**). Later in this chapter I will look at preferred language spoken at home and if there is more awareness of these types or not. I will also look at gender and preference for these types, as some might be grouped into sweetness levels (i.e., *uyz*, *tay* and *bal* being the sweetest, *sary* and

*kunan* being midrange in terms of sweetness, and *besti* being the sourest of these named types) and producers noted in interviews that women typically like sweeter kumis.

Now that I have described some general findings of the survey, at this point, I would like to examine some variables more in depth: Gender, Age, Language, Geography, and Sensorial Qualities.

## **Gender**

When I launched my in-person surveys in these spaces, not everyone wanted to take part and the sample sizes were small and biased toward female respondents being more willing to take part. Nevertheless, something interesting emerged during the participant observation process where I saw that women were usually accompanied by their families to buy kumis and rarely, I saw the presence of only one man going to a kumis stall to purchase kumis. The practice of buying of kumis from the bazaars and the supermarkets instead than with local producers might be slowly changing due to the distance and time it takes to travel from the city to the neighboring villages of Nur-Sultan or Almaty. It would be interesting to relaunch this survey in the future to see if the % of people who most often buy kumis at the bazaar or supermarket increases through time. Earlier I noted that that 18% of the social media respondents like to go to the bazaar while 9% prefer the supermarket. I wanted to explore this question further and was curious if there was any gendered difference in the places men vs. women prefer. More male respondents than female respondents prefer the bazaar (See **Table 16**). This is from the social media survey. This is interesting because my actual samples of the in-person surveys at the bazaar and supermarket are biased towards female respondents. It is hard to say if these

three surveys are capturing different consumers, or if there is just a bias that women were more open to taking part in my research, even if men might prefer to shop for kumis at the bazaars. In order to answer this, larger samples of all three surveys might be needed. Additionally, if a person could do participant observation at the bazaars and supermarkets over the course of some weeks, they could take a count of who is buying kumis in these spaces in a more systematic way.

**Table 16.** Most common place people shop for kumis by gender.

	<b>Male (N=23)</b>	<b>Female (N=29)</b>
Bazaar	30%	18%
Supermarket	9%	10%
With local producers	61%	69%
In stores with “Made in Kazakhstan” products	0%	3%
Total	100%	100%

Although most people who answered the social media survey still prefer to buy from local producers, there are those who prefer other places like the bazaar. These clients that have decided to change their shopping of kumis to the bazaar have resorted in forging a trust relationship with a seller from whom they can order the exact volume they need and agree on the hour of picking-up the product at the stall. For these transactions, the communication is done through WhatsApp.

Almagul and Karlygash, two sellers from the Eurasia bazaar in their 40’s of Kazakh ethnicity, told me that since the demand for kumis is very high during the weekends, especially during the summer season, they provide to all their clients with small cards that include their contact details for the client to get in touch with them,

agree on the day and hour they will come, how many liters they will need, and if they will come with their own plastic gallons or not to transport the kumis. In case a seller doesn't have small cards to offer, the client can leave their contact details in a notebook they destinate for writing "special requests" of products.

But if you would like to order kumis, you can write your number here in this notebook and I can call you right away<sup>22</sup>.

They (the clients) make an order in advance through WhatsApp during the weekends, then they arrive two-three hours later and carry the drink home (usually men with their wives come)<sup>23</sup>.

Nuriya another seller of mixed Kazakh-Tatar ethnicity and Almagul, told me about the reasons why people buy kumis from the bazaars and the usual clients that come to their stall.

During the weekend (on Saturday and Sunday all day), they buy for their families, when they have guests<sup>24</sup>.

Because people have guests during the weekend, so they do not just buy for themselves. Also, they buy for parties such as *toy* or *kыз узату*<sup>25</sup>.

Even though Karlygash told me that usually men accompanied by women come to the bazaar to take home kumis, there was a new idea that emerged after the interviews with the sellers of Eurasia which I wanted to test. This idea was related to explore if a difference in frequency of consumption between men and women exists, and who among them should be considered as a more avid consumer of kumis.

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<sup>22</sup> Almagul (2018, July 5). Personal interview.

<sup>23</sup> Karlygash (2018, July 5). Personal interview.

<sup>24</sup> Nuriya (2018, July 5). Personal interview.

<sup>25</sup> Almagul (2018, July 5). Personal interview.

**Table 17.** Frequency of kumis consumption per sex.

	<b>Bazaar Male (N=9)</b>	<b>Supermarket Male (N=3)</b>	<b>Social Media Male (N=25)</b>	<b>Bazaar Female (N=14)</b>	<b>Supermarket Female (N=16)</b>	<b>Social Media Female (N=34)</b>
Most Frequent Consumers	50%	67%	16%	33%	25%	3%
Medium Frequency Consumers	14%	0%	24%	25%	31%	21%
Least Frequent Consumers	36%	33%	60%	42%	44%	76%
Total	100%	100%	100%	100%	100%	100%

During my interviews with producers they had a belief that women may only drink kumis if this is purchased by their spouses or any male member from their families or also, they may only consume the drink in life-cycle festivities such as *toy* or *kiz uzatu*. However, looking at the above data from all three surveys the picture is “muddled”. One “gendered” pattern that did emerge regardless of where the survey was given, is that men tend to consumer kumis more frequently than women. In **Table 17**, for all the three survey launches, males show a higher percentage of consumption. In terms of the “most frequent” consumers, males at the supermarket in this category were 67%, while females were only 25%, and in the social media sample 16% of males answered they were most frequent consumers vs. only 3% of women on social media. The women at the bazars and supermarkets are consuming more frequently than the social media women. So in terms of the producers’ belief it is impossible to totally refute or support this idea of limited consumption of women being tied to life-cycle celebrations. It is clear that there are a small group of women who drink kumis more frequently, but what about 76% who say they only do it a few

times a year? And are the men really that different? The males from social media who only drink a few times a year are about 60% of the respondents.

So, there is a slight pattern where men may drink more frequently. But in terms of largest sample from social media, generally both males and females surveyed only seldom consume kumis drinking it only a couple of times a year. Seeing this, might one not also ask if most men surveyed also only consume kumis at life-cycle festivities? It's hard to say if there is any basis to the producers' belief about gender and kumis consumption. We also don't know how to totally interpret the levels of consumption reported by women at the bazaars and supermarkets – which is much higher. It seems likely that there are quite a few consumers whose drinking is tied to celebrations, but whether this is a “male” or “female” pattern cannot be stated. More research is needed to explore this issue.

So, if the slightly higher rates of consumption by men are real, then the question arises whether kumis drinking functions differently for men and women. Do women feel less of a connection to drinking it in terms of health or connectedness to tradition and culture of their ancestors. I will explore the motivations for drinking further below.

Above I reported the general rankings for reasons to buy kumis, where majority of respondents, both male and female, seem to pick that they drink kumis because of two factors: they simply like the taste of it or they think it is healthy. I wanted to see if there was any difference in how men and women ranked the reasons for drinking kumis. Men seem to be evenly split in terms of the % who pick taste and health as the first reason, whereas women seem to pick “taste” as the most important reason at a slightly higher rate (see **Table 18**). When we look deeper at all

the rankings in relation to each other (i.e., average ranking), men rank the reason of health slightly higher than do women. A smaller percentage of both men and women find that connection to culture and tradition are the most important reason to drink kumis, with 8% of men ranking this first and 6.5% of women. In terms of wanting to buy kumis because it is a local product, 6.5% of women picked this reason first, while only 4% of men did.

**Table 18.** Reasons people drink kumis by gender.

	<b>Male Respondents Who Ranked the Reason #1 (N=24)</b>	<b>Male Average Ranking (1= Most Important, 6= Least Important)</b>	<b>Female Respondents Who Ranked the Reason #1 (N=31)</b>	<b>Female Average Ranking (1= Most Important, 6= Least Important)</b>
Taste	38%	2.2	48%	2
Health	38%	1.8	29%	2.2
Tradition and Culture	8%	3.3	6.5%	3.2
Local Products	4%	3.9	6.5%	3.5
Someone Recommended me to drink	8%	4.0	6.5%	4.5

Trying to figure out this issue of taste vs. sweetness is difficult. I didn't ask about sweetness directly. But above I discussed favorite types of kumis. Producers noted that women tended to prefer sweeter kumis. Was this assumption by producers supported by what the survey respondents said? Was there any way to test this? I grouped the types by sweetness. In general, most women from social media don't know these types of kumis. But for those who are familiar with a type, about 6% prefer those I grouped as sweetest: *uyz*, *tay*, and *bal*, and 21% prefer those that I grouped as middle sweet: *sary* and *kunan*. When we look at the sourest type I asked

about, i.e., *besti*, 20% of men prefer this whereas only 6% of women do. So, although the producers' intuition about women prizing sweetness more than men, is not completely upheld, as women seem to like a variety of sweetness levels as do men, more men do prefer *besti* (see **Table 19**). Later in this chapter, I will talk more about the scale of sweetness when I discuss the degustation experiment.

**Table 19.** Preferred types of kumis by gender.

		<b>Social Media Male (N=25)</b>	<b>Social Media Female (N= 34)</b>
Sweetest	<i>Uyz kumis</i>	4	0
	<i>Tay kumis</i>	12	3
	<i>Bal kumis</i>	8	3
Middle Sweetest	<i>Sary kumis</i>	16	6
	<i>Kunan kumis</i>	0	15
Most Sour	<i>Besti kumis</i>	20	6
I do not know the types		40	67
Total		100%	100%

## Age

After preliminarily looking to see if gender was a strong factor in why people buy kumis, I was curious if any patterns might emerge due to age instead. In the next chart, which focuses on the social media respondents, the consumers from all ages also choose to drink kumis primarily due to the same two parameters: taste and health with values fluctuating between 39% and 52% for taste, and 20% to 50% for health (see **Table 20**). It is interesting to note, that those who are less than 22 years old and those who are between 38 and 53 years old, seem to rank on average, reasons for health slightly higher than taste (see **Table 21**). So why might the youngest members of the sample and those in the third age group be more concerned with

health? Those less than 22 are often at university, living away from home for the first time, so they may be taking a more active interest in their health. Those in the third age group, could be also worried about aging. The 2<sup>nd</sup> age group, of young professionals, graduate students, and young families, might be too busy to be worried about health.

Curiously, the participants between the ages of 38 to 53 provided an interesting point disclosing that they consume kumis to reconnect with their traditions and culture (11%), in contrast with the responses provided by the younger populations of whom only 8% selected this reason. Another striking value was the small percentage of the two youngest age groups who ranked “someone recommended me to drink”, at 10% and 8% respectively (see **Table 20**).

Since it wasn't requested for the project to ask the participants to disclose their ethnic background, we cannot be certain what the ethnicity of these individuals is. Of these three individuals, two indicated that at home they prefer to speak Kazakh, and one said she prefers to speak Russian. In terms of where they were born, one was from Mangystau, one from Kyzylorda, and one from Kostanay. Thinking about Akmaral's statement from chapter 1, where she highlighted that people from other ethnic groups in Kazakhstan have started to incorporate kumis in their diets due to recommendations from their friends, we might interpret that as what is going on with the one respondent from Kostanay who prefers to speak Russian at home. Thinking more broadly though, we could be seeing some in the younger generation starting to drink kumis because a friend or family member recommends it to them. A future project, that tries to get a larger sample of non-Kazakh consumers could focus on their portion of the market and their desires and see if the

sensorial properties they seek tend to be the same as the sensorial properties prized by the Kazakh population.

**Table 20.** Reasons why people drink kumis per age groups.

	<b>Less than 22 (N=10) *</b>	<b>Age 22-37 (N=25) *</b>	<b>Age 38-53 (N=18)</b>	<b>Age 54-72 (N=2)</b>
Taste	30	52	39	50
Health	50	20	50	0
Local Products	0	8	0	50
Tradition and Culture	8	8	11	0
Someone Recommended me to drink	10	8	0	0
Total	98%	96%	100%	100%

\*One respondent picked “other” as 1<sup>st</sup> choice.

**Table 21.** Average ranking of reasons why people drink kumis per age groups.

	<b>Less than 22 (N= 10)</b>	<b>Age 22-37 (N= 25)</b>	<b>Age 38-53 (N= 18)</b>	<b>Age 54-72 (N= 2)</b>
Taste	2.6	2	2.1	1.5
Health	1.9	2.2	1.8	2.5
Local Products	4.4	3.4	3.8	3
Tradition and Culture	3	3.2	3.4	3.5
Someone Recommended me to drink	3.8	4.4	4.3	5

Looking across all three surveys (i.e., at the bazaar, at the supermarkets, and the social media survey) for patterns in consumption by age has proved challenging. There seems to be no pattern that holds across all three surveys. The first two from in person show much higher rates of consumption across age ranges than compared to the social media survey. This makes sense because these were the people I observed buying, and there is likely selection bias when I approached them about

taking my survey in person, that those who care about kumis might have answered at higher percent than those who don't. I expected to maybe find increasing rates of consumption as age grew, but there is no discernable pattern. When looking at all three surveys, the age group that is most consistent is that of 38 to 53-year olds. For this age, the most frequent consumers are between 23% and 25%, the middle consumers are between 25% and 33%, and the least frequent consumers are between 44% and 55%.

The most surprising thing to emerge in terms of examining the respondents age vs, the frequency of consumption, was is that the highest % for most frequent consumption came from an unexpected place. By age, those who self-reported as the most frequent consumers of the drink, were from the bazaar sample – with 90% of 22-37 years old's saying that they drink kumis at least weekly % (**Table 22**). When considering “most frequent” consumers, those city dwellers who are very busy, might be overrepresented in the bazaar sample. These people who are in the age range of post-graduate students or young professionals just starting their careers and families, might prefer to shop at the bazaar where they can find kumis of high quality and a good price.

The in-person survey samples were quite a bit smaller than the social media one, where the results showed that by age categories the participants who are classified as the least frequent consumers of the drink encompass between 44%-100%. Both 54 to 72-year olds said they only drink it a few times a year, after these the least frequent consumers in order are those less than 22 years old, and those 22 to 37 years old, with 85% and 81%, respectively (**Table 24**).

Finally, the oldest demographic was only found at the supermarket (**Table 23**). There were two individuals over 72 years old took the survey. This could be because they do not want to go to bazaar and shop closer to home if their mobility might be limited. Also, while at the supermarket I had an interesting conversation with participants who were between 54-72 years old. While I was collecting responses, the people from this age with whom I struck conversations with came accompanied by younger men, I assumed either their grandchildren or their sons. They said that they bought kumis from the supermarket because there are certain periods of the year, especially during autumn or winter, where supermarkets have discounts and these discounts can apply to kumis, the discounts lower the price of kumis up to 150 tenge making it a perfect option to buy it from the supermarket instead of doing the trip to the bazaar due to the cold weather conditions, especially in the North and East regions of Kazakhstan.

The persons from this generation reported that if not wanting to go to the supermarket, their grandchildren, sons or daughters go to the bazaar to buy kumis for them. Despite only five responses in total were collected from the in-person surveys, the responses provided the hint to focus my attention for future research in discerning if members of the older demographic might start favoring the consumption of the drink as a therapeutic agent to maintain their good health, or due to price discounts, or some other reason.

**Table 22.** Frequency of consumption per age from in-person at Bazaar.

	<b>Less than 22 Years Old (N= 2)</b>	<b>Age Group 22-37 (N= 10)</b>	<b>Age Group 38-53 (N= 8)</b>	<b>Age Group 54-72 (N= 3)</b>
Most Frequent	50%	90%	25%	33%
Middle Frequent	50%	10%	25%	33%
Least Frequent	0%	0%	50%	33%
Total	100%	100%	100%	100%

**Table 23.** Frequency of consumption per age from in-person at Super Market.

	<b>Less than 22 Years Old (N= 3)</b>	<b>Age Group 22-37 (N= 8)</b>	<b>Age Group 38-53 (N= 4)</b>	<b>Age Group 54-72 (N= 2)</b>	<b>Age Group 73-90 (N=2)</b>
Most Frequent	67%	12%	25%	50%	50%
Middle Frequent	0%	25%	25%	50%	50%
Least Frequent	33%	63%	50%	0%	0%
Total	100%	100%	100%	100%	100%

**Table 24.** Frequency of consumption per age from social media.

	<b>Less than 22 N= 13</b>	<b>Age 22-37 N= 26</b>	<b>Age 38-53 N= 18</b>	<b>Age 54-72 N=2</b>
Most Frequent	0	0	23	0
Middle Frequent	15	19	33	0
Least Frequent	85	81	44	100
Total	100%	100%	100%	100%

## Geography

I was curious if there was any pattern between a person's birthplace and the age, they first tried kumis. There is not a strong pattern (see **Table 25**). Majority of respondents, regardless of where they were born, first tried kumis in childhood. Very few people picked that they waited until they were adults to try the drink, with these few individuals coming from the West and the South.

**Table 25.** Birthplace of the participants versus starting age of kumis consumption.

	<b>North (N= 15)</b>	<b>Central (N=7)</b>	<b>East (N=4)</b>	<b>West (N=9)</b>	<b>South (N=24)</b>
In childhood	60%	57%	75%	67%	63%
During teenage days	40%	43%	25%	22%	33%
In adulthood	0%	0%	0%	11%	4%
Total	100%	100%	100%	100%	100%

In general, I had a lot of questions about whether geography might affect some variables, like rate of consumption or even questions about seasonality. These will be discussed below, but first I want to turn toward language.

The importance of including geographical aspects for the present project, was to analyze the relationship between the native language of the participants and their birthplace, learn if a relationship exists between the language spoken at home with the reasons why the customers decide to drink kumis, how well the customers know about the different types of kumis having Russian, Kazakh or a mixture of both as a native language, how the language choices of the participants affect their enjoyment of kumis, and also, explore the connection between seasonality, nature, and sensorial properties of kumis.

## **Language**

According to the survey's results, 28 participants disclosed that they prefer to speak Kazakh at home, 24 persons claimed to use only Russian as a native language, one person confessed using both languages simultaneously, and two participants disclosed that they used a mixture of both Russian and Kazakh. From the information presented in the table, the Kazakh speaking population comes from

West and South Kazakhstan, while the Russian population is heavily distributed in North Kazakhstan, South Kazakhstan (Almaty city), and Central Kazakhstan. Bilingual speakers and speakers of other languages were found in South Kazakhstan, more specifically, in the Almaty city area (see **Table 26**).

**Table 26.** Native language per region in Kazakhstan.

Region	Kazakh speakers (N=28)	Russian speakers (N=24)	Kazakh/Russian speakers, (N=1)	Other language speakers (N=1)
North Kazakhstan	12%	32%	0%	0%
Central Kazakhstan	8%	17%	0%	0%
East Kazakhstan	4%	13%	0%	0%
West Kazakhstan	30%	8%	0%	0%
South Kazakhstan	51%	30%	100%	100%
Total	100%	100%	100%	100%

How language affects the consumers' decisions in drinking kumis is an important aspect to know who gives more value to the drink as an element of personal nourishment or possible connectedness to cultural roots in terms of the main language spoken at home. **Table 27** shows that Kazakh speakers may consume more kumis on average. I checked if there was any correlation between preferred language at home and the frequency of consumption. In terms of "most frequent consumers" there is very little difference based on language. In terms of "middle frequent consumers", at home Kazakh speakers selected this frequency at 32% while at home Russian speakers only answered at 17%. When we look at "least frequent consumers", 75% of at home Russian speakers selected this category, whereas 61% of respondents who prefer to speak Kazakh at home selected it. Although the sample

size is small, one might tentatively interpret this as Kazakh speakers giving more value to the consumption of kumis, than those who prefer to speak Russian.

A “medium frequency” consumer in the table’s context refers to those who consume kumis a couple of times a month, and the least frequent consumers of kumis are the persons that consume kumis a couple of times a year. The sellers Nuriya and Karlygash who were discussed in the “Gender” section of the document, said that they see both men and woman who possibly buy and consume kumis only for special occasions such as life-cycle festivities or they consume it because someone whom they visit happens to have bought kumis to offer to the guests. These might be considered medium frequent or even least frequent consumers.

Why do Russian speakers seem to be consuming kumis less frequently than Kazakh speakers, could this be attributed to the following reasons: either they are Kazakhstanis of non-Kazakh ethnicity that consume kumis sporadically if offered by their acquaintances or when taking part in life-cycle festivities or, they could be Kazakhs that don’t enjoy drinking kumis due to their families not being avid consumers of the drink, therefore, not motivating their children to consume the beverage.

For the case of the Kazakh/Russian speakers the sample is not representative enough to make an argument about their frequency of kumis consumption and how mixing both languages in their daily lives affects their cultural identity of this group. For future research, it could be interesting to invite participants for the study coming from ethnic-mixed families with one of the parents being Kazakh, and ethnic Kazakhs who favor the simultaneous usage of both Russian and Kazakh in their daily speech to evaluate how similar are their consumption habits to the ones of the

Russian speaking group and how their mixed identity affects their personal choice in including kumis as part of their diets.

**Table 27.** Language of the participants versus their frequency of kumis consumption.

	<b>Kazakh speakers (N=28)</b>	<b>Russian speakers (N=24)</b>	<b>Kazakh/Russian speakers, (N=2)</b>
Most Frequent Consumers	7%	8%	0%
Medium Frequency Consumers	32%	17%	0%
Least Frequent Consumers	61%	75%	100%
Total	100%	100%	100%

In addition to looking at the frequency of consumption's relationship with language preference, I was also interested in general knowledge about the drink. To explore this idea, I asked in the survey about various types of kumis: *Besti kumis*, *bal kumis*, *uyz kumis*, *tay kumis*, *tunemel kumis*, *sary kumis*. I also provided the option "I don't know about these types." For the next test, I looked at the language people prefer to speak at home and if they can name their favorite type. I grouped all named types together and compared those to "I don't know a type". Kazakh speakers were able to name their favorite type at 63% whereas Russian speakers only could do this at 22% (see **Table 28**).

**Table 28.** Language of the participants versus awareness of the different types of kumis existing.

	<b>Prefers to Speak Kazakh at Home (N= 32)</b>	<b>Prefers to Speak Russian at Home (N= 27)</b>	<b>Prefers to Speak A Mix of Russian and Kazakh at Home (N= 2)</b>
Knows a Type	63	22	50
I do not know about these Types	37	78	50
Total	100%	100%	100%

So, it seems that speaking Kazakh at home correlates very slightly with higher consumption rates and perhaps knowing more about the etymology of the Kazakh language terms associated to describe the types of kumis. It might be assumed that people who are native speakers of Kazakh are the ones that put more value in promoting the consumption of kumis to preserve their culture and traditions. To check for this idea, I looked both at the percentage of people who ranked this factor 1<sup>st</sup>/ 2<sup>nd</sup>, 3<sup>rd</sup>/4<sup>th</sup>, and 5<sup>th</sup>/ 6<sup>th</sup> (see **Table 29**).

What emerged is a bit unexpected. It seems that those who prefer to speak Russian at home rank drinking kumis for reasons of culture and tradition slightly higher than those who speak Kazakh at home. Again, we do not know the ethnicity of the respondents. Some ethnic Kazakhs prefer to speak Russian at home for a variety of reasons: the geographic region they were born, their family's preferred language, etc. It is possible that ethnic Kazakhs who do not speak Kazakh at home are looking to this cultural product to stay connected to tradition and culture in some small way.

**Table 29.** Average rank for tradition and culture by language.

	Prefers to Speak Kazakh at Home (N= 28)	Prefers to Speak Russian at Home (N= 26)
Tradition and Culture Ranked 1 and 2	14%	27%
Tradition and Culture Ranked 3 and 4	79%	58%
Tradition and Culture Ranked 5 and 6	7%	15%
Total	100%	100%
Average Rank for Tradition and Culture	3.3	3.2

But what about the other reasons people might choose to drink Kumis Both Kazakh and Russian speakers assign taste as the main reason behind their decision to consume of kumis. It was striking to find out that Kazakh speakers put as a second priority the consumption of kumis for health issues, while Russian speakers appear to highlight as a third important reason the consumption of kumis due to tradition and culture (**Table 30**).

**Table 30.** Language of the participants versus the reasons why they drink kumis.

<b>Reasons</b>	<b>Kazakh speakers (N=28)</b>	<b>Russian speakers (N=21) *</b>	<b>Kazakh/Russian speakers, (N=2)</b>
Taste	54%	52%	50%
Health	43%	28%	0%
Tradition and culture	3%	10%	0%
Support of local production	0%	5%	50%
Someone Recommended to Drink	0%	5%	0%
Total	100%	101%	100%

\*Three participants didn't complete the ranking.

The relationship of Kazakh speakers with health issues attributed to kumis consumption was hinted by some of the sellers and producers of kumis I interviewed. All of them emphasized that kumis is consumed as a therapeutic agent to reinforce the immunity system, has antiallergenic properties, helps the body during the digestion process, and in terms of “imagined conception” of kumis, people tend to consume it in the summer guided by the belief that plants and herbs grow in abundance, and because of that kumis is able to get a higher nutrition content. Here, I provide some of the quotes that the persons I interviewed shared with me about the relationship existing between kumis and health:

Because it is part of my culture, due to its acidity, because as I said before, this is a product we drink because it is good for health <sup>[1]</sup>.

Because it is good, healthy, for immunity <sup>[2]</sup>.

I like to work as a seller because I like to promote our traditional beverages, because kumis is a healthy product, antiallergenic <sup>[3]</sup>.

Youth mainly have digestion problems. We recommend saumal and kumis. Now it is popular to eat fast food, sometimes they (people) eat a lot,

sometimes they skip eating, that leads to stomach aches. I can 100% guarantee that clients get better after drinking saumal and kumis <sup>[4]</sup>.

At the end, it doesn't matter which type of kumis you are drinking, kumis in general is a healthy drink for the organism. There is a belief about kumis, if you haven't eaten a meal you can drink kumis and it will make you feel full for more than two hours. In the summer, is even better because the plants, herbs grow, there are more fruits, we feed our horses and then milk gets even a more higher nutrition content. That's why people enjoy drinking kumis in the summer <sup>[5]</sup>.

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<sup>[1]</sup> Almagul. (2018, July 5). Personal interview.

<sup>[2]</sup> Anara. (2018, July 5). Personal interview.

<sup>[3]</sup> Karlygash. (2018, July 5). Personal interview.

<sup>[4]</sup> Yerubay. (2018, December 2). Personal interview.

<sup>[5]</sup> Arystanov, B. (2018, July 23). Personal interview.

## Seasonality and nature

Above, I discussed how geography and language preference might affect attitudes about kumis and its consumption. But geography also is tightly tied to areas of production due to climatic conditions. Geography might also be linked to real and “imagined” ideas about kumis. According to the words from the producers in chapter 2, seasonality, weather, and the natural resources present in a specific area of the country are tied to the taste of kumis. They highlighted that the kumis produced during summer is sweeter in taste, fresher, less sour, and has a higher vitamin content. But did customers also agree with this opinion? (See **Table 31**).

In the social media survey, I asked, “What is the best season to drink kumis?” and allowed only one response. Summer was the preferred season to drink kumis by 64% of the participants from social media. Spring came in the second place with 27% of the respondents that agree that this is the season when the people drink more kumis.

**Table 31.** Best season to drink kumis.

<b>Season of the year</b>	<b>% percentage of consumers</b>
Spring	27%
Summer	64%
Autumn	8%
Winter	0%
Total*	99%

\*Due to rounding, this column adds up to 99%

In addition to asking people when the best time of year was to drink kumis, I was curious about what seasons they consumed it in. While majority picked summer as the best season to drink, only 25% said that is the only time of year they drink kumis. The most respondents –31% – drink year-round, picking all four seasons. For 17%, they drink kumis in three seasons. Looking more closely at this pick of three seasons, 15% exclude winter, and 2% pick three seasons excluding spring, and 2% exclude summer. About 5% pick “spring only”. There were quite a few respondents who picked two seasons: with 13% picking spring and summer, 10% picking summer and fall (see **Table 32**).

**Table 32.** Times of Year Social Media Respondents Say They Drink Kumis (N=61).

<b>The season(s) respondent actually drink kumis</b>	
Spring Only	5%
Summer Only	25%
Spring and Summer	13%
Spring, Summer, Fall	13%
Spring, Fall and Winter	2%
Summer and Fall	10%
Summer, Fall and Winter	2%
All Year Round	31%
Total	101%

An important aspect to mention considering seasonality and its connection to geographical space is to focus in understanding the composition of the natural regions of the republic. For example, North Kazakhstan, which is the birthplace of 15% of the respondents, is characterized by having long and cold winters of 5 months plus a hot summer with often rainless weather. This region is in the territory of forest steppe and step zones which include birch, mixed herbs and feather grass steppes as vegetation. Also, the soil has a higher mineral content making it a salty environment where it has been difficult for trees to grow, especially in the areas inside the Akmolinskaya oblast. According to the words of Bakhyt and the seller Samal from the Artyom bazaar, people prefer the consumption of kumis in the summer because of the freshness and slightly sweeter content of the beverage. Nevertheless, we should consider that is very difficult to predict the connectedness of sweetness with taste since it only comes from a personal perception of an interviewee and not from quantitative data. This could be an aspect to be explored by future researchers that would like to take my project as an inspiration to create a multidisciplinary research involving specialists in food science and anthropologists to taste in the laboratory the

level of sweetness of different kumis samples tied to the region of origin and the place people live now.

I was also curious if people from different regions, would consume at different rates (see **Table 33**). There are not very strong trends. If we combine middle + most frequent consumers, the two regions who have the biggest number are the South and the West. These two regions might have slightly higher rates consumption compared to the other regions, but the overall sample size is quite small, so it is hard to say for certain.

**Table 33.** Place where the participants were born versus frequency of consumption.

<b>Frequency of consumption</b>	<b>North (N= 15)</b>	<b>Central (N=7)</b>	<b>East (N=4)</b>	<b>West (N=10)</b>	<b>South (N=25)</b>
Least Frequent Consumers	73%	86%	100%	70%	64%
Middle Frequent Consumers	13%	14%	0%	20%	32%
Most Frequent Consumers	13%	0%	0%	10%	4%
Total	99%*	100%	100%	100%	100%

\*percentages were rounded.

From the information presented in the following chart (**Table 34**), most of the respondents chose summer as their favorite season to drink kumis, while in South Kazakhstan it was interesting to find out that 56% of the respondents choose autumn and 29% picked spring as the best seasons for drinking kumis. Then, why people in South Kazakhstan seem to favor these seasons that in the North, East and West part of the country are classified as cold? In contrast to the soil and weather conditions of the North, in South Kazakhstan the spring season arrives in March and extends until June. The soil has bushes, grass and forests that grow in the summer. Also, according to Yerubay (the producer from Boz bie in Almaty) it is important to note that the

many consumers probably know that the kumis season in South Kazakhstan has a year-round basis. Many consumers might believe that the climatic conditions in the North limit production, but the producer I spoke with milks mares in the winter. It could be also that consumers living in the north find it difficult to go even to the bazaars due to the harsh winter conditions, and this may bias their view of the best season for drinking since even in autumn the weather starts to cool. Still, I find it interesting that 31% drinks year-round, and most of the social media sample respondents are living in Nur-Sultan. So even if people report a best season to drink kumis, and if this is shaped by where they were born, some people still drink kumis year-round.

**Table 34.** Geography versus best season of drinking kumis.

<b>Best Season</b>	<b>North (N= 15)</b>	<b>Central (N=7)</b>	<b>East (N=4)</b>	<b>West (N=9)</b>	<b>South (N=24)</b>
Spring	20	29	25	40	29
Summer	80	56	50	60	15
Autumn	0	15	25	0	56
Winter	0	0	0	0	0
Total	100%	100%	100%	100%	100%

Also, I provided three imagined beliefs of seasonality, diet and its connection to sensorial properties to ask survey respondents about. I came up with these ideas from interviews with the sellers and producers. From social media 59 people responded to the question about why they thought the seasons they picked as best *was* the best. These imagined ideas were pretty much equally distributed between 25 and 27% (See **Table 35**). I wanted to see if there was any pattern between these ideas and the season. For those who picked spring and summer, the imagined ideas are pretty much equally distributed (**Table 36**). I then quickly checked to see if there was any pattern at all between those who ranked a sensorial quality #1 and the

frequency of these imagined beliefs. There does not seem to be much of a pattern. There might be a slight relationship between those who prize “acidity” thinking the season they like is tied to horses eating fresh grass (**Table 37**).

**Table 35.** Reason given for why the season they picked was best.

Horses Eat Fresh Grass	25%
Taste is Better	27%
More Vitamins	25%
Other	22%

**Table 36.** Does the best season correlate with reason?

	<b>Spring Best Season (N= 16)</b>	<b>Summer Best Season (N= 34)</b>	<b>Fall Best Season (N= 4)</b>	<b>Winter Best Season (N= 0)</b>
Horses Eat Fresh Grass	31	24	0	0
Taste is Better	31	24	25	0
More Vitamins	31	24	25	0
Other Reason	7	28	50	0
Total	100%	100%	100%	100%

**Table 37.** Does the preferred sensorial quality (i.e., ranked #1) correlate with the reason for the best season is picked?

	<b>Taste Ranked as #1 (N=33)</b>	<b>Freshness Ranked as #1 (N=11)</b>	<b>Acidity Ranked as #1 (N=9)</b>	<b>Smell Ranked as #1 (N=2)</b>	<b>Color Ranked as #1 (N=6)</b>
Horses Eat Fresh Grass	21	10	45	0	33
Taste is Better	27	36	33	0	50
More Vitamins	25	36	11	100	0
Other Reason	27	18	11	0	17
Total	100%	100%	100%	100%	100%

### **The imagined ideas of consumers**

Being that taste is the most sought-after property in the beverage for all the age categories of the study made me research if there was a connection between the starting time of kumis consumption, the taste and the geography, more specifically tied to the natural ecosystem of their regions and seasonality mentioned by the interviewed producers. The quantitative data did not produce strong patterns in terms of geography. There is perhaps a slight correlation with frequency of consumption being higher in the South and West, and more individuals from the South seeing the best season for buying kumis as the autumn.

This study has left me with so many unanswered questions. During this work, I wondered if there was a pattern between the place the clients chose to buy kumis, the place where the kumis is claimed to come from, and the taste or quality of the product. However, the survey was not set up in such a way as to test this. I know where they usually like to buy kumis, but I don't know always the taste or quality they are buying.

This project made me have questions if indeed the taste of kumis was similar in all the bazaars and in the villages. I reserved this question for the interview with Bakhyt, who acts as the main representative of the Qazaq House brand to find out the truth behind this statement. Almost at the end of our interview, I addressed my personal comment to Bakhyt about the rumors I heard from some of the clients I interviewed at the supermarket and the bazaars:

I visited the bazaars in Nur-Sultan, I visited Eurasia, Artyom, Shanhai, Shapaghat. But, for me, the best kumis I tasted from the bazaars of Nur-Sultan was the one from Eurasia. This kumis was slightly sour; the freshness was a unique experience for me. But when

I bought it from Shanhai, I found the taste to be much more different, very sour and with a more liquid viscosity<sup>26</sup>.

Bakhyt answered me in the following way:

Yes, it is logic, because in the bazaars they are only sellers of kumis but not the producers, that's why in a bazaar you can have kumis claimed to come from different places in the oblast, even Zhana-arka despite being a place far away from Nur-Sultan (in the Karagandinskaya oblast). Here kumis sold at the bazaars comes either from Karaotkel (Il'inka), Prirechnoe, Kosshy. Most of the kumis production and distribution in Nur-Sultan comes from Karaotkel, there are many producers of kumis in that village. Many of them have more than 5 horses. Then, they collect all the kumis produced by the community and distribute it to the bazaars of Nur-Sultan. Oh, and there is also Koyandy. This is another place that distributes kumis, specially to the bazaars close to the Central Market<sup>27</sup>.

The evidence provided by the sellers of kumis in Eurasia compared with the information about where the social media consumers most often buy kumis, and Bakhyt's opinion as a producer gives an insight that even though the purchasing of kumis at the bazaar is a growing trend, both men and women still prefer to buy kumis from "local producers" guided by their family members or by an imaginary conception that the kumis coming from local producers based at a particular "village" is totally different from the kumis sold at the bazaar in terms of quality and taste. To increase their sales, probably the sellers are playing with promoting the name of "Zhana-arka" and using the name's reputation in their product to convince clients that their kumis is the best one guided by rumors that the Zhana-arka kumis has presumably the best sensorial properties of the region. More insight related to finding a connection between the sensorial properties of both branded and bazaar-based

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<sup>26</sup> Real, S. (2018, July 23). Personal communication.

<sup>27</sup> Arystanov, B. (2018, July 23). Personal interview.

kumis and place of purchasing will be given in the section of “sensorial properties of kumis”.

### **Branding of kumis**

This section will focus in providing the reader information about the frequency of kumis consumption per region, general information about the most popular kumis brands with presence in the Nur-sultan and Almaty supermarkets, and to find out if a connection exists between geography and the awareness of local kumis brands.

**Table 38.** Region where the population is from vs brand preference.

	North (N= 15)	Central (N=7)	East (N=4)	West (N=10)	South (N=24)
Zhana-arka	7%	57%	0%	0%	8%
Qazaq house	13%	0%	0%	0%	0%
Sarzhaylau	0	0%	0%	0%	4%
Daulet beket	0	0%	0%	0%	8%
No preferred brand	67%	14%	75%	30%	13%
I don't know about brands	13%	29%	25%	70%	67%
Total	100%	100%	100%	100%	100%

According to the information posted in **Table 38**, the population coming from the North and East part of the country probably is aware of some kumis brands existing in the market but cannot name a favorite one, while people from both North and Central Kazakhstan chose Zhana-Arka as their favorite kumis brand. In this context, for the participant citizens from North and Central Kazakhstan, Zhana-arka acts both as the real brand and imagined space of kumis. For the consumers from

Karaganda (Central Kazakhstan) they probably choose to buy the bottled “Zhana-Arka” to promote products made in the region, and to connect with their roots. They are likely proud of the culinary legacy of the Zhana-Arka region because it is a place known for the best horse-based products. As for Nur-Sultan residents, despite Zhana-Arka not being a place inside the city, the clients decide to buy bottled Zhana-Arka probably because it’s the most predominant kumis brand in the supermarkets, and as Almagul mentioned in our interview, they probably favor the flavor of the “Zhana-Arka” brand due to the reputation of its delicious taste despite the bottled product coming from the industry and not from a small-scale farm.

It is important to mention that in South Kazakhstan, people appear to prefer buying kumis from the local producers since they report not knowing about brands despite the region being home of some of the most important kumis brands such as Sarzhailau and Daulet-beket which are also sold in other regions of Kazakhstan.

### **Sensorial properties of kumis**

Another qualitative method employed in the food industry to study the level of acceptability of a product based in sensorial attributes is the “*hedonic scale*”. In the words of **Wichchikit (2015)**, the basis of a hedonic scale is structured in how the brain processes the flavors that characterize a food product through neural impulses. The neural impulses, which are the responses our brain captures from the organoleptic properties of food are measured numerically though a scale from 1 to 5 or from 1 to 9, where 1 is the lowest grade possible to rank the properties of a food product and 5 or 9 respectively, is the highest grade that depicts a maximum level of enjoyment of a sensorial property in food. Since there is still not in the scholarship a profile that illustrates which sensorial properties should be used to evaluate the level

of enjoyment of kumis and the consumers' acceptance of the product, a prototype sensorial scale model was created by myself based in the parameters used to evaluate yogurt in the industry according to **Karagül-Yüceer's (2013)**, a Turkish food technologist that has dedicated his life in studying the chemical and biological characterization of yogurt. Yogurt, as a commercial product, is sought after by consumers due to the following attributes: yellowish to white coloration appearance, being smooth and lumpy, for the flavor/taste attributes it can be bitter, smoked, acid, sour, astringent, sweet, or salty, and in terms of odor, it can be pungent, sharp, fruity, cheddar, or sweet. Thus, the same sensorial properties in yogurt can be found in kumis when drinking it.

### **The experiment of kumis sensorial properties**

The sensorial assessments are collected in a three-way data matrix involving the place where kumis was bought, the sensorial attributes and the consumers' opinions (panelists). It is important to mention that our panel for this section of the study wasn't a trained panel expert in tasting kumis, but rather the purpose of this exercise was to find out about persons' opinions about kumis in a friendly atmosphere for the participants. Before starting with the drinking of kumis, all participants received information from me about the purpose of the study, the order to drink the samples and rank and instructions to wash their mouths with water every time they finished drinking an specific sample of kumis to avoid saturation of the taste sense.

Before the starting of the drinking process, some participants commented that they never bought kumis from the bazaars because of the low quality. This low quality in their personal opinion was related to suspicions that the kumis from the

bazaar is usually adulterated with water, therefore being a better option to buy it from local producers having the certainty that the product with them is more fresh and of higher quality. Since I wasn't convinced by these assumptions that there was a difference in taste between the kumis from the local producers and the bazaars, I decided to research if indeed it is true that the sensorial properties from the bazaar and the supermarket (taste, acidity, and freshness) are different between places of purchasing or even geography. The reason to use a comparison between a commercial brand and the samples coming from the bazaars is based that people living in both Nur-Sultan and Almaty have a "imagined assumption" guided from their personal experience or probably by stories narrated in their families that the kumis coming from certain areas like the case of "Zhana-arka" for the North and Central Kazakhstan area or Tusdibastau and Mereke for the Almaty area is indeed the kumis some sellers from the bazaar claim to promote and sell due to its quality in terms of freshness and taste or, if the information is false and actually both branded and kumis from the bazaars don't show a significant difference to the consumer in terms of taste, freshness, and acidity.

The sensorial properties to be evaluated in the degustation session were selected respecting the preferred responses of customers shared through the online and in-person survey. The degustation event took place in the territory of Nazarbayev University on August 7, 2018. The participants were recruited through an email translated into the Kazakh and Russian languages sent by the communications department to all the NU community. The booking of the classroom was done through the registrar's office of the university. Eleven persons took part in the event, 6 women and 5 men coming from the cities of Nur-Sultan, Kostanay, Kokshetau, Almaty, Taraz, Kyzylorda, Oskemen, Mangystau, and Aktau.

For the degustation session, six different samples were considered. Among the samples, two commercial brands were considered: one brand from the Nur-Sultan city and neighboring regions (Zhana-Arka), and one commercial brand sold in both Nur-Sultan and Almaty (Sarzhailau altai). The rest of the samples came from the bazaars of the designed cities. Two samples were bought in the bazaars of Nur-Sultan (Artyom and Shanhai), while the rest of the samples coming from Saryarka and the Green Bazaar were bought in Almaty. Each sample before the degustation process began was assigned with a numerical code: 11 for Zhana-arka, 12 for Artyom, 13 for Shanhai, 121 for Saryarka, and 123 from the Green bazaar. The hypothesis I wanted to test for the sensorial analysis in ANOVA were the following:

Do consumers have a preference towards tasting kumis from the bazaars?

H0: The kumis taste of the bazaars and the commercial brand is the same.

H1: The commercial brand and the kumis samples bought from the bazaars have different taste.

**Table 39.** ANOVA analysis for the taste of kumis in Nur-Sultan.

<b>ANOVA FOR NUR-SULTAN</b>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	4,79	2	2,39	0,71	0,50	3,32
Within Groups	101,27	30	3,38			
Total	106,06	32				

**Table 40.** ANOVA analysis for the taste of kumis in Almaty.

<b>ANOVA FOR ALMATY</b>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	8,91	2	4,45	0,87	0,43	3,32
Within Groups	154	30	5,13			
Total	162,91	32				

Is the acidity of kumis different between the branded product and the product sold in the bazaars?

H0: The kumis acidity from the bazaars and the supermarkets is the same.

H1: The acidity between the bazaars and the supermarket kumis is different.

**Table 41.** ANOVA for the acidity of kumis in Nur-Sultan.

<b>ANOVA FOR NUR-SULTAN</b>						
<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	11,88	2	5,94	1,22	0,31	3,32
Within Groups	145,64	30	4,85			
Total	157,52	32				

**Table 42.** ANOVA analysis for the acidity of kumis in Almaty.

<b>ANOVA FOR ALMATY</b>						
<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	5,52	2	2,76	0,48	0,63	3,32
Within Groups	173,82	30	5,79			
Total	179,33	32				

What are the perceptions of freshness between the kumis from the bazaar vs the kumis from the supermarket?

H0: The freshness is the same for the branded kumis and the kumis from the bazaars.

H1: The branded kumis is fresher because the temperatures and process are controlled in the industry.

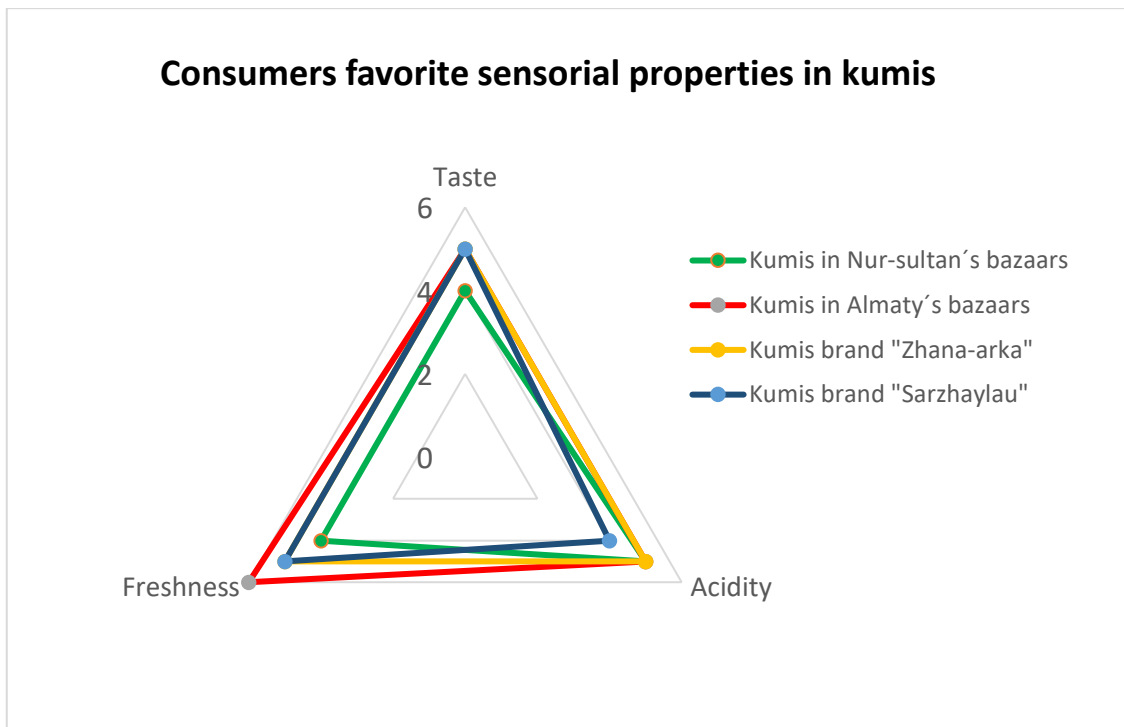
**Table 43.** ANOVA analysis for the freshness of kumis in Nur-Sultan.

<b>ANOVA FOR NUR-SULTAN</b>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	4,06	2	2,03	0,65	0,53	3,32
Within Groups	94,18	30	3,14			
Total	98,24	32				

**Table 44.** ANOVA analysis for the freshness of kumis in Almaty.

ANOVA FOR ALMATY						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	2,242	2	1,1212	0,24406	0,785	3,316
Within Groups	137,8	30	4,5939			
Total	140,1	32				

The conditions to accept or refuct the hyphotesis are: If the value of Fcrit obtained from the ANOVA analysis is superior to the value reported for F, then the hypothesis argument to be accepted is H0, otherwise, if Fcrit presents a lower value than F then the accepted hypothesis is H1.



**Chart 3.** Radial graphic of kumis sensorial profile for Nur-sultan and Almaty brands and places of consumption.

For our case, since  $F_{crit} > f$ , the  $H_0$  hypothesis statements were accepted (see **Table 39 to 44**). This means that both **Chart 3** and the ANOVA analysis show that there is no significant difference in the sensorial properties of branded and local-produced kumis in Nur-sultan and Almaty.

### **Recommendations to Producers, Sellers and Marketers**

The results obtained from this project show that despite kumis being a food product available for purchasing in the bazaars, supermarkets, and gourmet stores and being highly praised by the local population due to its therapeutic properties, still the scholarship that relates kumis with safety control and marketing is yet to be explored. In terms of safety control, there is still not a regulatory code that describes the conditions to preserve kumis in the bazaars and how the quality of kumis in this business should be monitored in terms of detecting adulteration of the drink, the procedures that the sellers need to follow for their personal hygiene, and what if any should be the regulatory body in charge of insuring the “safety” of kumis in the informal sector, etc. Also there have been not concrete studies in the area of Microbiology that examine other potential biological hazards for kumis apart of *Salmonella* and the *Escherichia coli*, mainly because of the chemical composition of mare’s milk is still not fully known. Additionally, despite the increase in horses used for food production since 2009, and the growing entrepreneurial creations of secondary products made of mare’s milk, it seems that the current market share for mare’s milk products is quite low. This is perhaps because the products coming from mare’s milk cannot be considered as mainstream in terms of consumption compared to those products derived from cow’s milk. What is behind this attitude is not fully clear. Is it the historical and infrastructure legacy of the Soviet period agricultural focus and the current state of industrial production in terms of the different dairy

products? Perhaps, it is related to the limitations on liters per day of milk a mare can produce vs. a cow? Maybe it is some other reason?

Even though there have been reports in the local media about entrepreneurs exploring the transformation of kumis into different sub products, it might be necessary for there some to be agreement on quality and compositional standards of kumis itself. One suggestion is for small-scale producers and companies to try to organize at the local and regional levels in order to first focus their attention on the current state of production and how it might be standardized and improved locally before making plans for a wider production of mare's milk at the regional and international levels. In each region of Kazakhstan, they could create a union of small-scale producers that includes different levels of hierarchy per group of villages that could report to a person in charge in each capital city of a region. The positions I have in mind for this team of producers are safety control officer, veterinarian, transportation officer, marketing specialist, taster, and regional director. The safety control officer could oversee correct hand-washing practices and sanitization of containers and instruments used for preparation of kumis complying with the regional safety rules. This person could be in contact with researchers or professors who specialize in Food Studies at educational institutions where the researchers could offer the opportunity to students to acquire experience by teaching master classes to the families involved in kumis production. These classes could focus on sanitary practices as they relate to points in the homestead production cycle, to preparing the kumis for bulk transportation, to the safe bottling of smaller quantities, and how to safely transport the product some distance. For the veterinary position, a recent graduate from the Veterinary faculty or a producer that has shown expertise in ensuring the health of the horses could be the person monitoring that the animals

are not stressed during the milking process and check that the mares are not milked when they are sick. The transportation officer could be a producer that has a close contact with the leaders of the bazaars to distribute the kumis to the selling points and ensure that the vans and trucks are maintained clean. The marketing specialist could work alongside the transportation specialist to help connect the producers in his/her region with the leaders of the bazaars to get any necessary permits for selling kumis. The marketing specialist could design and promote a regional brand for the team of producers from the village community, and ensure that the sellers of kumis at the bazaars provide potential clients with information about the community, perhaps by giving them a business card where they can get in touch if they are interested in visiting the community and purchasing the products on request. The marketing specialist can also use social media to promote the farms, what makes the kumis from that group of villages unique, and also make a plan that integrates the kumis producing families with the tourist industry, so that they can expand their business by providing services such as horse riding, visiting the farms, and degustation of mare's milk culinary specialties. The taster position could be given to a group of people from the net of producers that enjoy cooking, know the difference between the distinct group of kumis in terms of taste, appearance, and days of fermentation. Also, they should be enthusiastic in experimenting and creating new products derived from mare's milk and kumis. These people could be monitored by the safety officer and the marketing specialist to ensure that the operators follow the personal hygiene practices stipulated by the union's established norms and see the impact of the newly developed products in terms of customer satisfaction. They could monitor social media channels for mention of the new products, and even share pictures and videos to promote products online. Finally, the regional director could

be an experienced producer based in the main city of the oblast that would receive the reports of the safety, marketing, taster, and transporting officers, participate in conferences bring together all the regional directors in Kazakhstan to discuss business opportunities and challenges, and become the main people from the regions that have contact with the Ministry of Health and the Ministry of Economy. They would also submit reports about the production, sales, and quality control of mare's milk and its sub products for all Kazakhstan.

Collaboration of local producers, commerce institutions, and specialists from higher educational institutions could open the possibility to consider creating a trademark in the future for production of kumis per region, where each region might be able to proudly promote a taste of kumis distinctive to their region. These regional trademarks might be differentiated from one another in terms of using a specific breed of mare, or by feeding animals a special diet to modify the organoleptic properties of the milk. For example, or they could enhance the creativity and innovation spirit of the communities by exploring and coming up with different product niches derived from mare's milk. Creating a net of producers per region will be an interesting activity for the producers to consider working in teams to promote the consumption of kumis among people belonging to different ethnicities and age groups. This net of producers could help regional kumis comply with the safety measures that the community itself established after members became experts by attending the proposed master classes on food safety. The net could also regulate the distribution and commercialization of kumis in the bazaars, and the most important part, continuing to connect Kazakhstani people to their cultural roots and traditions without governmental interference.

Since kumis is one of the Kazakh national beverages of high demand, it is expected that its popularity will continue increasing, and as a result, welcome new customers interested in enjoying the beverage and taking care of their health. Therefore, it is fundamental for the next stage of the project to develop a sensorial profile of kumis for Kazakhstan, and to collect more interviews with producers of kumis in the industry to learn about their marketing strategies to attract clients. So far, the efforts of the companies to promote kumis in social media have been insufficient. In terms of industrial production, the companies' bottles only provide their address and the party responsible for production of kumis. They don't have a webpage or social media account that the consumers can visit to learn about discount offers in supermarkets or fairs of kumis per region where the companies participate in the promotion of their products. One basic marketing strategy to attract the consumer's attention and make them decide to purchase kumis could be that the industry promotes "kumis-tastings" or degustation of the product at local supermarkets and might also offer a gift such as a free bottle, or coupon for future purchase attached to the bottle. These tastings could be advertised in advance on social media channels, additionally they could launch advertising campaigns featuring kumis that also provide historical facts, cultural anecdotes, and nutritional information about kumis. Production companies could consider the organization of trips on paid basis to the companies' bottling factories or farms. The kumis production companies could partner with tourist agencies in the biggest cities that I studied, i.e., Almaty and Nur-Sultan to arrange such tours. The tour groups could leave the city and take visitors to either the farm or factory to learn about how kumis is made and about the history of the company. Such tours might have a significant impact on future projections of the market in local and international level.

## **Recommendations to Future Researchers**

Since the purpose of this project was to provide the general state of kumis production and consumption in urban settlements, there wasn't enough time to further explore the land use for mare's milk production in terms of how much is small-scale and how much is at the industrial level. A future researcher could combine this information with the qualitative and quantitative data discussed in this study to get a fuller picture of kumis production. Statistics about the current agricultural situation at the national level are provided in Chapter 2, but a future research could try to clarify the picture at the regional level. The researcher could focus on creating a database that provides the total number of farms involved in mare's milk production, how much of the mare's milk goes for kumis production, and how much is used for developing sub products, which of the farms have support from the government, how many of them are independent and cater only to small-scale production, and how many sell milk to a particular industry.

The testimonies given by both the producers and sellers of kumis open possibilities for future research in the physicochemical area to come with a classification that can predict the ideal sensorial properties of the product according to the consumers' desires. Also, having this classification could help local producers to estimate the maximum shelf life of the drink and produce a new combination of products based on the behavior of kumis in contact with other food ingredients. To achieve this, the kumis industry could use machine learning methods in the future to discern which combinations of kumis and other food ingredients cater to the consumers' preferences. Different "transformed" presentations kumis might appeal to different genders or generations. In terms of the kumis certification, the proposed

union of producers and researchers could work together in designing a document that includes the description of the different types of kumis in terms of its sensorial attributes, propose a recommended diet for horses indicating the percent of diet that should come from grazing and recommended ingredients to feed the horses as fodder during the seasons when there is no grazing.

If future studies follow up this work, they should try to expand the sample size for all age groups and include multiple ethnicities. Surveys conducted in person at places where kumis is sold might be the most useful as they would target active consumers. If researchers are interested in more general information, then they also might consider launching an online survey, but they should be aware that it will be biased towards younger respondents. In these ways they can explore the question of how consumers of different ages might be best marketed to and how producers can better provide kumis to various segments of the market.

Since the sample size for the surveys was small and not representative in terms of discerning the real frequency of consumption per age. For the continuation of the present research, a researcher should expand the survey to collect more responses from other supermarket chains and consider all the bazaars from the cities object of study. In terms of the survey in social media, I recommend that a future researcher include an additional question asking about the ethnicity of the participants. I am particularly interested in studying the kumis consumption habits in participants who are multi-ethnic with one of the parents being Kazakh, in order to discern if their decision to consume kumis is guided by a reconnection to their cultural roots due to the influence of a Kazakh family member, or if the ethnic identity from their non-Kazakh parent influences their consumption choices in some way even if kumis was not considered as part of their traditions.

To analyze better the consumers' behavior when buying kumis and the sellers promotion strategies, I suggest that if possible, future researchers who do participant observation employ a digital ethnography method to collect data on video instead of writing just notes. Also, for the part of marketing, I would use suggest future researchers use social media in order to follow the pages belonging to local producers or *kumishana* businesses in Nur-Sultan and Almaty to find out on which other activities they are involved. Social media is a powerful tool, and it might be possible for producers to begin to organize online. They can check the possibility of integrating all the producers from the cities in their region into a single network that could facilitate starting the in-person union I discussed above. An online organization of producers would also help their interactions with customers in terms of promotion of cultural activities for both the local and international communities. Many people might be interested to hear on social media about kumis degustation events regardless of whether they are local or international residents. International visitors might be interested in events highlighting kumis' role in Kazakh culture, and Kazakhstanis might be interested in how kumis can be used to strengthen cultural connections.

## **Conclusions**

This exploratory project adds an important contribution in the Food Anthropology scholarship for Central Asia by using both qualitative and quantitative data to analyze the current state of consumption, selling, and promotion of kumis in the urban settings of Kazakhstan. This study is significant because it is one of the first to focus on how the supply-chain of kumis operates in Kazakhstan between the industrial and small-scale production, the actors behind the selling and production of the product, and how the Kazakhstani population relates to kumis. It was especially

striking to me during the research design phase that a lot of these questions had not yet been fully explored. The results from this project provide preliminary ideas about the consumers' preferences for kumis. I found slight differences by age group, region, and sex. I did not fully explore the role of ethnicity. These findings, although tentative, can be further explored by specialists in the areas of Marketing and Food Technology.

The findings from my research about the contemporary consumers of kumis are summarized as following:

This study showed that people consider a “high-quality kumis” to be a product that is slightly acidic and provides a sweeter taste to the palate. Interviews with local producers indicated that the preferences for certain sensorial attributes are strongly connected to sex, where women value a sweeter taste for kumis than men. I then tested this idea with quantitative data, where I found only a slight preference among women for less acidic types. The survey sample size needs to be increased to fully test this idea. Which type of sweetness in kumis women seek might be something to explore further by relaunching the kumis degustation activity to evaluate only the attributes connected in studying specifically sweetness sensorial attributes for kumis using as a reference the classification known by the producers provided in the section of the senses from chapter two.

Urban consumers of kumis belonging to all the age groups still prefer to buy it from local producers despite the longer distance of the villages to the cities. However, the results showed that the tendency of consumption is slowly changing for the Northern Kazakhstan region where some people have decided to purchase it from the supermarkets and bazaars, perhaps to avoid the harsh weather conditions of autumn and winter.

Despite most of the consumers I interacted with at the supermarkets reporting not enjoying the taste of kumis from the supermarket, some still buy industrially produced bottle kumis for their convenience. It is also of note that the oldest members of my in-person survey, those older than 72 years, only came from the supermarket contexts and these individuals might find the store closest to their house more convenient than going to the bazaar. So, supermarkets remain an important point of distribution for the oldest demographic. I also think that some shop at the supermarket during winter or autumn for industrial bottles guided by the belief that the smaller-scale locally produced kumis is unavailable year-round. These assumptions about the production cycle form part of the imagined beliefs people have about kumis production where not every consumer has awareness of the seasons when kumis is produced or the different types of kumis existing in the market. Some might not even be curious or know about where the kumis they purchase comes from and therefore, resort to envisioning unlikely places of production or origin of smaller scale production. I am referring to the belief of some sellers and consumers that the kumis in Nur-Sultan's bazaars originates from the quite distant Zhana-arka. Although such a thing may be possible, it is unlikely because locally produced kumis traveling such a great distance in a non-refrigerated van or truck won't maintain its freshness. This idea that Zhana-arka is the origin of the bulk kumis sold at the bazaars might be guided by the popularity at the supermarkets of the "Zhana-arka" industrial bottled brand. It could also be due to both consumers and sellers giving value to drinking kumis from this place, due to its glorified historical reputation for making tasty products, horse husbandry practices, and the natural ecosystem. This shows that consumers' choices are guided by a combination of imagination, preservation of traditions and a sense of connectedness to a geographic space.

The survey asked consumers to rank the reasons they choose to drink kumis. Most consumers drink kumis for a variety of reasons, including simply enjoying the taste, drinking it for health, trying to stay connected to culture and tradition, a concern with local production, and being recommend to drink kumis by someone else. The reasons that most consumers ranked 1<sup>st</sup> are the enjoyment of kumis' taste and drinking for health purposes. Those less than 22 years old and the group between 38-53 years old seemed to have more concern with health. Additionally, respondents who prefer to speak Russian at home have a slight interest compared to other groups in local production. Increasing the sample size in the future could help clarify which groups might have more of a tendency in seeking to reconnect to their culture, or who merely drinks because they received a recommendation from their family or friends.

Nowadays, drinking kumis in contemporary Kazakhstan cannot be considered anymore as something done exclusively by the ethnic Kazakh population. Interviews from local sellers and producers from this study showed that there is a tendency of the Kazakhstani population coming from different ethnic backgrounds to consume kumis advised by their acquaintances due to its reported therapeutic properties. Being Kazakhstan a multicultural society, many people of non-Kazakh ethnicity are also enjoying this drink. In terms of age, it is a drink enjoyed throughout life and by people of many different ages. From the social media survey, it was clear that it wasn't just middle-aged and older individuals who drink kumis. It is understandable that the younger populations these days are looking for ways to connect with their cultural identity, and drinking kumis is a way to embrace a traditional beverage of their homeland.

In the 21<sup>st</sup> century, consumers are offered different presentations, places to buy, and places to try kumis. They can decide to either buy a branded bottle of kumis from the supermarket in a 500 mL or 1 L presentation, or purchase kumis from the bazaars in a 2 or 5 L presentation. The consumers who were willing to participate during my in-person fieldwork at the supermarkets and bazaars as well as the sellers, noted that reconnecting with cultural roots is one driving factor. In terms of the place of consumption, some people choose to consume kumis at the *kumishanas*, many more choose to drink at life-cycle events to preserve traditions, and the survey respondents note, that even enjoying kumis at home is quite common. This project also found evidence that some Kazakhstanis are continuing a long-standing practice guided by tradition to consume kumis as a therapeutic agent to prevent diseases. Kumis as a topic, specifically as a traditional product that may be undergoing an increase in popularity, offers multiple possibilities in the future to continue studying how food and culture are intertwined. The study of such questions surrounding kumis has value for a humanities or biological sciences research approach. Time will tell if kumis has the potential to become a trademark for the Republic of Kazakhstan and attract even more prospective consumers at the local and international levels.

## Appendix

### Interviews from the sellers in Eurasia

**Date:** July 5, **Time:** 13 pm, **Place:** Milk production section, Eurasia 1, 1st floor, 3rd corridor next to the fruits section. The interview lasted 15-20 min.

The first seller I interviewed was a woman in her middle 30's which light brown hair, light brown eyes, thin, between 1.60-1.65 m tall, of Kazakh ethnicity. It wasn't the first time I spoke to her. When I did my participant observation of the bazaar, I accompanied a tourist from Costa Rica who was a common friend of an acquaintance from Nazarbayev University to explore a bazaar and get her acquainted with the Kazakh national cuisine. An important element for a tourist to begin his/her adventure in experimenting the Kazakh cuisine flavors is the tasting of kumis and shubat. We found Almagul's stall next to the fruits section closer to the entrance to the meat product area. She has a sweet character; she was very hospitable to us asking about our countries of origin. I decided to ask her if she was interested in taking part in my research project as an interviewee to get people in the future more acquainted to the kumis production and spiritual values of the beverage. She agreed to the proposal and that's how we set our meeting. She selected for us to meet in the stall at 1 pm, since at this period there aren't many clients in the milk production section.

Interview (Russian)	English version	Codes
<b>Как вас зовут?</b> Меня зовут Алмагул	What is your name? My name is Almagul	Almagul
<b>Из какого город?</b> Из Акмолинской области	From which city are you from?	Akmola
<b>Если можно спросить сколько вам лет?</b> Мне 42 года	From Akmola region If I may ask, how old are you?	42 years
<b>Как долго работал продавцом?</b> Год	I am 42 years old How long have you worked as a seller?	One year
<b>Вы всегда работала в сфере кумыза или у вас работала раньше в другой профессия?</b> Нет, я раньше работала продавцом одежды.	For a year Have you always worked in the field of kumis or have you worked in a different profession before?	Clothing retailer
<b>Почему решила стать продавцом кумыза?</b> Мне нравится вкус кумыза, потому что продаю продукт который полезный для здоровья, больше всего нравится о работе посоветовать людей.	No, I used to work as a clothing retailer before. Why did you decide to become a kumis seller? I like the taste of kumis, because I sell a product that is healthy, what I like the most about my work is being able to advice people	Kumis taste Healthy Work Advise people drink
<b>Почему вам нравится пить кумыз?</b>		Culture Acidity Good for health

Interview (Russian)	English version	Codes
<p>Потому что это часть моей культуры, из-за кислотности, потому что как я сказала раньше это продукт мы пьем потому что это полезно для здоровья.</p> <p><b>Когда и где вам нравится пить кумыз?</b></p> <p><b>Когда и где вам нравится пить кумыз?</b></p> <p>Я просто пью кумыз весной потому что это время сезона когда кумыз сладкий, я пью кумыз с семьей, дома и на вечеринках как типа той или Кыз узату, тоже пьем когда мы пригласили гостей домой. Тоже когда мы пьем кумыз мы ем мясо, конину, комбинация между кониной и кумыз отличная.</p> <p><b>Откуда кумыз который вам продаётся?</b></p> <p>Этот кумыз из Акмолинской области, едешь в колгаржын и придёшь до Илиньки, наш кумыз из Илиньки. Я не производитель кумыза я просто продаю его.</p> <p><b>А если я пошла бы в Илиньку что там могу найти если мы говорим о других продуктах из конины или из молока кобылы?</b></p> <p>Там есть саумал. Люды из Астаны пьют и покупают саумал, каждое 2 часа доем кобылу, в то время можно приездить и попробовать, тоже там продается бал кумыз которому людей очень предпочитают, а также</p>	<p>Because it is part of my culture, due to its acidity, because as I said before, this is a product we drink because it is good for health.</p> <p>When and where do you like to drink kumis?</p> <p>I just drink kumis in spring because it is the season when kumis is sweet, I drink kumis with my family, at home and at parties such as Toy or Kyz uzatu. I also drink it when we have guests at home. Also, when we drink kumis, we eat meat, horse meat, the combination between horse meat and kumis is excellent.</p> <p>Where do the kumis you sell come from?</p> <p>This kumis is from the Akmola region, you head towards Kolgarzhyn and going straight ahead you arrive to Ilinka, our kumis is from Ilinka. I am not a producer of kumis. I just sell it. And if I would go to Ilinka, what can I find there if we are talking about other products from horse meat or from mare's milk?</p> <p>There is saumal. People from Nur-Sultan drink and buy saumal, every 2 hours we milk a mare, at this time you can come and taste, also we sell bal kumis there (sweet flavored kumis), which is in high esteem by people, and, we have uzhas? kumis, this kumis is also sweet, it has three days of fermentation.</p> <p>Which presentation do the buyers prefer to purchase here in the bazaar?</p> <p>People usually buy 5 L And why exactly 5 L, why not L or one and a half?</p>	<p>Kumis in spring Sweet Family parties Guests Horse meat</p> <p>Kolgarzhyn</p> <p>Ilinka</p> <p>Sell kumis</p> <p>Saumal Nur-Sultan 2 hours Taste Bal kumis Sweet People Uzhas? kumis 3 days Fermentation 5 L</p> <p>Guests Weekend Themselves</p> <p>12-15 pm Sunday</p>

Interview (Russian)	English version	Codes
<p>ужас кымыз этот кымыз сладкий, 3 дня ферментации.</p> <p><b>Какая презентация ваши покупатели предпочитают покупать здесь на базаре?</b></p> <p>Люди обычно покупают 5 Л</p> <p><b>А почему именно 5 Л, почему не Л или полтора?</b></p> <p>Потому что у людей есть гости на выходных, поэтому не просто покупают для себя.</p> <p><b>В который час а на каких дней в Евразии вы видите что люди спросить о счете кымыза и покупают его?</b></p> <p>С 12-15 ч в субботу и воскресенье.</p> <p><b>Как вы считаете, какой вид кымыза люди предпочитают в Астане?</b></p> <p>Они не нравятся стаган ? Это когда кымыз выглядит черным, это мы добавим из-за того что кымыз не чувствуется жирным, а это полезно для напитки потому что надо сохранить её чтобы не стать жирным, этот вкус не удобно для покупателей.</p> <p><b>А у этого черного вещи которого видется в кымызе есть спесифичное имя?</b></p> <p>Его зовут на казахском тобылгы. Когда кымыз в Илиньке они (производители ?) фильтруют жидкость.</p> <p><b>Как вы можете описывать вкус кымыза в Акмолинском регионе с сравняем кымыз других регионах в Казахстане?</b></p> <p>В Караганде кымыз хороший. Он чуть чуть сладкий. Вкус Акмолинской области чут чут по другому. Он соленный, это наверное совисит о природе, здесь степь.</p>	<p>Because people have guests during the weekend, so they do not just buy for themselves.</p> <p>At what time, and on which days of the week there is more people looking forward to buying more kumis in Eurasia?</p> <p>From 12-15 pm on Saturdays and Sundays.</p> <p><b>What is your opinion on which type of kumis people from Nur-Sultan prefer?</b></p> <p>They don't enjoy the kumis that has black color in the upper part, we add ash because we need to keep kumis from turning extremely sour earlier. This is the taste that consumers from Nur-Sultan don't enjoy.</p> <p>And this black thing that can be seen inside kumis has a specific name?</p> <p>In Kazakh we call it "tobylghy". Once kumis is ready in Ilinka the producers filtrate this element from the liquid.</p> <p>How can you describe the kumis flavor in the Nur-Sultan region in comparison with the kumis from other cities in Kazakhstan?</p> <p>In Karaganda the kumis is great, it is a little bit sweet. The taste in the Nur-Sultan region is a little bit different, it is salty, maybe it depends on the soil, since this is the steppe.</p> <p>And this is my last question and we will finish this</p>	<p>Don't enjoy Black color Ash</p> <p>Sour Consumers from Nur-Sultan</p> <p>Tobylghy Kumis ready Filtrate Liquid</p> <p>Karaganda Sweet kumis Nur-Sultan region Salty Soil Steppe 800 tenge</p>

Interview (Russian)	English version	Codes
<p>А это последний вопрос и мы закончим: сколько стоит кымыз? Стоимость 1 Л кымыза 800 тенге. <b>А у вас есть визитка?</b> Извините к сожалению нет, но если вы хотите заказывать кымыз вы можете написать свой мобильный телефон в моей тетрадке и я вам звоню. <b>Спасибо большой за вашего время, вы очень помогала мне знать больше о процессе кымыза. Желаю вам хорошего дня. Спасибо.</b></p>	<p>interview: how much does it cost the L of kumis? The price for 1 L of kumis is 800 tenge. Do you have a business card? I'm sorry, I don't have now. But if you would like to order kumis, you can write your number here in this notebook and I can call you right away. Thank you very much for your time. You helped me very much to know more about kumis preparation. I wish you a great day. Thank you.</p>	<p>Order kumis Write number Notebook call</p>

**Date:** July 5, **Time:** 15:39 pm, **Place:** Milk production section, Eurasia 1, 1st floor, 3rd corridor next to the gate where kitchen appliances are sold. The interview lasted 10-15 min because there were many clients on that specific stall and the sellers couldn't provide me with more specific details about kumis production due to feeling the stress of having many clients and not understanding entirely my Russian language speech. As I found out later when visiting the bazaar, the following week as a buyer of kumis, is not that they refused to answer my questions about kumis, they were disappointed that I didn't speak much Kazakh because I first they thought I was a local person. But when I told them I was a foreign student they became amicable and even offered me to take home for free some kurt due to my interest in researching kumis. Nuriya is a woman in her late 20's, maybe mid 30's, with brown hair tied in a ponytail, caramel skin, straight body shape, brown eyes. My first impression was that she could also pass for a Latin American even though her ethnicity is Kazakh. As for Anara's appearance, she has white skin, brown eyes, long hair, a small birthmark on her lip, her height is probably between 1.55-1.65 m. They didn't disclose their real age.

Interview (Russian)	English version	Codes
<p><b>Как вас зовут?</b> Меня зовут Анара, а моя подруга нурия. <b>Из какого город?</b> Из Шымкента. <b>Ови?</b> Да <b>Если можно спросить сколько вам лет?</b></p>	<p>What is your name? My name is Anara, and my friend's name is Nuria. From which city are you from? From Shymkent. Both of you? Yes</p>	<p>Anara and Nuria  Shymkent</p>

Interview (Russian)	English version	Codes
<p>Можно если мы не ответим на вопросов? <b>Да конечно, если не удобно для вас сказать мне этот аспект, ничего страшного. Я хотела бы что вас почувствуйте себя удобно в этом маленьким интервью. Как долго работали продавцами кымыза если можно спросить?</b>  Я 2 года а Нурия год.  <b>Вы всегда работала в сфере кымыза или у вас работала раньше в другой професия?</b>  Нет, я была домохозяйка.  Note: Нурия was a housewife and Anara refused to disclose her previous profession.  <b>Почему вам нравится пить кымыз?</b>  Потому что это хорошо, полезный для здоровья, для иммунитета.  <b>Когда и где вам нравится пить кымыз?</b>  Когда выходные с семей, когда у нас есть гости, в ресторанах. Во время обеда.  In this part of the interview with Anara and Нурия other sellers started to become curious about the nature of my questions probably, maybe my foreign Russian accent, maybe a combination of both aspects and then 3 neighboring sellers from the salad's sections interrupted the interview and asked me where I was from, if I liked Kazakhstan, if I spoke Kazakh. Even though the moment was interrupting the interview process with Anara and нурия it was rewarding to listen to the sellers to congratulate you in spelling Russian and a little bit in Kazakh. The responses from this interview are Nuria's testimonies. Anara later became</p>	<p>If I may ask, how old are you?  It is possible if we do not answer that question? Yes, of course, if it is not convenient for you to tell me this aspect, do not worry. I would like you to feel comfortable in this little interview.  How long have you been working as kumis seller if I may ask?  I have been working for two years old and Nuria for one year.  Have you always worked in the field of kumis or have you worked in a different profession before?  No, I was a housewife.  Note: Nuria was a housewife and Anara refused to disclose her previous profession.  Why do you like to drink kumis?  Because it is good, healthy, for immunity.  When and where do you like to drink kumis?  During the weekend with our families, when we have guests, in restaurants, during lunch time.  Where does the kumis you sell comes from?  This kumis comes from the Akmola region, from Ilinka.  What presentation do your buyers prefer to purchase here in the bazaar?  People usually buy 2 or 5 L.</p>	<p>Work two years  One year  Housewife  Previous profession  Healthy immunity  weekend  restaurants  lunchtime  Akmola kumis  Ilinka  2-5 L</p>

Interview (Russian)	English version	Codes
<p>busy attending customers and couldn't continue.</p> <p><b>Откуда кумыз который вам продаётся?</b></p> <p>Этот кумыз из Акмолинской области, из Илиньки.</p> <p><b>Какая презентация ваши покупатели предпочитают покупать здесь на базаре?</b></p> <p>Люди обычно покупают 2 или 5 Л.</p> <p><b>В который час а на каких дней в Евразии вы видите что люди спросить о счете кумыза и покупают его?</b></p> <p>в субботу и воскресенье, без день.</p> <p><b>Как вы считаете, какой вид кумыза люди предпочитают в Астане?</b></p> <p>Не можем ответить, мы не знаем, кумыз просто кумыз.</p> <p><b>Спасибо большой за вашего время, вы очень помогала мне знать больше о процессе кумыза. Желаю вам хорошего дня. Спасибо.</b></p>	<p>At what time, and on what days in Eurasia do you see that people ask about kumis and decide to buy some?</p> <p>On Saturday and Sunday, all day.</p> <p>What do you think, what kind of kumis do people prefer in Nur-Sultan?</p> <p>We cannot answer, we do not know, kumis is just kumis.</p> <p>Thank you so much for your time, you really helped me to know more about the kumis process. I wish you good day. Thank you.</p>	<p>Just kumis</p>

**Date:** July 6, **Time:** 16 pm, **Place:** Milk production section, Eurasia 1, 1st floor, 3rd corridor next to the nuts section. The interview lasted 10 min.

The 4th seller I interviewed was a woman in her early 50's with short black hair, oval body type, around 1.70 m, with a birthmark on her left cheek, pointed nose, gray colored eyes, of mixed ethnicity (probably Kazakh with Tatar or Russian, I cannot define for certain). It wasn't the first time I spoke to her. When I did my participant observation of the bazaar at the beginning of June, I accompanied a tourist from Costa Rica who was a common friend of an acquaintance from Nazarbayev University to explore a bazar and get her acquainted with the Kazakh national cuisine. Therefore, we approached this stall located next to Almagul's stall. I need to mention that Almagul and this seller share a relationship of friendship as in the case of Nuriya and Anara. I didn't have the opportunity to meet Almagul when I went with the Costa Rican tourist because she wasn't available that month (she didn't specify which were the specific reasons) so afterwards Almagul mentioned during the interview that her daughter was instead of her in the stall during the first month I visited.

Interview (Russian)	English version	Codes
<p><b>Как вас зовут?</b> She didn't want to tell me her name, due to me recording her responses even though I explained to her I was recording due to my Russian level not being native. I will name her Karlygash for research purposes</p> <p><b>Из какого город?</b> Из Астаны</p> <p><b>Если можно спросить сколько вам лет?</b> 40</p> <p><b>Как долго работали продавцами кымыза если можно спросить?</b> 3 года</p> <p><b>Вы всегда работала в сфере кымыза или у вас работала раньше в другой профессия?</b> Этот бизнес семи, я просто помогу моей семей продают наш продукт но я не участвую в процессе кымыза. Мне нравится работать продавцом потому что хочу промотировать нашу национальную напитокку, потомучто пить кымыз полезно для здоровья, он антиаллерген</p> <p><b>Когда и где вам нравится пить кымыз?</b> Особенно, я пью его с дочей, нам нравится когда кымыз чут чут сладкий типа бал кымыз.</p> <p><b>Откуда кымыз который вам продаётся?</b> Из Ильинки</p>	<p>Whats your name? My name is Karlygash</p> <p>From which city are you from? From Nur-Sultan</p> <p>If I may ask, how old are you? 40</p> <p>For how long have you been working as a seller of kumis? Three years</p> <p>Have you always worked in the business of kumis or did you work before in another profession? This is the family's business, I just help my family sell our product, but I don't participate in its preparation. I like to work as a seller because I like to promote our traditional beverages, because kumis is a healthy product, antiallergenic.</p> <p>When and where do you like to drink kumis? Especially, I drink it with my daughters, we like it when kumis is a bit sweet like bal kumis.</p> <p>Where does the kumis you sell comes from? From Ilinka</p>	<p>Karlygash</p> <p>Nur-Sultan</p> <p>40</p> <p>Three years</p> <p>Family business sell Don't participate Preparation Promote Traditional Kumis healthy antiallergenic</p> <p>drink with daughters sweet kumis Ilinka</p>

Interview (Russian)	English version	Codes
<p><b>Как промотируете ваш кумыз покупателем?</b> Я дарю пробы кумыза чтобы Людв чувствуют вкус напитки, запах, кислотность. Если им нравятся они часто покупают 5-10 Л, не каждый из них таскают напиток, они заранее делают заказ через гуатсоп, потом к 2-3 ч они приедет и носят напиток домой.</p> <p><b>В который час а на каких дней в Евразии вы видите что люди спросить о счете кумыза и покупают его?</b> На выходных</p> <p><b>Как вы считаете, какой вид кумыза люди предпочитают в Астане? В моем внение, кумыз без пепеля. И тоже я добавлю чут чут сметана чтобы стать вкуснее.</b></p> <p><b>Как мотивируете людей покупать ваш кумыз?</b> Во первых приветствую, говорю здравствуйте, кумыз бар, из аула, попробуйте, пойдёт? Сколько вам надо?</p> <p><b>Спасибо большой за вашего время, вы очень помогала мне знать больше о процессе кумыза. Желаю вам хорошего дня. Спасибо.</b></p>	<p>How do you promote your product to the buyers? I give samples of kumis so that people feel the drink's taste, smell, sourness. If they like it, they often buy 5-10 L, they make an order in advance through Whatsapp, then they arrive 2-3 hours later and carry the drink home.</p> <p>At what time, and on what days in Eurasia do you see what people ask about the kumis account and buy it? On the weekend What do you think, what kind of kumis do people prefer in Nur-Sultan? In my opinion, kumis without ashes. And, adding some sour cream improves the texture.</p> <p>How do you motivate people to buy your kumis? Firstly, I welcome, I say hello, I have kumis from the village, try it, would you like to take some? How much do you need?</p> <p>Thank you so much for your time, you really helped me to know more about the kumis process. I wish you good day. Thank you.</p>	<p>Samples of kumis Taste Smell, sour 5-10 L Order</p> <p>Whatsapp Carry drink Home</p> <p>Weekend</p> <p>No ash Sour cream Welcome Village Take some How much</p>

### Reflections after visiting Eurasia

At one stall they thought I was Uzbek. But then they were puzzled about my nationality when my Russian pronunciation sounded slightly foreign. When I mentioned I was a foreign student from NU they thought I was joking and weren't taking seriously my questions, so then I showed my ID as a proof assuring them that the information was going to be kept confidential and my only interest was to

contribute to the promotion of kumis consumption and cultural values in urban Kazakhstan. Then when the sellers in the section of Nuriya's table became more amicable they started to ask questions if something like kumis exists in Mexico and they even mentioned that they knew a soap opera star: Veronica Castro due to them watching a Mexican series that was broadcasted a long time ago in Kazakhstan. When I interviewed Nuria and Anara, I wasn't sure if they were telling me some important parts of kumis promotion or if they were telling jokes because they continue speaking to each other switching to Kazakh while answering my questions in Russian. It was good that I spoke to Almagul first about kumis production and commercialization because I had previous background through Almagul's conversation and the literature review to discern which aspects were true about kumis production and which were false or maybe not even the sellers had a clear information about the process because they were not entirely familiar with the production.

It wasn't easy to get in-deep interviews with the sellers from the bazaars because there are always clients and supervisors that at a certain period of time, they stopped by to check how the workflow is going, if there is a problem, etc. It's very difficult to identify them just by the clothes they wear because they use the same uniform as the sellers, however you can notice their role because they carry with them a set of documents in a block that they give to the sellers for signing purposes. To get each interview I had to wait from 5-10 minutes in order to introduce myself. A polite way, explain the purpose of the work, etc. While I waited for the sellers to continue with the interviews, I applied the survey to the persons stopping by to purchase products from the kumis stalls, I approached the customers by greeting them, introducing myself, asking if they would like to take part in a survey of kumis consumption. Out of 20 persons I approached during one week of exploration at Eurasia 10 declined to participate despite offering them the choice to answer the questionnaires in Russian or Kazakh. During the first day of fieldwork at Eurasia I presented the survey in a digital form, but then after collecting just 3 responses the first day, I sensed that people were more comfortable in answering a printed version of the survey. This helped me for the fieldwork in other bazaars of Nur-Sultan and Almaty to better come prepared with printed questionnaires.

One customer in a stall was rude to me and told me: I don't understand what you are saying. Another man that specifically was buying kumis declined answering the survey because I spoke to him in Russian despite offering the Kazakh version of the document for him to answer.

### **Interviews from the sellers in Artyom**

**Date:** July 20, 2018 **Time:** 16 pm, **Place:** Milk production section, Artyom bazaar close to the entrance in Seyfullina street next to the dried fruits section. The interview lasted for 15 minutes.

Samal is a Kazakh woman that looks in her late 30's, a little bit overweight, with dyed blonde hair in a ponytail, brown eyes, caramel skinned, her height is around 1.60 m, I remember her with a severe face expression, I thought she was angry, but my assumptions were wrong, she wasn't very cheerful as the sellers I interviewed in Eurasia, nevertheless she was polite and respectful and after the interview offered me a glass of kumis for free despite I was telling her that I was flattered by the offer

but I was going to pay for it. She insisted that I was a guest in Kazakhstan, and I thanked her with all my heart for her kindness.

**Как вас зовут?**

Меня зовут Самал.

**Из какого город?**

Из Карагандынской области

**Если можно спросить сколько вам лет?**

Можно не скажу об этом?

**Как долго работал продавцом?**

6 лет, мы работаем с 7-22 ч без выходных

**Вы всегда работала в сфере кымыза или у вас работала раньше в другой профессии?**

Я была домохозяйка.

**Почему решила стать продавцом кымыза?**

Просто заинтересовалась, я зарабатываю деньги, клиентки всегда есть, потому что эта моя культура, наши традиции.

**Почему вам нравится пить кымыз?**

Потому что он полезно для здоровья, везде нравится пить, кымыз удобно, как вода, это просто нормально для меня.

**Когда и где вам нравится пить кымыз?**

С семей.

**Откуда кымыз который вам продаётся?**

Из Жана-Арки, в Карагандинской области.

**Какая презентация ваши покупатели предпочитают покупать здесь на базаре?**

5 Л для семей, 50 Л на заказ через гуатсоп.

**В который час а на каких дней в Артёме вы видите что люди спросить о счете кымыза и покупают его? В субботу.**

**Как вы считаете, какой вкус кымыза люди предпочитают в Астане?**

Зимой мало людей покупают потому что вкус очень кислый для них, обычно люди покупают кымыз летом потому что он кислый и свежи.

**А вы можете людей реклмендировать типа бал кымыз, бести кымыз, тунемел кымыз, Сары кымыз, итд? Клиенты знают об этом? Вы помните клиенты которые спросят о видов кымыза? Нет, я не помню никаких клиентов которые спросили об этом.**

**Как вы можете описывать вкус кымыза в Акмолинском регионом с сравняем кымыз других регионах в Казахстане? Здесь кислее чем в Караганде, там сладкий не так жирный.**

**Спасибо большой за вашего время, вы очень помогала мне знать больше о процессе кымыза. Желаю вам хорошего дня. Спасибо.**

### **Interviews from the sellers in Big Shanhai bazaar**

**Date:** July 22 **Time:** 13 pm, **Place:** Milk production sector 7 next to the fruit and vegetable stalls and the electric stairs. I approached 4 sellers out of 7 sellers that dedicate to the promotion of kumis, only 2 sellers were willing to give me an

interview because they weren't confident in spelling Russian to me, I comforted them jokingly telling that I didn't speak Russian very well, so if they felt more comfortable speaking in Kazakh I could record their testimonies, but then they didn't want to participate in the recording feeling probably an invasion of their privacy so I decided that the better approach was to write their testimonies on paper.

**Как вас зовут?**

The seller didn't disclose me her name, she didn't want to be identified. For the research purposes I called her Aizhan.

**Из какого город?**

Из Шымкента.

**Если можно спросить сколько вам лет?**

Можно не скажу об этом?

**Как долго работал продавцом?**

1.5 год

**Вы всегда работала в сфере кымыза или у вас работала раньше в другой профессии?**

Я была продавец канцелярии.

**Что больше всего нравится в вашей работе?**

Кунделинкти зарплата, потому что бол меденет, кымыз полезно для здоровья.

**Почему вам нравится пить кымыз?**

Потому что он полезно для здоровья, это лекарство для нас.

**Когда и где вам нравится пить кымыз?**

Уйде, мейрамханаде, конактармен, тойда, кыз узатыда, менин отбысымен.

**Откуда кымыз который вам продаётся?**

Из Приречного села.

**Какая презентация ваши покупатели предпочитают покупать здесь на базаре?**

5 Л для семей, 30-50 Л на заказ через гуатсоп, это для праздника.

**В каком сезоне года люди покупают больше кымыз?**

Коктемде, потому что он полезный и сладкий.

**Как вы считаете, какой вкус кымыза люди предпочитают в Астане? Они покупают кымыз летом потому что он свежи а в этом сезоне у него есть больше витаминов.**

**Обычно в каких дни недели вы продаёте больше кымыз?**

В субботу и воскресенье целый день.

**Какие разницы есть между всеми типами кумыса сточки зрения вкуса, текстуры а презентации?**

Люди не спросили бы об этом

**Как мотивируете людей пить кымыз?**

Покажу кымыз, приглашу им: кымыз попроваете, кымыз пойдёт?

**Спасибо большой за вашего время, вы очень помогала мне знать больше о процессе кымыза. Желаю вам хорошего дня. Спасибо.**

## **Seller 2 interview**

**Date:** January 4th, 2019 **Time:** 15 pm, **Place:** Milk production sector 7 in front of Aizhan's stall. Amanbek is a man in his early 40's, rounded-faced, a little bit overweight, with almond skin, his front teeth covered with metal, of Kazakh ethnicity. He has 2 kids, one seven-year-old boy and a teenage daughter currently studying in high school who comes to help him in to the stall during the weekends. Amanbek told me that during working days his wife comes to take care of the stall.

### **Как вас зовут?**

Меня зовут Аманбек.

### **Из какого город?**

Из Акмолинской области

### **Если можно спросить сколько вам лет?**

Мне 40

### **Как долго работал продавцом?**

Как продавец здесь в Шанхай просто год, я сам производитель кымыз. В прошлом году моя супруга была здесь, она продавала кымыз вместо меня.

### **Вы всегда работала в сфере кымыза или вы работали раньше в другой профессии?**

Этот семейный бизнес. Здесь в Шанхай мы коллеги, мы знаем друг друга потому что все из села приречное которое находится возле Астаны.

### **Что больше всего нравится в вашей работе?**

Быть с людьми, промотировать мою культуру, сказать людям советы про кымыз, итд.

### **Почему вам нравится пить кымыз?**

Для меня пить кымыз значить счастье, возможность быть с семей, поделится, благодарить, наслаждаться.

### **Откуда кымыз который вам продаётся?**

Из приречного села

### **Какая презентация ваши покупатели предпочитают покупать здесь на базаре?** Иногда 2 Л, 5 Л и до 30 Л но это просто для вечеринок.

### **В каком сезоне года люди покупают больше кымыз?** Летом

### **Какие виды кымыза существуют?**

Сары кымыз, бести кымыз, тунемел кымыз, тунан кымыз, старый кымыз он самый жирный, бести кымыз он самый крепки, тунемел кымыз чут-чут жирный, тунан кымыз средней. Интересный факт что много людей в Казахстане хотя пьют кымыз из детства не знают про этом, не знают какая разница между всё типы кымыз. Когда добавим кымыз в саде, есть разный вкус внутрый, он вкуснее и можем сохранить качество до 6 месяцев.

### **Вы можете опыливать мне пожалуйста не сколько аспектов о продукции кымыза, как приготовить, времени приготовления, итд?**

доем кобылу каждое 2 часа, начинаем рано утром. В 8 ч.)мы собираем все молоко, этот продукт называется саумал, доварим внутри один инструмент который называется кобы там наливаем саумал и ждём 2-3 часа, напиток чувствует после этой процесс тёплым. Если мы держим кымыз этот называется сталган кымыз. Сталган помогает для вкуса.

### **Обычно в каких дни недели вы продаёте больше кымыз?**

В субботу и воскресенье целый день. Честно говорят здесь в Астане продаётся больше кымыз из Караганды.

### **Как мотивируете людей пить кумыз?**

Покажу кумыз, приглашу им: кумыз попробуете, дарю визитку перспективным клиентам.

**Спасибо большой за вашего время, вы очень помогала мне знать больше о процессе кумыза. Желаю вам хорошего дня. Спасибо.**

### **Fieldwork to Almaty in the summer (notes)**

I went to Almaty on August 1st. I took the train from Nur-Sultan in Nurly Zhol station. The time travel was 13 hours. I arrived at 7 am. Since everything was closed at that period, I checked in at the Turkestan hotel, in front of the Green bazaar (Makataeva 42). The plan for day one was to do participant observation of the Green bazaar, collect interviews with the sellers, apply the survey with the customer visiting the milk product section. My plan was to interview at least 2 sellers of kumis and collect at least 10 survey responses.

My first interview took place at 11 am. Since I saw that there was many people buying from the kumis stalls, I decided to better approach a woman that was in the counter of a/ small store from Daulet beket company. This company acts as the frontrunner of kumis and shubat production in the Almaty region, a part of selling these beverages that have started to innovate the market by offering transformation of the traditional drink such pelmeni with camel or horse meat, ice cream, kurt, etc. The woman I interviewed seemed in her 30's, with curly black hair, thin, white skin, brown eyes, she wore that day an apron with Daulet beket's logo and a pink t-shirt. Before beginning with the interview, I introduced myself, telling that I was a visitor in the city for the first time and that I was looking forward to having the opportunity to taste kumis in Almaty. She was very friendly, at first she fought I was Kazakh, but then as I asked for recommendation on what to visit close to the green bazaar she checked that I was writing on English and then she was happy that I was so interested in the culture of Kazakhstan and speaking Russian. Then I told her that I was conducting a research in kumis and if she was interested I. Giving me a short testimony of what kumis means to the people in Kazakhstan, what products Daulet beket is advertising using mare's milk apart of kumis, if she knew of other places where they could help me to understand better the production in Almaty or the consumers preferences of kumis in the city, etc.

### **Interview 1 at the green bazaar**

**Date:** August 1st, 2018 **Time:** 11 am, **Place:** green bazaar at Daulet bekets company stall. First floor between the milk and meat product section.

**Как вас зовут? Сколько вам лет?** Меня зовут Акмарал, мне 35 лет.

**Из какого города?** Из Алматы.

**Как долго работал продавцом?** 3 месеца,

**Вы всегда работала в сфере кымыза или вы работали раньше в другой профессии?** Нет я работала раньше в другой профессии, я была преподавательница казахской культуре и языке, эта моя вторая работа.

**Почему вы решила стать продавцом кымыза?**

Мне нравится показать качество кымыза, промотировать мою культуру для иностранцев, советовать людям продукты нашей культуры.

**Что больше всего нравится в вашей работе?** Показать наши продукты, дать советы как можно попробовать наши продукты

## Raw data of kumis consumption in the supermarket

Age	Region in Kazakhstan	Where?	Language	Gender	First time drink kumis	Buy kumis because	Frequency kumis drinking	Buy kumis in the supermarket	Where do you buy kumis apart of the supermarket?	What I like in kumis?	Where I drink kumis?	When buy kumis?	Decision to buy kumis	Most important thing about kumis	Favorite brand of kumis	Why you buy your kumis brand?	Bought kumis presentation	Recommended place to buy kumis
54-72	Akmola	Supermarket Astana	Russian	female	In childhood	Tradition and culture	Sometimes a week	I have the possibility to buy kumis all year long	With local producers	Freshness	Life-cycle festivities	Spring	Buy for herself	Local production	Zhana-sarka	Taste	Without difference	Zhana-sarka aul, shapagat
38-53	Zhanbyl	Supermarket Astana	Russian	male	In childhood	for health	Sometimes a week	I have the possibility to buy kumis all year long	With local producers	taste	Kumishana	summer	Buy for a family with small children	Local production	Zhana-sarka	Taste	1 L	Toyobe village
less than 22	Akmola	Supermarket Astana	Russian	female	In childhood	for health	sometimes a week	I have the possibility to buy kumis all year long	With local producers	taste	Life-cycle festivities	summer	Local children	Local production	other	taste	Without difference	Karaktei
less than 22	West Kazakhstan	Supermarket Astana	Russian	male	During teenage days	for health	sometimes a week	I have the possibility to buy kumis all year long	With local producers	taste	Life-cycle festivities	summer	Buy for herself	Local production	Zhana-sarka	Taste	Without difference	Shapagat
73-90	North Kazakhstan	Supermarket Astana	Russian	female	In childhood	Tradition and culture	Sometimes a month	The supermarket is not far away from my house	With local producers	taste	restaurant	winter	Buy for a family with small children	Local production	Sarzhay/ausly Aity	Taste	1 L	
22-37	Akmola	Supermarket Astana	Kazakh	female	In childhood	like the taste of kumis	Sometimes a month	I have the possibility to buy kumis all year long	In stores with "made in Kazakhstan products"	Freshness	Life-cycle festivities	Spring	Buy for a family with small children	Price, local production	other	other	Without difference	Aptom
54-72	Akmola	Supermarket Astana	Kazakh	female	In childhood	Tradition and culture	sometimes a month	I have the possibility to buy kumis all year long	kumishana	taste	Life-cycle festivities	Spring	I buy it for myself	other	other	other	Without difference	Karaktei
22-37	Akmola	Supermarket Astana	Russian	female	During teenage days	for health	sometimes a month	The supermarket is not far away from my house	With local producers	taste	Life-cycle festivities	summer	I buy it for myself	Local production	Zhana-sarka	Taste	1 L	In the village
38-53	Kyzylorda	Supermarket Astana	Russian	female	In childhood	for health	sometimes a month	I have the possibility to buy kumis all year long	With local producers	taste	Life-cycle festivities	summer	Buy for a family with small children	Price, local production	Zhana-sarka	price	Without difference	
less than 22	East Kazakhstan	Supermarket Astana	Russian	man	In childhood	I like the taste of kumis	Sometimes a year	I can not find kumis somewhere else	Bazaar	taste	fairs	summer	Buy for herself	recommendation	Qazaq house	Taste	1 L	Toyobe village
38-53	Akmola	Supermarket Astana	Russian	female	In childhood	other purposes	Sometimes a year	I like its taste	Bazaar	acidity	Kumishana festivities	summer	Buy for herself	Local production	Sarzhay/ausly Aity	Taste	Without difference	
22-37	East Kazakhstan	Supermarket Astana	Russian	female	In adulthood	Tradition and culture	Sometimes a year	I like its taste	In stores with "made in Kazakhstan products"	acidity	Life-cycle festivities	summer	for other purpose	Local production	Taste	1 L		
38-53	Akmola	Supermarket Astana	Russian	female	In childhood	other purposes	Sometimes a year	I like its taste	Bazaar	acidity	Kumishana	summer	Buy for herself	Local production	Sarzhay/ausly Aity	Taste	Without difference	
22-37	East Kazakhstan	Supermarket Astana	Russian	female	In adulthood	Tradition and culture	sometimes a year	I like its taste	In stores with "made in Kazakhstan products"	acidity	Life-cycle festivities	summer	for other purpose	Local production			1 L	
22-37	Pavlodar	Supermarket Astana	Russian	female	In childhood	I like the taste of kumis	sometimes a year	The supermarket is not far away from my house	In stores with "made in Kazakhstan products"	Freshness	Life-cycle festivities	autumn	members of the family to buy for the oldest	Local production	Sarzhay/ausly Aity	recommendat	500 ml	yamaka
22-37	South Kazakhstan	Supermarket Astana	Kazakh	female	In childhood	I like the taste of kumis	sometimes a year	The supermarket is not far away from my house	Bazaar	taste	Life-cycle festivities	Spring	I buy it for myself	recommendation	other	Taste	Without difference	Karaktei
22-37	West Kazakhstan	Supermarket Astana	Kazakh	female	In childhood	other purposes	sometimes a year	I cannot find kumis somewhere else	With local producers	smell	at festivals	Spring	I buy it for myself	other	other	other	Without difference	In the village

## Raw data of kumis consumption in the bazaars

Age	Region in Kazakhstan	Where?	Language	Gender	First time drink kumis	Buy kumis because	Frequency kumis drinking	What I like in kumis?	Where I drink kumis?	When buy kumis?	Decision to buy kumis	Most important thing about kumis	Where do you buy kumis apart of the bazaar?	Which is your favorite kumis brand?	Why do you buy kumis in the bazaar?	Which presentation do you usually buy?	Which place do you recommend to buy kumis?
22-37	Almaty	Green bazaar	russian	Male	In childhood	I like the taste of kumis	Sometimes a week	Taste	In life-cycle festivals	Summer	I buy it for myself, I buy it for the oldest members of the family to drink, I buy for a family with small children	Local production, taste, health	I only buy kumis from the bazaar	I don't buy any brand	Taste, price, quality, in the bazaar they sell real kumis	1 L	Talgarskiy rayon, Almatinskaya oblast
22-37	Almaty	Green bazaar	russian	Male	In childhood	I like the taste of kumis	Sometimes a week	Taste	In life-cycle festivals	Summer	I buy it for myself, I buy it for the oldest members of the family to drink, I buy for a family with small children	Local production, taste, health	I only buy kumis from the bazaar	I don't buy any brand	Taste, price, quality, in the bazaar they sell real kumis	1 L	Talgarskiy rayon, Almatinskaya oblast
22-37	Almaty	Saryarka bazaar	russian	Female	In childhood	for health, local production, quality	sometimes a week	smell, freshness, acidity	In restaurants at the kumishana	Summer	I buy it for myself, oldest members of the family to consume	local production, quality, health	with local producers	I don't buy any brand	price	without difference	I don't know
54-72	Karaganda	eurasia	russian	Male	In childhood	for health	sometimes a week	taste, smell	at the kumishana	Spring	I buy it for myself, oldest members of the family to consume	health	with local producers	zhana-sarka	other	without difference	I don't know
54-72	Karaganda	eurasia	russian	female	In childhood	healthy, tradition and culture	Sometimes a week	taste and acidity	In fairs	summer	I buy the product for children to consume	local production, quality, health	I only buy kumis from the bazaar	other	quality	3 L	Asem bazaar
22-37	Karaganda	eurasia	Kazakh	Female	In childhood	I like the taste of kumis	Sometimes a week	freshness	In life-cycle festivals	Spring	I buy the product for children to consume	local production, quality, health	with local producers	zhana-sarka	quality	without difference	Eurasia
22-37	South Kazakhstan	eurasia	Kazakh	Female	In childhood	I like the taste of kumis	sometimes a week	freshness	In life-cycle festivals	Spring	I buy it for myself	quality and taste	with local producers	zhana-sarka	quality	without difference	Eurasia
22-37	South Kazakhstan	aryom	Kazakh	male	during teenage days	I like the taste of kumis	sometimes a week	taste	kymyzhana	Autumn	I buy for myself	quality and taste	with local producers	other	other	without difference	In the kumishana in Astana mosque
22-37	South Kazakhstan	aryom	Kazakh	female	during teenage days	I like the taste of kumis	sometimes a week	freshness	In life-cycle festivals	Spring	I buy for myself	quality	with local producers	zhana-sarka	taste	without difference	I only buy from the bazaar
22-37	zhambyl	aryom	russian		In childhood	I like the taste of kumis	sometimes a week	taste	kymyzhana	Spring	I buy for myself	quality	kumishana	other	other	1 L	kumishana in Astana mosque
22-37	South Kazakhstan	aryom	russian	male	In childhood	for health	sometimes a week	taste	kymyzhana	summer	I buy it for myself	health	with local producers	zhana-sarka	other	without difference	kumishana in front of Nur-Astana mosque
22-37	Kostanay	aryom	russian	Female	In adulthood	for health	sometimes a week	acidity	In life-cycle festivals	Summer	I buy it for myself	quality	in stores with producers made in Kazakhstan	turgyskiy	other	without difference	Shagapbat
38-53	Akmola	shanghai	russian		In childhood	for health, tradition, and culture	sometimes a week	taste	restaurants	autumn	I buy the product for children to consume	quality	zhana-sarka	zhana-sarka	At the bazaar they sell the real kumis	1 L	Shanghai
22-37	Pavlodar	shanghai	russian	male	In childhood	I like the taste of kumis	sometimes a week	taste	kymyzhana	summer	I buy it for myself	quality, health	producers	other	taste	1 L	Shanghai
38-53	Almaty	Green bazaar	russian	Female	In childhood	I like the taste of kumis, for health	sometimes a month	Taste	In life-cycle festivals	Summer	I buy it for myself	Quality	I only buy kumis from the bazaar	I don't buy any brand	taste, quality, in the bazaar they sell real kumis	without difference	At the Green Bazaar
38-53	Almaty	Saryarka bazaar	russian	male	In childhood	for health, tradition and culture	sometimes a month	Freshness and acidity	In life-cycle festivals	Summer	I buy for other purpose	Quality and health	with local producers	I don't buy any brand	other	without difference	At the Green Bazaar
38-53	akmoia	eurasia	russian	Female	In childhood	tradition and culture	sometimes a year	freshness	at the kumishana	winter	for the oldest members of the family to drink	health	with local producers	taste	taste	without difference	Eurasia
22-37	North Kazakhstan	shanghai	russian		In childhood	I like the taste of kumis	sometimes a year	freshness	at home	spring	I buy it for myself, I buy it for other purpose	quality	I only buy kumis from the bazaar	other	they sell the real kumis	without difference	Aryom
38-53	Pavlodar	shanghai	russian	Female	In childhood	I like the taste of kumis	sometimes a year	taste	In life-cycle festivals	summer	I buy it for myself, I buy it for other purpose	quality	bazaar	other	price and quality	without difference	Big Shanghai

### Interview with Yerubay (Koksay, Almaty)

Interview transcription (English translation)	Labels
My name is Yerubay. This is my wife Uldar. We have been working in the area of animal breeding for 4 years now	Animal breeding
We have been working in the area of animal breeding for 4 years now. We raise cows and horses. We have camels at a different place.... It is our family business, my brothers, wife and other relatives are involved, around 6-7 families. We pay salaries to them.	Raise cows and horses Family business Salaries
You can make manty <sup>28</sup> , pelmeni <sup>29</sup> , kurdak <sup>30</sup> . We serve it to guests. We have a lot of visitors during weekends and fewer on weekdays. There is also a delivery of our products.	Consumers Weekend visitors
As for the quality of kumys, it is made from our own-made milk, the quality is very high.	Own product Quality of kumis
We are interested in satisfying the client, so we are all aimed at quality.	Satisfy client
It is very hard to breed camels nearby. We keep them at a different place. 4-5 people deal with camel breeding for us.	Camel breeding
Cows are of a very high breed. Milk is processed and then kurt, butter and other products are produced. Natural products are very good, and we sell those.	Natural product Production of kurt and butter
When we raise horses, they have colts ... Then we use it as a soghym <sup>31</sup> .	Raise horses Colts Soghym
We only sell here. In the future we think of opening few selling points in the city.	Local sales Market Selling points
There are many kinds of kumys. First is asau kumys <sup>32</sup> . Bal kumys <sup>33</sup> , besti kumys <sup>34</sup> . 3-4 kinds we have.	Kinds of kumis

<sup>28</sup> Manty is a dish from the Central Asian region that consists in rounded-shaped dumplings filled with meat and onion served as aperitives in company of mayonnaise or as a soup.

<sup>29</sup> Pelmeny: Russian-style dumplings filled with potatoes, mushrooms, horse meat or beef served with sour cream or as a soup.

<sup>30</sup> Kurdak is a dish of the Central Asian cuisine consisting in horse's liver.

<sup>31</sup> Soghym is a Word in Kazakh language that denotes the usage of a horse for meat consumption.

<sup>32</sup> Asau is a type of kumis with x days fermentation

<sup>33</sup> Bal kumis is a sweet type of kumis with a taste like honey according to the Kazakh word translation "bal".

<sup>34</sup> Best kumis is a kumis with 5 days of fermentation.

<b>Interview transcription (English translation)</b>	<b>Labels</b>
Depending who wants what kind, we try to get. Asau or aigyr kumys – sour, for example.	Consumer desire Asau kumis Sensorial
People do not often request sour kumys. The most popular one is bal kumys. Even kids can drink.	Bal kumis
Since they take it home it is better when it is universal to everyone. Mare milk is also taken home from here.	Mare's milk
As for milk, Zhaby's milk is good. Zhaby's height is shorter. Russian is also not bad. We get 1 liter from one milking	Zhaby, Russian
Of course, in spring animals calve. We sell a lot in spring. In winter not everyone milks the horse, very rarely; only those who have good conditions.	Spring and winter
For example, we milk all year round. Before winter, we milk horses that were born in spring. Then in winter we milk those horses that were born later.	Milk before winter Milk all year round
Of course, in winter supply is lower since production is lower. In spring kumys consumed more but it is also produced in larger amount.	Production
Usually people don't know it is produced in winter, they only knew about spring and summer. Step by step people are learning.	Learning
No difference. In autumn grass is fresh so kumys is fatter. Now grass is dry, so milk is not so fat. Generally, no difference. In spring milk is fat.	Grass
Because people got used that in winter there is no milking. Of course, if made in clean conditions, it is the same kumys.	Winter
You cannot compare kumys in supermarkets and in our farm...(Husband): I will explain. The expiry date in supermarkets is only 1 month. Certain chemicals weaken gases in kumys.	Local vs mass production Expiry Chemicals Kumis sensorial properties
We do not add anything to our kumys, it is fresh and pure. I do not know exact names, but something is added.	Fresh and pure Additives
Clients usually come themselves. They prefer to see themselves. We do not have a shop to demonstrate.	Clients
Clients usually come themselves. They prefer to see themselves. We do not have a shop to demonstrate.	Boutique
We can also place our meat. But people normally prefer to come here. We also deliver to some.	Consumer preferences Deliver

Interview transcription (English translation)	Labels
I will show you something...Wait, there is some post in Instagram...You must know this person. Do you know him? He is from Poland. Kulakovskiy.	Person from Poland
He is 89 years old, almost 90. A man with a beard...I think it was in spring...or autumn... ...The singer...Serik...	Kazakh singer
This are Kazakh traditions. Here kumys, shubat, cheese. It is served at weddings	Kazakh traditions
This is our production in advertisement...	Advertisement
Who buys more, man or women?	Buy kumis
Mainly, of course, men. As they like kumys more. Females prefer shubat <sup>35</sup> .	Men
I heard about it, even saw it. We do not have a large stock. Once we have more, we will try. Right now, we do not have suitable conditions, we need a larger space. Later we can think about it. Of course, we need to develop.	Large stock
We explain to everyone. Youth mainly have digestion problems. We recommend saumal.	Health problems Saumal
Camel milk is also very useful. We also advise drinking it. Rather than taking pills, couple of takes of such milks gives an effect. Now it is popular to eat fast food, sometimes they eat a lot, sometimes skip eating. That leads to stomach aches. I can 100 per cent of clients get better.	Pills Eat fast food Change in tradition
Taking care of horses, tying them, milking them it is labor consuming, so people are usually lazy and avoid hard work. Milking sometimes takes place every 2 hours.	Two hours
It requires patience. It is not about milking once in the morning and once in the evening like with cows. Sometimes 8 times per day.	Patience Milking 8 times
Well, sometimes they want to keep some milk for colts (kids of horses), to make them stronger.	Milk for colts
There are different kinds of business. Our focus is producing and selling milk. For others it is important to grow more cattle.	Business
Saumal gets colder, then it is ready to add to fermented kumys. Then put it in hot to kill bacterias.	Fermented kumis
600, 700 times, sometimes 1000 times is beaten. The more kumys is churned and fermented the better.  <i>Yerik's comment: this technology is not explained well and clearly. Better to rely on other sources, even Internet.</i>	Churned and fermented

<sup>35</sup> Shubat is a drink made from fermented camel's milk. It is a popular drink in South and West Kazakhstan.

<b>Interview transcription (English translation)</b>	<b>Labels</b>
Kumys in restaurants is usually ours. It is bought from here. Of course, not solely ours, from other fazendas too.	Kumis in restaurants
Depends on quality. If we haven't had a good quality, nobody would have come. Famous people, singers come because of quality, not because of respect to me.	Quality
Some kumys is too sour. People may like it. Tastes differ.	Taste differ

### **Interview with Bakhyt (Qazaq house)**

The present interview took place in Nur-Sultan, at the Koktal village in the house of a producer called Bakhyt. Bakhyt acts as the founder of the company Qazaq house. The production of Qazaq house in the meantime is only Nur-Sultan-based with selling points distributed between restaurants of Kazakh traditional cuisine in the village and supermarkets with gourmet products as with the case of Galmart.

<b>Interview transcription</b>	<b>Labels</b>
Good afternoon, could you please tell me from which city are you from? From Nur-Sultan	Nur-Sultan
Very good. I have a question for you: For how long did you worked as a producer of kumis? Did you mean about for how long I have been in the business? it has been 11 years now.	Business
Wow, this is indeed a long period of time. And what where the main reasons in deciding to become a producer of kumis? Why kumis in specific? Because I study in detail everything about horse farming, and like a business, yes? Well, because this is a profession where you can obtain money. At the beginning, I didn't see this profession as a business. It just happened that I had many horses for myself	Horse farming Obtain money Profession Horses for himself
Afterwards, when we produced our own products and our neighbors started to buy from us, they requested from us to give more and more, and we also produced a higher quantity. And then, as time passed by, it turned into a business for us. From a hobby it turned out a business.	Own products (brand) Buy from us business hobby
Oh, this became a great idea, I think. Then, when we started the business, we realized that it was a complex task, not only owning the horses or producing new edible products, but also to promote your brand and identity, something to make you different from the competence.	Owning horses Producing new products identity

Interview transcription (English translation)	Labels
<p>And if I may ask what you like the most about kumis? I like the job, because this is the job that brings money. Maybe you can also describe me a little bit what are your personal perceptions towards kumis, like for instance, why you like drinking kumis? I like to drink all types of kumis, whenever there is kumis, I taste it. Kumis is like cheese, you know. Cheese has different presentations, taste, so do kumis. There is kumis that is sour, other types of kumis that aren't very sour and at the same time have a slightly sweet taste. At the end, it doesn't matter which type of kumis you are drinking, kumis in general is a healthy drink for the organism.</p>	<p>Like the job Perceptions of kumis Kumis is like cheese Sweet and sour Healthy drink</p>
<p>How do you like to drink kumis, alone, with your family, in parties, at the restaurants? We like to drink it at home, we drink it sometimes a day, like for example, when I go to milk the horses, at lunchtime, during the afternoon. There is a belief about kumis, if you haven't eaten a meal you can drink kumis and it will make you feel full for more than two hours. For me kumis is more than the experience of drinking it, it is about feelings, a sense of belonging and connectedness to my ancestors, my homeland. We have a great esteem for kumis. Which types of kumis exist in the market? I don't know, in terms of types of kumis there are two divisions: sweet and sour, between sour and sweet there are different subclassifications, after, there is "kaptin", "dim" (ash in Russian language), this ash helps the kumis to maintain its properties and the characteristic taste, the ash comes from flowers. Is just that I am intrigued in finding out about different types of kumis. I will elaborate better my argument. In one book I read that the first process is saumal, right? And then there is also sary kumis, tunemel kumis, besti kumis, etc.</p>	<p>Ash Places of kumis Experience Connectedness Saumal Days of fermentation Purchase Clients are exigent Accustomed to taste Bazaars in Nur-Sultan Qazaq house Presentations of kumis Differences in price Milk produced</p>
<p>Yeah, this classification is based from the sweetest to the sourest kumis. The difference between them is just the days of fermentation, one day, two days, four days, five days, etc. And the the people also name one of them as Tay kumis, but there is no difference. Let's say that we have one client that would like in specific to purchase "besti kumis", could you offer this type of kumis to the client, how he/she could distinguish it? I don't understand. Yeah, what I wanted to say is that if a client comes to you and asks you do you have besti kumis, can you offer him this product? Yes of course. But again, I cannot tell I will distinguish each type of kumis by its appearance, when we separate it into parts in different pots and we leave them ferment 1,2,3,5</p>	<p>Effort Type of artifacts Milking mares Population in the villages Taste of kumis Zhaby Herbs Steppe Apples Kumis in Nur-Sultan Season Price Market revival</p>

Interview transcription	Labels
<p>days. But for our clients, we will not tell them that this kumis has certain specific days of fermentation, we just bottled the kumis in one flavor and that's all. Because we know that clients are exigent, they get accustomed to one taste and they want the same taste one time after another.</p> <p>Yeah, I saw this tendency when visiting some of the bazaars in Nur-Sultan</p> <p>I went to Galmart and I check out the brand of Qazaq house is in the milk product section, presentations of 1 L, 2 L, 5 L. In your opinion, which type of presentation is more popular with your clients? If there is mom, dad and one child they take 1 L, and if it's a bigger family they take 15 L, 3 bottles of our 5 L presentation.</p> <p>Part of kumis industry challenge is the differences in price between 1 L of milk, I will put one example, 1 L of milk costs 100-200 tenge in the bazaar and 1 L of kumis can go to 600-700 tenge. Everything depends on the L of milk produced by each animal, for one time a cow can give 10-15 L of milk and a mare can give maximum 5 L, so here kumis is more expensive because more effort needs to be done for the milking and for the less amount of milk produced. Also, the thing we charge is the production, the type of artifacts used for preserving and storing the milk.</p> <p>I have a curious fact in my mind now that hope you can help me on clarifying. Is there a difference in taste of kumis according to the breed of horse used for milking purposes?</p> <p>There is not a difference. We just must make the mares accustomed to being milked, we do this process every two hours, when they have their own breed since the horses must feed from their mother, we can be able to do this process every 40 min, every 2 hours, 1.5 L are obtained.</p> <p>And do you know the names of the breed that you as producers use to obtain saumal and kumis? I don't know about that. We just call them mares. However, I can saw that we don't milk all the mares. Each mare or horse has its purpose. So, let's say we have the horses used for sport activities, we don't use these horses for milking purposes. Most of the Kazakh population in the villages has a couple of horses (mare), and they take care of them, milk them, etc. It's usually 1-2 horses each family has.</p> <p>Well, now that I'm thinking about we have own national mare, there is a relationship of ishin? Our traditional mare is called zhaby.</p> <p>I would like to clarify you something about kumis. As you see, here in Nur-Sultan we are in the steppe, and there are not many fresh herbs that grow, nowadays yes, but 15 years ago there wasn't anything here. Now the taste of kumis has</p>	<p>Kazakhs and Russians</p> <p>Therapeutic agent</p> <p>Cheaper option</p> <p>Restaurant</p> <p>Supermarket</p> <p>Stores with organic products</p> <p>Bazaars</p> <p>Collect kumis</p> <p>Distribute</p> <p>Preservation</p> <p>Personal perception</p>

<b>Interview transcription (English translation)</b>	<b>Labels</b>
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<p>I would like to clarify you something about kumis. As you see, here in Nur-Sultan we are in the steppe, and there are not many fresh herbs that grow, nowadays yes, but 15 years ago there wasn't anything here. Now the taste of kumis has changed, because there are herbs and horses are also fed with fruit like apples, so here there are flavors that give a different characteristic to kumis. And in the summer is even better because the plants, herbs grow, there are more fruits, we feed our horses and then milk get even a more higher nutrition content. That's why people enjoy drinking kumis in the summer.</p> <p>Is there a season in your opinion when people buy more kumis in Nur-Sultan?</p> <p>Yes, a couple of years ago people decided to buy in the summer, but now I see that people prefer to buy in other seasons despite knowing themselves that taste differ. Now they prefer to buy in spring despite milk products being more expensive. The milking season starts in the spring, but they buy kumis more in this period because they don't want to buy during the summer due to a high influx of people doing their shopping in the bazaars at this period. And then on winter people have the belief that there is not kumis in winter, but that's not the case, I myself continue with the production of kumis during the winter.</p> <p>Our bottle of kumis costs 700 tenge, but how much does it cost either in the bazaars or supermarkets, I don't know.</p> <p>And if I want to buy in winter, the price will be higher, yes?</p> <p>Yes, probably it will be higher. Two years in a row we managed to keep the price intact for all the seasons, but in this year (2018) it will be more expensive. This depends on the market, in the competence between the brands of kumis in stores, we check the price standard and through that a decision is made. Before there wasn't a market, so fixing the price was much easier, but in the past three years the statistic in the farming area show that there is a tendency to produce kumis to increase, there are more brands that have been registering in the market. Also, there are more producers of kumis, more people start to get interested in incorporating kumis in their daily lives. We are impressed that our market got a revival despite the hard days we had in the Soviet times when we lost lots of cattle and horses.</p> <p>Yes, a couple of years ago people decided to buy in the summer, but now I see that people prefer to buy in other seasons despite knowing themselves that taste differ. Now they prefer to buy in spring despite milk products being more expensive. The milking season starts in the spring, but they buy kumis more in this period because they don't want to buy during the summer due to a high influx of people doing their</p>	

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Interview transcription	Labels
<p>And there are other products in the market with kumis such as baby formula, candies, ice cream, they will have their own market in the future. But if we speak about the drink and not the transformation into other product, I see the production of kumis will remain on a regional level, like Nur-Sultan based only for the case of our local producers that live in the region. Still, the persons are figuring out how accepted will be kumis if it can be preserved for a longer period to go abroad. Now we will start to promote more our product through social media, this is the strategy other producers are implementing. So, for you Sandra, what is your personal perception of kumis? How was the experience of drinking it? I visited the bazaars in Nur-Sultan, I visited Eurasia, Artyom, Shanhai, Shapaghat. But, for me the best kumis I tasted from the bazaars was the one from Eurasia. This kumis was sour, the freshness was a unique experience for me. But when I bought it from Shanhai, I found the taste to be much more different there.</p> <p>Yes, it is logic, because in the bazaars they are only sellers of kumis but not the producers, that's why in a bazaar you can have kumis claimed to come from different places. So here kumis in the bazaars comes either from Karaotkel, Ondiris, Prirechnoe, Kosshy. Most of the kumis production and distribution in Nur-Sultan comes from Karaotkel, there are many producers of kumis in that village. Many of them have more than 5 horses. Then, they collect all the kumis produced by the community and distribute it to the bazaars of Nur-Sultan.</p> <p>Oh, and there is also Koyandy. This is another place that distributes kumis, specially to the bazaars close to the Central Market.</p> <p>And for you as a foreigner, was it hard to get accustomed to the taste?</p> <p>For me it wasn't hard to get used to it, because in Mexico I also consumed fermented products. We have a national drink in my country called "pulque".</p>	

### Additional notes from Bakhyt's interview

Он начинает утром свою работу, этот хобби и бизнес для него

He begins his job early morning; this is a hobby and a business opportunity for him.

Слабый крепки кымыз молодые Люды нравятся, Люды закаливают 50 Л для вечёрок, каждый день летом кобыла дарит 5-6 Л молока, стоимость мой кымыз 700 тенге, каждое 2 часа доем кобыла, кобыла может быть любую лошадь. Цель год есть кымыз.

The sweetest kumis is sought by the younger generations, usually people request 50 L for parties. Every day during the summer, a mare can give 5-6 L of milk. The price

of my kumis is 700 L, every 2 hours we milk the mares, the mare can be any horse, there is no distinction in breeds. There is availability of kumis all the year.

Бахыт продаётся ваш кымыз в галмарте, в спутнике, в ресторане шынар который находится в коктае, в Алматы в магазине сыздык. У него есть план экспортировать его продукт в Россию а в Кореи.

Bakhyt sells his kumis in Galmart, in Sputnik, at Shynar's restaurant in Koktal, in Almaty at the store Sydyk. HE HAS PLAN TO EXPORT IN THE FUTURE KUMIS TO RUSSIA AND KOREA.

Качество кымыз: кисли, в кобы добавимкымыз для ферментации, резин это антисептик чтобы сохранил свет, чтобы кымыз стать белым, для экстериоризации. The kumis is mixed in the container 2000 times, each producer has its secret this is to incorporate air into the beverage and get the good bacteria to the top. People add sugar to their kumis for it to get a creamier texture.

### Sensorial analysis of kumis (degustation activity)

#### The taste of kumis

	Taste of Nur-Sultan			Taste of Almaty		
	Samples					
Panelist	Zhana-arka	Artyom	Big Shanhai	Sarzhailau	Saryarka	Green Bazaar
<b>1</b>	8	3	6	6	4	7
<b>2</b>	3	5	6	2	3	7
<b>3</b>	6	7	8	2	3	3
<b>4</b>	4	3	4	6	8	5
<b>5</b>	3	3	5	5	3	6
<b>6</b>	4	1	3	2	1	3
<b>7</b>	3	4	7	8	7	4
<b>8</b>	6	5	4	8	6	9
<b>9</b>	1	5	3	4	2	3
<b>10</b>	7	3	2	3	2	7
<b>11</b>	5	4	5	7	7	6
<b>Σ</b>	50	43	53	53	46	60
<b>Average</b>	4.55	3.91	4.82	4.82	4.18	5.45

### The acidity of kumis

Panelist	Acidity of Nur-Sultan			Acidity of Almaty		
	Samples					
	Zhana-arka	Artyom	Big Shanhai	Sarzhailau	Saryarka	Green bazaar
<b>1</b>	7	4	7	5	4	4
<b>2</b>	5	6	5	4	5	7
<b>3</b>	3	1	1	2	7	9
<b>4</b>	7	4	5	3	7	4
<b>5</b>	5	2	5	2	1	2
<b>6</b>	4	1	3	1	1	3
<b>7</b>	3	7	5	4	8	6
<b>8</b>	7	8	8	9	7	6
<b>9</b>	1	5	8	3	2	4
<b>10</b>	7	2	5	6	2	5
<b>11</b>	5	4	8	7	7	7
<b>Σ</b>	54	44	60	46	51	57
<b>Average</b>	4,91	4,00	5,45	4.18	4.64	5.18

### The freshness of kumis

	Freshness of Nur-Sultan			Freshness of Almaty		
	Samples					
Panelist	Zhana-arka	Artyom	Big Shanhai	Sarzhailau	Saryarka	Green bazaar
<b>1</b>	8	4	6	7	8	7
<b>2</b>	4	4	5	4	4	7
<b>3</b>	5	4	2	6	7	6
<b>4</b>	7	6	6	7	8	6
<b>5</b>	5	3	4	7	3	7
<b>6</b>	4	1	3	1	1	3
<b>7</b>	5	3	4	7	7	5
<b>8</b>	5	8	7	5	6	8
<b>9</b>	1	5	3	4	2	3
<b>10</b>	7	3	3	5	2	6
<b>11</b>	4	5	5	7	8	5
<b>Σ</b>	55	46	48	60	56	63
<b>Average</b>	5,00	4,18	4,36	5.45	5.09	5.73

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