Kaunas University of Technology

Faculty of Social Sciences, Arts and Humanities

Issues of Culture Specific Item Translation in Traditional Lithuanian Restaurant Menus

Master's Final Degree Project

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Issues of Culture Specific Item Translation in Traditional Lithuanian Restaurant Menus

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Summary

The **relevance** of the topic is based on the fact that traditional food is linked to means of cultural preservation and many travellers seek to experience culture through gastronomy. An inaccurate menu translation negatively affects the reputation of the restaurant and the overall experience of the customers. In terms of **novelty,** the distinctiveness of culture-specific items (CSIs) has been addressed by many scholars, such as Davies (2003), Pedersen (2011) and Petrulionė (2012), yet there has been little research on Lithuanian restaurant translations and no research regarding the CSI translation accuracy generated by AI menu translation tools. The **object** of the research is culture-specific items in traditional Lithuanian cuisine restaurant menus, translated from Lithuanian into English. The **aim** is to analyse the most common issues of culture-specific item translation in traditional Lithuanian restaurant menus. In order to achieve the aim of the research, the following **objectives** have been set:

1. To provide an overview of the translation industry in relation to technologies, CSI characteristics and food discourse.
2. To analyse and classify the human translated CSIs of five traditional Lithuanian restaurant menus in terms of translator's cultural knowledge, substitution accuracy, and strategy choice.
3. To analyse and classify the CSI translation accuracy generated by three AI menu translation tools.
4. To conduct a comparative analysis of human translated CSIs and AI translated CSIs concerning translation accuracy and strategy choice.

The **research methods** employed in this study are qualitative and quantitative methods as well as the comparative approach. The research consists of an introduction, theoretical part with an emphasis on technologies and the translation peculiarities regarding CSIs and food related discourse. Moreover, there is a methodological section, in which the implemented methods are detailed. The research's empirical part classifies and examines the accuracy of human and AI generated translation of CSIs. The research concludes with the findings obtained from the theoretical and empirical parts of the study.

The research focuses on the translation of 30 CSIs that were referenced 154 times in the English versions of 5 traditional Lithuanian restaurants such as "Bernelių Užeiga", "Etno Dvaras", "HBH Palanga", "Agotos Gryčia" and "Katpedėlė". The translation variations were classified following a taxonomy proposed by Jan Pedersen (2011) and their accuracy was evaluated based on various traditional food related literature. The AI generated results were obtained by uploading an image of a synthetic menu to "MenuGuide" (2025), "MenuTranslator App" (2024) and "Menuly" (2023)

mobile applications. The analysis revealed that cultural substitution and generalization were the most prominently applied strategies in both human and AI translations. The human translated restaurant menu analysis revealed that there were 154 translations and 101 errors, 33 of which were related to inaccurate cultural substitution. Other common errors were underspecification and translation inconsistency. Moreover, meat dish CSI translation was exceptionally problematic since 39 errors were found in 42 translation variations. The AI generated CSI translation analysis revealed that there were 118 translations and 135 errors. The most common errors were underspecification, inaccurate cultural substitution and inaccurate illustrations. Notably, there were 11 cases when AI generated completely unrelated translations. “MenuTranslator App” displayed the highest level of CSI translation accuracy, while “MenuGuide” was the least accurate. It is evident that human translation is more reliable than AI generated translation regarding the 30 CSIs.

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Kaunas, 2025. 75 p.

Santrauka

Temos **aktualumas ir naujumas** grindžiamas tuo, kad tradiciniai patiekalai yra kultūrinio paveldo dalis ir dauguma keliautojų siekia pažinti kultūrą per gastronomiją. Netikslus valgiaraščio vertimas neigiamai veikia restorano reputaciją ir restorano lankytojų patirtis. Kultūrinių realijų (KR) unikalumas nagrinėtas daugumos mokslininkų, pavyzdžiui, Davies (2003), Pederseno (2011) ir Petrulionės (2012), tačiau lietuviškų restoranų valgiaraščių vertimas nėra plačiai išnagrinėtas, taip pat nėra tyrimų susijusių su dirbtinio intelekto (DI) valgiaraščių vertimo įrankių tikslumu. **Tyrimo objektas –** į anglų kalbą išverstos kultūrinės realijos, kurios pateikiamos tradicinių lietuviškų restoranų valgiaraščiuose. **Tyrimo tikslas** – išnagrinėti tradicinių lietuviškų restoranų valgiaraščiuose dažniausiai pasikartojančias kultūrinių realijų vertimo problemas. Siekiant tyrimo tikslo, buvo iškelti šie **uždaviniai**:

1. Pateikti bendrą vertimo industrijos teorinę apžvalgą, susijusią su technologijomis, kultūrinių realijų unikalumu ir kulinarinės literatūros vertimu.
2. Išnagrinėti ir suklasifikuoti penkiuose tradicinių lietuviškų patiekalų restoranų valgiaraščiuose išverstas KR, atsižvelgiant į vertėjų kultūrinę kompetenciją, parinktų atitikmenų tikslumą ir strategijų pasirinkimą.
3. Išnagrinėti ir suklasifikuoti trijų DI valgiaraščių vertimo įrankių tikslumą.
4. Atlikti žmogaus verstų ir DI sugeneruotų KR vertimų palyginamąją analizę sutelktą į vertimo tikslumą ir vertimo strategijų pasirinkimą.

Šiame tyrime taikomi kokybiniai, kiekybiniai ir lyginamieji **tyrimo metodai.** Šio tyrimo struktūrą sudaro įvadas ir teorinė dalis, kurioje daugiausiai dėmesio skiriama vertimo technologijų apžvalgai ir kultūrinių realijų bei maisto diskurso vertimo ypatumams. Be to, yra metodologinė dalis, kurioje išsamiai aprašomi tyrime taikyti metodai. Tyrimo empirinėje dalyje klasifikuojamas ir nagrinėjamas žmogaus ir DI kultūrinių realijų vertimo tikslumas. Tyrimo pabaigoje pateikiamos teorinėje ir empirinėje dalyje gautos išvados.

Tyrimas sutelktas į 30-ties kultūrinių realijų vertimą. Šios KR buvo 154 kartus paminėtos 5 tradicinių Lietuvos restoranų, tokių kaip „Bernelių užeiga“, „Etno dvaras“, „HBH Palanga“, „Agotos gryčia“ ir „Katpedėlė“, valgiaraščiuose. Vertimai buvo suklasifikuoti pagal Jano Pederseno (2011) kultūrinių realijų klasifikavimo sistemą, o vertimų tikslumas įvertintas remiantis įvairia kulinarine literatūra. DI vertimo rezultatai sugeneruoti į „MenuGuide“ (2025), „MenuTranslator App“ (2024) ir „Menuly“ (2023) mobiliąsias programėles įkėlus specialiai šiam tyrimui sukurtą valgiaraščio nuotrauką. Tyrimo analizė atskleidė, kad tiek žmogaus, tiek DI vertimuose, dažniausiai taikomos strategijos yra kultūrinė substitucija ir generalizacija. Žmogaus išverstų KR analizė atskleidė, kad valgiaraščiuose

buvo 154 vertimo variantai ir 101 klaida, iš kurių 33 susijusios su neteisingai parinkta kultūrine substitucija. Kitos dažnai pasikartojančios klaidos buvo susijusios su nepakankamu apibrėžtumu ir vertimų nenuoseklumu. Itin problemiška KR kategorija buvo mėsos patiekalai, kadangi 42 vertimo variantuose buvo aptiktos 39 klaidos. DI išverstų KR analizė atskleidė, kad buvo sugeneruota 118 vertimo variantų ir juose aptiktos 135 klaidos. Dažniausiai pasikartojančios klaidos buvo susijusios su nepakankamu apibrėžtumu, neteisingai parinkta kultūrine substitucija ir neteisingomis iliustracijomis. Taip pat buvo 11 atvejų, kuomet DI sugeneravo su patiekalu visiškai nesusijusį vertimą. DI valgiaraščių vertimo įrankis „MenuTranslator App“ pasižymėjo didžiausiu vertimo tikslumu, o „MenuGuide“ mažiausiu. Po atlikto tyrimo galima teigti, jog žmogaus atliktas 30-ties KR vertimas yra patikimesnis už DI.

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Introduction

Both the rise of technology and global interest in travelling have greatly influenced not only the translation industry, but the hospitality industry as well. The process of globalisation has resulted in a rapidly increasing number of gastronomy enthusiasts who travel around the globe in search of new experience, tastes and cultural immersion. Nowadays, the primary purpose of a restaurant is not to reduce the hunger of its customers, people often gather at restaurants or order food delivery with the intention of socializing with acquaintances and relatives or dining with colleagues.

Since each country has its own food heritage that is influenced by countless years of history, researchers define restaurant menus and national dishes as culture-specific items (CSIs). Translation-wise, these items require sound cultural knowledge as well as awareness of possible translation strategies. Therefore, restaurant menus fulfil an essential role in representing culture on a global scale. However, a lot of restaurateurs disregard the role of translated menus, and either provide solely local menus or offer inaccurately translated ones. The latter are supposedly translated by either amateur translators or by using the means of free neural machine translation tools. However, recently, an increasingly large number of machine translation tools dedicated solely to menu translation have been created, with the intention of overcoming the linguistic barriers. Even though travellers utilize the menu translation tools during their journeys abroad, the quality of these tools is yet to be assessed.

The object of the thesis is culture-specific items in traditional Lithuanian cuisine restaurant menus translated from Lithuanian into English.

The aim of the thesis is to analyze the most common issues of culture-specific item translation in traditional Lithuanian restaurant menus.

Objectives:

1. To provide an overview of the translation industry regarding technologies, CSI characteristics and food discourse.

2. To analyse and classify the human translated CSIs of five traditional restaurant menus in terms of translator's cultural knowledge, substitution accuracy, and strategy choice.

3. To analyse and classify the CSI translation accuracy generated by three AI menu translation tools.

4. To conduct a comparative analysis of human translated CSIs and AI translated CSIs concerning translation accuracy and strategy choice.

The **novelty** of the thesis resides in the changing translation environment and peculiarities of culture-specific items, which have been addressed by many scholars, such as Davies (2003), Pedersen (2011), Petrulionė (2012), Li (2018) and Amenador and Wang (2011). A lot of research has been conducted into menu translation in general, but only a few researchers have investigated the quality of Lithuanian restaurant menu translation. Moreover, there is no research regarding the accuracy of the translation generated by AI menu translation tools.

The **relevance** of this thesis is based on the fact that culture-specific items, such as traditional food, are linked to means of cultural preservation and cultural identity of each country. Many travellers seek to experience culture through gastronomy and therefore choose to visit restaurants that offer to taste local dishes. An inaccurate menu translation not only affects the reputation of the restaurant but the overall experience of the customer as well, since the customer might be deceived by the presented information.

The **scope** of the research includes 30 culture-specific items that are referenced 154 times in the translated English versions of 5 traditional Lithuanian cuisine restaurant menus, such as “Bernelių Užeiga”, “Etno Dvaras”, “HBH Palanga”, “Agotos Gryčia” and “Katpedėlė”. The research focuses on both the original human translations provided by the restaurants, and the 118 translations of the same CSIs generated by 3 AI menu translation tools, such as “MenuGuide”, “MenuTranslator App” and “Menuly”.

1. Literature review

The following sub-sections provide insights into the changing translation environment, define relevant concepts such as culture-specific items, localisation, globalisation, and food glocalisation. Moreover, they highlight the significance of machine translation tools, and provide an extensive review of food discourse translation, along with a discussion of appropriate culture-specific item translation taxonomies.

1.1. Translation, localization, and technologies

In the past couple of decades, gradually increasing technological advancements have deeply affected the translation industry. The definition of a *translator* has raised particular concern, as the defining characteristics have changed during the latter. According to professor emeritus Yves Gambier (2023), formerly, aspiring translators were required to complete specific training in order to acquire a precise and extensive understanding of languages. Moreover, translators had to follow a strict set of rules for translating these languages. Nowadays, as Gambier (2023) notes, there is an abundance of translators who work without proper training or understanding of the process. In addition, instead of trusting their own judgement, most rely on computer-assisted tools (CAT tools) or machine translation (MT). The discussed matter of unqualified translators not only raises ethical questions, but, as Mohamed et al (2024) note, creates a lot of uncertainty for the translation community. Essentially, translators can see the potential in the previously mentioned technological advancements yet fear that the services of human translators will soon be unnecessary. Nevertheless, Gambier (2023) believes that it is a natural process which occurred with the incorporation of technologies into the field and should not be viewed as negative. Moreover, Gambier (2023) notes that as technologies were gradually introduced to the industry, professionals learned how to incorporate them into their work and improve the translation efficiency.

Recently, the use of artificial intelligence (AI) has become widely accessible to the public. In other words, the use of AI or MT became a common practice. Kolhar and Alameen (2021) claim that AI is versatile and can be employed both for personal reasons and commercial purposes. For instance, people may use automated translation in knowledge seeking manner such as understanding foreign websites or articles. In addition, Kolhar and Alameen (2021) highlight, that it is also used for communication purposes between people who do not share a common language. For example, MT can be used by international students in a foreign academic setting, to understand the study material or communicate with professors. Overall, the success of MT is not accidental. According to Wang et al. (2021), the main advantage of MT is that it is more affordable than hiring a human translator, particularly a highly proficient one. Moreover, it is an efficient service, which can instantly generate the translation of the target text. Gambier (2023) states that professional translators occassionaly use MT as well, yet in a more cautious manner. Principally, rather than blindly trusting the generated results, translators use it as an outline for the final translation, applying their knowledge and editing each part that may be unclear or inaccurate.

There is a number of different types of AI-based machine translation models. For example, in a recent study Mohamed et al (2024) discussed the progress in machine translation and described the development of multiple models, such as “Statistical Machine Translation” (SMT), “Rule-Based Machine Translation (RBMT), and “Neural Machine Translation” (NMT). However, according to Wang et al (2021), out of the latter, NMT is currently the leading model. It is said that the success

and dominance of NMT over other models is mainly related to the likeliness of the translation in comparison to human translation. Wang et al. (2021) define NMT as an "end-to-end framework that directly learns semantic representation and translation knowledge from the training corpora" (p. 145). Likewise, Mohamed et al. (2024) note hat the main difference between NMT, and traditional translation strategies is that it does not rely on the translation rules provided and followed by human translators and instead utilizes data and creates patterns itself. It should be noted that NMT is the model which was discussed in the previous paragraph about widely spread MT usage. As Kolhar and Alameen (2021) demonstrate, a classic example of NMT is the publicly accessible online software called "Google Translate".

It is a widely held view that MT proves to be useful during travel, since people are not necessarily capable of communicating in the local language of the country they are visiting (Carvalho et al., 2023; Carvalho & Ivanov, 2023). Therefore, Giampieri and Harper (2022) note, that the usage of MT has widely spread in the tourism industry. As a result, the usage and improvements in the field of AI-powered menu translation models increased as well. However, as research shows, it does not apply to the popular NMT model which was previously mentioned. The recent analysis of MT conducted by Mohamed et al (2024) revealed that "Google Translate", even though widely used for various purposes, inaccurately generates the translation of culture-specific items that appear in culinary texts. Moreover, the result and quality of automated translation of food items is solely based on the simplicity of the item. As Fuente- Lucque (2016) states, MT can easily translate such items as *chicken* or *cod* yet is unable to "create an enticing account of the dish, creatively describing its ingredients and preparation technique" (p. 6). Considering the issue, various developers invested their time in finding the solution for overcoming language barriers. Consequently, a progressively increasing number of mobile applications for the purpose of menu translation were produced.

One of such mobile applications is called "Menu Guide". According to the application website (https://www.menuguide.app), it was created in the Chezh Republic by a developer Jan Horak. One of the defining characteristics of the application is that it is easy to navigate and supports over one hundred languages. Moreover, the users can either use the free of charge version with limited features (three menu scans a day) or purchase and upgrade to a premium plan with unlimited scans. Essentially, the "MenuGuide" (https://www.menuguide.app/) website states that users can take a picture of the local menu, and the advanced-AI model will instantly provide explanations of each dish and convert the price to a different currency according to the user's preference. Another similar application, "Menu Translator App", was developed and introduced by CurlyCorn LLC. According to the "MenuTranslator App" (https://www.menutranslatorapp.com/) website, the application is capable of deciphering and translating both printed and handwritten menus. Another key feature is that it allows users to view an image of the dish that is mentioned in the menu, regardless of whether the illustration is originally included in the menu or not. However, this feature is linked to an online "Google image" search which is prompted by the menu scan, therefore "Menu Translator App" cannot be used offline. Furthermore, the application can be upgraded to the premium version, which allows the users to scan up to 50 pictures a month and listen to the original pronouncation of local dish names. "Menu Translator App" developers (https://www.menutranslatorapp.com/) note, that this encourages users to order food in the local language. The third option, "MenulyAI", was developed by Yunpeng Li (https://menuly.ai/en). Its features are similar to the ones discussed before, such as scanning pictures, generating translations and illustrations. In addition, it has a "bind restaurant" feature, which enables the user to connect a scanned menu to a nearby restaurant

(https://www.menutranslatorapp.com/). There are more applications, however not all of them support a wide variety of languages. For instance, "MenuTech" was developed in Germany. According to the website, (https://menutech.com/en) this application is targeted at restaurateurs rather than their guests. It offers menu planning software, and AI-powered MT, however it cannot be used in Lithuanian restaurants because it does not support Lithuanian language. Overall, the provided examples present and describe the abilities AI can posses in the field of menu translation. However, quick automated translation is not the only advantage of AI. According to Manning et al. (2022), nowadays, AI is used by other food production related businesses as well. In brief, Manning et al. (2022) note that AI is continuously used in food supply chains for data analytics and algorithm generation. Moreover, AI executes other valuable functions such as soil or irrigation management. It is also capable of informing businesses of plant disease, upcoming weather impact on the soil, etc. (Manning et al, 2022). In light of these advancements in other food sectors, it can be assumed that the progress will gradually reach the applications designed for menu translation as well.

The technological advancements referenced in this section have been identified as the primary contributor to the creation of localisation. Fundamentally, as Gambier (2023) notes, localization was originally created for the computer industry. In brief, according to Miguel A. Jimenez-Crespo (2013), localization dates back to the late 1970s. During this time, US computing companies were aiming to internationalize their products. Evidently, the most efficient way to achieve that was through advertising. Several European countries, such as France, Italy, Germany, and Spain (otherwise referred to as "FIGS"), were targeted in the product campaigns (Jimenez-Crespo, 2013). Originally, the term "localization" derived from the term "locale", which Peter Sandrini (2008) defines as "a set of parameters used to identify the user's language, country and other preferences" (p. 2). As Sandrini (2008) notes, a locale is represented by a two-component code, which is composed of two letter representation of language, and a country code, such as lt_LT. Notably, one locale does not necessarily need to be associated with one language only, on the contrary, it can be related to multiple variations of it (Sandrini, 2008). For example, the English language can vary from en_US (American English), en_GB (British English), en_CA (Canadian English), etc. (Sandrini, 2008).

Eventually, both localization and translation became a part of one bigger process, which is referred to as GILT. The acronym stands for Globalization, Internationalization, Localization, and Translation (Jimenez-Crespo, 2013). Despite its common usage and similar understanding of the concept, the definition of localisation varies among researchers. For instance, Fry and Lommel (2003) who are former members of the Localization Industry Standards Association (LISA), define localization as "the process of adapting and manufacturing a product so that it has the look and feel of a nationally manufactured piece of goods" (p. 3). Dr. Christophe Declerq's (2012) makes a similar point in his definition, stating that "localization aims at the target audience, it aims to domesticate the source product to cover the other national or global providence" (p. 3). These definitions clearly indicate a pertinent role localization has in domesticating products and concepts. Notably, in a lot of bibliographical material an acronym "L10n" is used to refer to localization (Sandrini, 2008). As for the localization industry, scholar Anthony Pym (2014) highlights that it has been changing over the years, and "GILT" did not gain enough traction. However, localisation and globalisation remain the most prominent components of the former. Around 2011, the Localization Industry Standards Association (LISA) faced financial difficulties and filed for bankruptcy (Pym, 2014). Nevertheless, Pym (2014) notes that after the disappearance of LISA, another association, the Globalization and

Localization Association (GALA), assumed responsibility over their mission for localisation advancements in the translation industry.

Declerq (2012) wrote an article exploring the multifaceted nature of localization, and distinguished three major components of it, which serves as a useful tool in establishing a link between a localizer and translator. According to Declerq (2012), a localization project is comprised of three levels – translation level, technological level, and cultural level. The author states that the first level of the process focuses on the translation of written discourse or textual strings. The second level is specific to software localisation and refers to the technological project managements positions acquired by different professionals (such as software engineering or file management). The third and final level incorporates an essential component, which Declerq (2012) believes every professional should possess – cultural knowledge. Declerq (2012) describes the essential skills of a localiser as follows:

> […] know which graphical elements, font size and font type are applicable to a specific target locale, […] be able to apply the skills appropriately on a technological level, using various applications such as Catalyst, Passolo, Dreamweaver, Photoshop, InDesign, Flash. (p. 3)

Upon seemingly mutual agreement, scholars hold the view that cultural knowledge is an undeniably essential part of translator's competences (Ajtony, 2016; Davies, 2003; Pouget, 2000; Ruzaitė, 2006). In addition, Declerq's (2012) insights appear to support the assumption that the role of a translator has changed and has been linked to localization as well. Nevertheless, some essential rules remain permanent. For instance, Alfaori (2017) states that each translator, must carefully assess the spoken or written discourse. To that end, no relevant details should be omitted, and the style and meaning of the translated item should remain the same, regardless of being adapted to a different culture or not. A competent localizer, on the other hand, must both be educated on a linguistic level, and proficient on a technological level, beyond CAT tools. Moreover, As Declerq (2012) highlights, localizers must be conscious of what visual elements resolate, and which cultural adaptations or equivalents fulfil the expectations of the target audience. Overall, Alfaori (2017) states that translation performs as a form of mediaton between individuals and communities, allowing to exchange knowledge and wisdom.

In conclusion, the gradual incorporation of technology into the translation process has resulted in a change regarding the role of a translator. Since post-editing requires less time, many translators use the assistance of MT or CAT tools to improve the efficiency of their translation process. Moreover, with the incorporation of technology, a concept of localization came to light, dealing with various cultural nuances and software translations. Nowadays, MT and AI are widely used tools for a variety of purposes, such as translation efficiency, communication and knowledge seeking.

1.2. Translation of culture-specific items

Culture is a fundamental part of society and an integral part of each country. Sagar Karkhanis (2019) defines culture as "a set of socially acquired values that society accepts and transmits it to members through language and symbols" (p. 31). Although various definitions of the term exist, there appears to be some agreement that "culture" refers to residents of the same country or location, who share similar beliefs, traditions, supersitions, or to some extent behavioural patterns (Karkhanis, 2019; Lewis, 2006).

A considerable amount of literature has been published in the field of culture studies, considering such aspects as cultural anthropology, sociology, and superstitions. As a result, several systematic frameworks for culture classification have been developed. One of the most prominent frameworks have been created in the 1980's by Geert Hofstede. As Richard D. Lewis (2006) writes, Hofstede's research has been widely used in the field of intercultural communication and has greatly contributed as well as served as a foundation for the understanding of cultural differences. Nowadays, the data that has been gathered during the active years of Hofstede, can be accessed online. One of such, the country comparison tool, allows users to choose countries and compare their cultural dimensions in the scope of "power distance, individualism, masculinity, uncertainty avoidance, indulgence, and long-term orientation" (Hofstede Insights, n.d.). According to Hofstede (https://www.hofstede-insights.com/country-comparison-tool), the tool provides a visual representation of the differences via graphs and can generate the comparison of up to four countries. Furthermore, another significant contributor to the field is the cross-cultural expert Lewis, and his book titled "When Cultures Collide: Leading Across Cultures" (2006). In the book, Lewis (2006) introduces a culture classification methodology called the "LMR Method". The acronym stands for three cultural dimensions: "linear, multi-active, and reactive" (Lewis, 2006). However, most of these systems of classification tend to overgeneralize and are formulated based on cultural stereotypes. Overall, being knowledgeable on the subject is crucial, especially for businesses that seek to internationalize their products or translators who work as mediators between the two. Despite that, the cultural frameworks create only a generalized concept of culture, and therefore, should be used responsibly.

Globalisation is the most important concept to discuss when considering product internationalisation, and cultural assimilation. It was briefly mentioned in the previous sub-section, during the discussion of GILT. The concept has been the focus point for many researchers, therefore there are multiple definitions of it. For instance, Jensen, Arnett and McKenzie (2011) define globalisation as "the flow across cultures of ideas, goods, and people at unprecedented speed, scope, and quantity" (p. 258). Alternatively, Retnowati (2015) states that globalisation refers to "not a single process, but a set of processes that operate simultaneously and unevenly on several levels and various dimensions" (p. 341). Both definitions highlight the increasing interdependence, blend of cultures, and exchange of technologies that happen in various fields, between various cultures, and countries. However, the cultural assimilation, as argued by Berry (1997), has drawn attention to an important issue – people started feeling excluded, as though they did no longer belong in their own communities:

> People without a sense of themselves (i.e., a cultural identity of their own, rooted in some degree of cultural maintenance), and who feel rejected by others […] are exposed to a significant psychological cost in their own communities. (p. 29).

Berry (1997) describes this phenomenon by referring to it as "marginalization". Fundamentally, marginalization and globalisation work as united terms because one is the result of the other. Moreover, it can be argued that these concepts create controversy for the cultural dimension frameworks such as presented by Hofstede, since each person's experiences are unique. As Lewis (2006) highlights, individuals must not be defined by their cultural norms and values alone: "Yet none of us is an island unto ourselves. Both personality and context will make us a hybrid to some extent" (p. 43). The opinions on impact of globalisation vary between researchers, and the concept is viewed as a both beneficial and detrimental. For instance, Gencarelli and Osti (2019) believe that

globalisation has increased people's interest in both foreign and local cuisine. This phenomenon has led to the creation of new terms, such as "food glocalisation".

A recent definition of glocalisation put forward in a book titled "Globalisation, localisation and glocalisation in gastronomy" (2024) suggests that the term "derived from the English words globalisation and localization and expresses how global influences pressures and demands may be met with a reaction at the local level" (Misir, Can, and Evliyaoglu, 2024, p. 13). The broad definition suggests that the feedback is solely based on the context in which the changes are implemented. In terms of food glocalisation, Kwon (2017) believes that the impact can lead to the loss of cultural identity. According to Kwon (2017), the process of food glocalisation is not related to the honouring of cultural and historical aspects of national cuisine. On the contrary, it is related to the process of changing it and adapting it to suit the preferences of people on a global scale (Kwon, 2017). Since researchers such as Ruzaitė (2006) believe that restaurant menus should be classified as culture-specific items, it creates uncertainty of how a translator should approach such text.

Culture-specific items (CSI) appear in a variety of fields of activity such as literature, advertising, legislation, and cuisine. The term was first used by Aixela (1996) but has since been defined by many scholars. According to the definition provided by Petrulionė (2012), CSIs refer to "a very specific group of references that cause many problems in translation and require from translators both linguistic and cultural competence so that translation loss would not exceed translation gain" (p. 44). This perspective is close to that of Amenador and Wang (2023) who note that CSIs are predominantly difficult to translate because of their uniqueness to the designated country or community. Amenador and Wang (2023) note that even though the concept presented in the CSI may appear recognizable to others, the implication behind the concept may differ. Due to the complicated nature, CSIs have been a long-term object of interest for many researchers. Consequently, the usage of the term has varied in different discourse. To illustrate, a common term to refer to the concept is "culture-specific items" (Baker, 1992; Davies, 2003; Valdeon, 2008), however, Baker (1992) also refers to it as "culture-specific concept". In other frameworks, Davies (2003) introduces it as "culture-specific references", similarly to Pedersen (2011), who calls it "extralinguistic cultural references". Moreover, Valdeon (2008) proposes another term for the concept, called "target culture-related items". Overall, these examples signify that researchers have proposed numerous strategies, and frameworks on how a translator can approach culture-specific items. However, scholars highlight that there is no uniform opinion on which framework is the most precise one produced so far (Amenador & Wang, 2022; Petrulionė, 2012; Pouget, 2000).

A widely acknowledged taxonomy is provided by Mona Baker (1992), and introduced in her book titled "In Other Words: a coursebook on translation", where the scholar presents eight strategies which can be applied to the translation process, when facing a problem of equivalence:

a) Translation by a more general word (superordinate): Replacing the CSI with a hypernym. According to Baker (1922), this is the most widely used strategy.

b) Translation by a more neutral/less expressive word: Using a general substitute which would appeal to a wider audience.

c) Translation by cultural substitution: Replacing the CSI with a closely related substitute in the target language.

d) Translation using a loan word or loan word plus explanation: Leaving the CSI unaltered or by including an explanation.

e) Translation by paraphrase using a related word: Rephrasing the item by using an associated word.

f) Translation by paraphrase using unrelated word: Rephrasing the item by using an unrelated word.

g) Translation by omission: Removing the CSI entirely.

h) Translation by illustration (Baker, 1992): Using an illustration instead of a written explanation.

Overall, Baker's (1992) taxonomy serves as a solid foundation for translators who have trouble translating items with no direct equivalents in the target language.

Another approach was introduced in 2003, by Eirlys E. Davies in an article titled "A goblin or a dirty nose?". According to Davies (2003), the taxonomy was developed for the purpose of culture-specific item translation in the fantasy literature "Harry Potter". Davies (2003) argues that a translator must carefully assess the CSI when translating a text that is set in a foreign setting and apply a translation strategy accordingly. Fundamentaly, there are certain details which cannot be localised and instead need to be preserved in order to accurately deliver the story. However, as Davies (2003) notes, the story also includes CSI items which are not as relevant to the plot and can be localised to increase relatability: "all the translators make certain kinds of adaptations of the original which appear to be motivated by the need to make the text more accessible or acceptable to their child readers" (p. 72). Davies (2003) list of translation strategies can be described as follows:

a) Preservation: Leaving the CSI unaltered, the same as it originally appears in the source text.
b) Addition: Including an additional explanation of the CSI and ensuring that it is not of unusual length.
c) Omission: Removing the CSI entirely.
d) Localization: Replacing the original CSI with a closely related substitute in the target language.
e) Globalization: Replacing the CSI with a neutral substitute, which would be recognizable to a wider audience.
f) Transformation: Changing the meaning of the CSI.
g) Creation (Davies, 2003): Including a CSIs, which does not originally appear in the source text.

Overall, the CSIs that appear in literature, especially in the fantasy genre, contain a lot of items which do not exist in real life and therefore have no equivalent or are too difficult to localise without providing extensive explanations. Due to this, the taxonomy proposed by Davies's (2003) assists the translators in finding a suitable solution to the problem.

Professor Roberto A. Valdeon (2008) has written an article on "Alienation techniques in screen translation" where he proposed his translation taxonomy. According to Valdeon (2008), the taxonomy was developed for the purpose of culture-specific item translation in an audiovisual setting. The author states that the strategies can be divided into two broad categories – preservation, and substitution. The extended list of translation strategies proposed by Valdeon (2008) can be described as follows:

a) Preservation of international items: Leaving items unaltered in cases where they are widely known worldwide.
b) Preservation of culture-specific items: Leaving CSI unaltered.
c) Substitution with a different source culture item: Exchanging the item with a different CSI (e.g. widely known American reference).

d) Substitution with an international item: Using a general substitute which would appeal to a wider audience but would lose some semantic meaning.
e) Substitution with a target-culture item: Replacing the CSI with a closely related substitute in the target language.
f) Substitution with corrupted forms of target-culture items: Replacing the item with a CSI which has been altered.
g) Substitution with a superordinate term: Replacing the CSI with a hypernym.
h) Substitution with another-culture related term (Valdeon, 2008): Replacing the CSI with an item which is recognizable to the viewers but does not exist in the target language.

According to Valdeon (2008), this specific taxonomy was developed fo the CSIs which appear in an American sitcom called "Will and Grace". Since subtitling is known for its limited character rules, the strategies provided by the author serve as a guideline, leading to an appropriate course of action.

The fourth taxonomy was introduced in a book written by Jan Pedersen (2011) titled "Subtitling Norms for Television". Similarly to Valdeon (2008), Pedersen's (2011) taxonomy focuses on audiovisual translation. The book is targeted at subtitlers, who translate textual strings appearing in an audiovisual setting. The main concern is the culture-specific items, or as Pedersen (2011) refers to them – extralinguistic cultural references (ECF). In the book, Pedersen (2011) proposes seven strategies which can be applied to subtitling, and can be described as follows (Fig. 1):

a) Retention which is further divided into complete retention and TS-adjusted: Leaving the CSI unaltered, or only partially altered.
b) Specification (otherwised referred to as explicitation), which is further divided into addition and completion: Including additional information to clarify the meaning of a CSI.
c) Direct translation, which is further divided into calque, and shifted: Translating the item word for word.
d) Generalization, which is further divided into superordinate term and paraphrase: Replacing the CSI with a hypernym or rephrasing it.
e) Substitution, which is further divided into cultural and situational: Replacing the original CSI with a closely related substitute in the target language. The CSI can be local or borrowed.
f) Omission: Removing the CSI entirely.

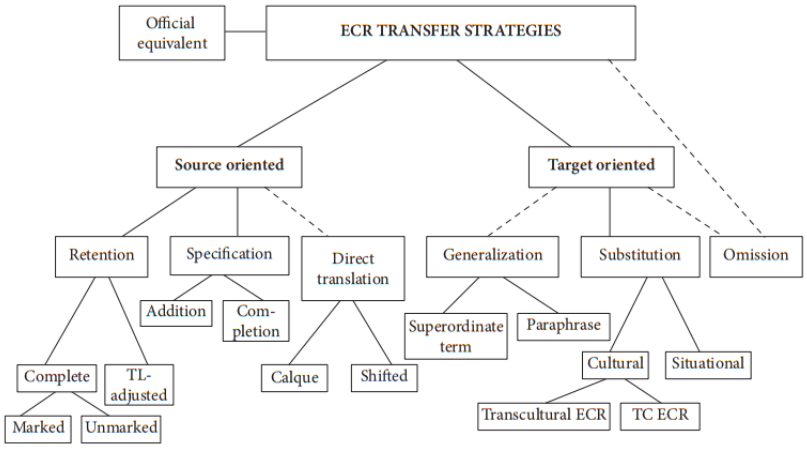

Fig. 1. Pedersen's (2011) taxonomy of ECR transfer strategies (p. 75)

Pedersen (2011) believes that the most common strategy is retention since it requires the least amount of effort, and instead of providing additional explanations, or searching for equivalents, the item can be illustrated visually. Furthermore, Pedersen (2011) notes, that generalization is also a commonly used strategy, especially in cases where specific place names or details are not relevant to the plot and can be generalized. A less common subtitling translation strategy is specification, and, according to Pedersen (2011), it is only employed in cases where there are no arising space restrictions, and if the translation would not otherwise be understandable without the clarifying details.

All strategies were proposed due to various reasons and by different scholars, yet they all have uniting qualities, and strategies, such as rephrasing, substituting and omitting CSIs. The similarities which appear between taxonomies is based on the fact that scholars consistently take previous research into consideration. For example, Davies (2003) created the taxonomy for fantasy literature translation based on insights provided by Baker (1992), Venuti (1995), and Aixela (1996). The latter suggests that the taxonomies are flexible, and can be applied to any type of discourse, if the translator finds it suitable. Fundamentally, translation, especially that of CSIs, cannot be viewed as simply transferring the words from the source language to the target language. Onet and Ciocoi-Pop (2023) specify that every lexical item should be evaluated and replaced with a suitable equivalent in a target language. Choosing a strategy or framework applied to resolve a specific problem, should be done by analysing the background context in which the CSI appears in. Davies (2003) states that by considering the context, the relevance of the item is precisely evaluated, and the translator can choose whether to preserve, change, or paraphrase the item to provide the most accurate translation.

In conclusion, culture is an important concept to consider when researching culture-specific items, since various studies, such as culture classification frameworks, can provide a substantial amount of cultural knowledge. However, other concepts, such as globalization and marginalization are no less important, as they challenge the general definition of culture, and erase certain cultural boundaries, thus, merging cultural aspects.

1.3. Translation of food discourse

Food has always been recognized as one of the primary human needs (Martini, 2022; Stano, 2016). However, as Gencarelli and Osti (2019) note, survival is not the sole purpose of food consumption. According to the authors, food encompasses a variety of components: “Gastronomy constitutes as a part of the cultural, social, environmental, sustainable and economic history of a destination and, as a consequence, also constitutes a medium for expressing local heritage” (p. 37). In this regard, food plays a major role in interpersonal relationships, creates comfort, and encompasses the celebration of ethnic qualities related to the culture.

Gradually, the relationship between globalisation, food, and tourism prompted the creation of a trend called “gastronomy tourism”. Research on the latter conducted by Stalmirska and Ali (2023) revealed that many people prefer experiencing the culture in a leisurely, and unhurried manner, through the indulgence of local cuisine rather than briskly visiting already oversaturated tourist attractions. Similarly, Gencarelli and Osti (2019) note that nowadays, people travel to different locations with the expectation of consuming new flavours and immersing themselves in local culture. In this regard, Chiaro and Rossato (2015) state that translated texts such as national cuisine cookbooks, cooking related television series, and other food related items gained a surge in popularity. As Gencarelli and

Osti (2019) highlight, market for foreign food increased as well. It can be assumed that this movement created a substantial amount of workload for translators.

Gastronomical tourism has attracted considerable attention from both scholars and travel enthusiasts. As a result, it increased the need for translated menus. However, Fuentes-Luque (2016) notes that there are certain limitations in terms of menu translation research. According to Fuentes-Luque (2016), there is no data that would specify whether restaurateurs have commissioned professional translators to perform the task of menu translation. In fact, there is no data indicating how many restaurants have menus translated into the English language at all. Fuentes-Luque (2016) adds that it is not uncommon to encounter an incorrectly translated menu, which seemingly has not been translated by professional, qualified translators, but instead by the means of online dictionaries or free NMT tools such as "Google Translate". However, the notion of declining to hire professionals to translate restaurant menus is not a recent issue. Research conducted by Fallada Pouget (2000), found that a lot of restaurant menus were not translated by professional translators. Pouget (2000) concluded that since a lot of people could already speak a certain level of English themselves or knew somebody else that could, they felt confident in the inessentiality of hiring and paying a translator for such a task.

Moreover, there are some scholarly disagreements in terms of the functions possessed by a restaurant menu. For instance, translation-wise, Dr. Saihong Li (2018) advises approaching restaurant menus as "hybrid texts". Principally, according to Li (2018), these texts have two main functions – to inform the customer and advertise the product. Moreover, Martini (2022) states that restaurant menus are only relevant and functional in the context that they originally appear in. However, Amenador and Wang's (2023) insights challenge Martini's (2022) assumptions. Amenador and Wang (2023) argue that the quality of the translated food menus, especially those of local dishes, is directly related to the reputation of not only the restaurant, but the country as well. In addition, Pouget (2000) believes that the quality of menu translation, or lack thereof, can also reflect on the level of English language usage in that specific location or region. Thus, creating either a positive or negative community's representation in international context.

In terms of the translation process, Martini (2022) believes that one of the fundamental steps of menu translation is determining the target audience, and in most cases, it is tourists who are not native speakers. In this regard, Martini (2022) suggests that the translator should decide on which language related locale to use. For example, if a translator chooses American English, it should be consistently used all throughout the menu. Consequentally, Martini (2022) highlights the notion that customers should feel confident and independent when using the translated menu. For instance, the translated menu should be as informative as possible, and the translator should not expect the customer to request information from the restaurant employees. If the translator chooses inadequate descriptions or does not specify certain details, the translation might cause an inconvenience for both the customer and the employee, especially during the most active hours of the workday, such as lunch time (Martini, 2022). Pouget's (2000) insights show certain similarities to Martini's (2022), as the author notes that the prime concern of a translator should be the creation of an informative translation of the dish. Therefore, Pouget (2000) notes that the translator should conscientiously choose a translation strategy, which would fulfil the needs of the target audience.

According to various scholars' insights, there are a lot of things to consider when applying a strategy. For instance, Amenador and Wang (2023) state that CSI's which are left unaltered in the target text

might be unrecognizable to the target audience but a completely regular and widely known dish to the locals. Martini's (2022) insights supplement this remark, as she writes that, "leaving source language word items increase awareness of the culture, local food is an integral part of the travel experience" (p. 87). Moreover, in cases where the menu is illustrated, the picture instead of a translated CSI may be informative enough. Essentially, Li (2018) mentions that nowadays society is "predicated on image-based communication and advertising" (p. 10). Considering the notion of gastronomical tourism, it can be assumed that some tourists research the country beforehand and might have read about certain dishes that they were intending to order, therefore, the preservation of CSI seems accurate. However, some scholars believe that if a translator does not provide additional information, does not rephrase or substitute the CSI, the customer may feel excluded (Koskinen, 2012). To illustrate, Koskinen (2012) writes about another form of CSI, namely local street signs. He believes that untranslated items have a concealed meaning, and comments on it stating that, "the city seems to be saying that you are not welcome unless you speak the local language" (p. 87). Overall, there are multiple approaches to the same problem. However, a translator should carefully assess the intentions of the restaurant, determine the target audience, and attentively choose a strategy to apply to the translation of CSI.

Martini (2022) describes traditional food items as "intangible cultural heritage" (p. 65). It is said that such restaurants serve a different purpose than the ones which serve international dishes. Gencarelli and Osti (2019) believe that traditional food restaurants are considered a place in which people enjoy the atmosphere, indulge in ethnic food, and spend time with company, rather than a place for casual lunch. In this regard, Ajtony (2016) believes that translating traditional food items is an even more challenging task than regular dishes. As the author notes, translators must provide short and accurate descriptions of the items which are not common in other cultures. Ajtony (2016) adds that in a lot of cases, the translators cannot access the ingredient lists or way of preparation (unless otherwise stated in the menu). This implies that if not already knowledgeable, the translator must do additional extensive research independently. Furthermore, Stalmirska and Ali (2023) note, that certain restaurants offer dishes inspired by specific ethnic groups based in the location. This suggests that certain restaurants would want to retain the original CSI to emphasize the importance of the cultural aspect. Gencareli and Osti (2019) believe that similar challenges arise with food label translation in stores, where consumers search for authentic food. Disregarding the importance of cultural knowledge would result in an inaccurate translation. As Li (2018) notes, on the occasion that even a culture-knowledgable customer would find the translation insufficient and would not link it to the advertised product, the translation would be deemed as improper. This further emphasizes the importance of translator's cultural knowledge, and accurate strategy selection when approaching CSIs.

In conclusion, gastronomical tourism has not only increased the interest of travellers, but of researchers and translators as well. Research into menu translation has shown that the translation of food items and menus can pose certain challenges for translators, since many different aspects of the translation need to be considered. For example, translators must have a clear concept of the target audience, be knowledgeable in culture related gastronomical nuances, and determine the level of cultural preservation for each item. It is also important to consider whether the menu is illustrated, since in such cases, additional descriptive details are not necessary. Moreover, the translators must provide a short yet precise and informative translation of dishes, which is especially challenging with CSIs. If the translator does not follow the recommendations, the translation may be improper because

of insufficient information, inaccurate cultural substitutions or incorrectly chosen and applied translation strategies. Such translations would not only inconvenience both the employees and customers but also might negatively affect the reputation of the restaurant.

2. The analysis of culture-specific item translation

The first sub-section outlines the methodology applied to this research, detailing the procedures which have been employed for the collection, classification, and analysis of data. The second and third sub-sections detail the content analysis, while the fourth sub-section presents and compares empirical findings through a graphical representation.

2.1. Methodology

The research employs a mixed method approach, along with a comparative analysis. A qualitative method is chosen since it allows a deeper insight into the classification strategies, and accuracy of the translated culture-specific items. A quantitative method is chosen to capture the frequency of both the classification strategies, and error count by summarizing the data, and providing a graphic representation. Comparative analysis is applied to conduct a comparative analysis between human translated CSIs and AI translated CSIs concerning translation accuracy and strategy choice.

The research focuses on the content analysis of 5 traditional Lithuanian restaurant menus which have been translated from Lithuanian into English. Each translation includes brackets with an initial indication of the restaurant name in which the translation variation is present. For instance, the restaurant Bernelių Užeiga is marked as (BU), Etno Dvaras as (ED), HBH Palanga as (HBH), Katpėdėlė as (K) and Agotos Gryčia as (AG). The sample for this study consists of 30 culture-specific items, which have been referenced 154 times throughout all the selected menus. The restaurants and the CSIs were chosen based on a homogenous sampling technique and had to meet a criterion regarding traditional Lithuanian cuisine and local items. The data was collected at the beginning of 2025 (January to March), the exact dates when the restaurant menu translations have been published are irrelevant to the study.

The CSIs are classified following a taxonomy proposed by Jan Pedersen (2011). Each translation is classified into at least one of the seven Pedersen's (2011) strategies: retention, specification, direct translation, generalization, substitution and omission. Moreover, since cultural appropriateness of the translations is an integral part of CSI translation, various traditional recipe books and discourse written by such authors as Imbrasienė (2009) and Laužikas (2014) are employed in the research. Therefore, the content analysis includes details about the traditional recipe or origin of each dish, to have an in-depth awareness in terms of translation accuracy.

The second part of the analysis focuses on the CSI translation accuracy of AI menu translation tools, such as "MenuGuide", "MenuTranslator App", and "Menuly". An artificial, synthetic menu was used as a controlled data set to determine the proficiency of the selected tools in terms of culture-specific item translation. The synthetic menu was created on a graphic design platform called "Canva" and contains the 30 items which have been selected during the sampling process. Since the CSIs are analysed outside the original context they appear in, this method allowed to generate a controlled result for analysis of each AI application. Moreover, each generated translation was classified according to Pedersen's (2011) taxonomy to recognize what strategies are employed by AI in contrast to human translators and how that affects the translation accuracy and error count. The synthetic menu is included in Appendix 7.

2.2. Analysis of human translated culture-specific items

The traditional Lithuanian dishes are divided into six categories: salads and soups, potato dishes, meat dishes, dairy dishes, snacks and desserts, and beverages. Each enumerated (1-30) translation example illustrates the original Lithuanian CSI and the English translation variations which appear in various restaurants. The restaurants are indicated by their initial letters in the brackets. The content analysis has certain limitations, since most CSI translations vary in different restaurants, and therefore cannot be divided into error types or translation strategies beforehand. The content analysis begins with the evaluation of salad and soup translations of four CSIs (table 1), such as *balta mišrainė, barščiai, šaltibarščiai*, and *šiupininė sriuba.*

Table 1. Human translation of culture-specific salad and soups.

No.	Item	Bernelių Užeiga (BU)	Etno Dvaras (ED)	HBH Palanga (HBH)	Agotos Gryčia (AG)	Katpedėlė (K)
1.	*Balta mišrainė*	-	-	*White salad*	*Lithuanian salad*	*Lithuanian salad*
2.	*Barščiai*	*Lithuanian beetroot soup*	*Beetroot soup*	-	*Borsch*	*Borstch*
3.	*Šaltibarščiai*	*Cold beetroot soup*	*Cold beetroot soup*	*Holodnik (Cold red beet soup)*	*Šaltibarščiai (traditional cold beetroot soup)*	*Cold beetroot soup*
4.	*Šiupininė sriuba*	-	-	-	-	*Hotchpotch soup*

1. LT - *Balta mišrainė; Lietuviška mišrainė*
   EN – *White salad* (HBH); *Lithuanian salad* (AG; K)

The first culture-specific item *balta mišrainė* (example 1) is otherwise known as *lietuviška mišrainė*. It is a traditional side dish which is popular not only in Lithuania, but in other post-Soviet countries as well, such as Latvia and Poland (Nicholson, 2015). The dish is traditionally prepared from diced boiled potatoes and carrots, canned green peas, pickles, and mayonnaise (Nicholson, 2015). It is served in three restaurants – HBH Palanga, Agotos Gryčia, and Katpedėlė. The translations which are included in the English menus can be divided into two variations: *white salad* and *Lithuanian salad*. Both English options are translated by applying a direct translation strategy. Since the dish names have not been paraphrased nor include additional information, the strategy can also be classified as calque, which signifies that the meaning was literally transferred from the source to the target language. The translation of the CSI as *Lithuanian salad*, which is used in two out of three restaurant menus, puts an emphasis on the cultural significance, yet does not accurately capture the essence of the dish. Likewise, *white salad* refers to the dominant colour yet is too general, as it does not specify the key ingredients. Therefore, it creates an ambiguous implication of what ingredients the dish contains. Since boiled vegetables are not specified, there is a high probability that the customer may expect something different, such as a fresh salad, which is considered white due to white cheese or rich white sauce. Fundamentally, the main issue of the translation variations of *balta mišrainė* is underspecification. To improve the translation accuracy of this item, *balta mišrainė* can

be replaced with a cultural substitute. For instance, regarding Nicholson's (2015) insights into the popularity of the dish in states affected by the Soviet Union, it can be replaced with a widely well-known dish name, an eponym *Olivier salad*. A cultural substitute would give an insight into the origin of the dish, which is shared by many cultures. Moreover, to capture the cultural significance and essence of the dish, specification and retention strategies may be applied, for example, translating the CSI as *balta mišrainė (creamy boiled vegetable salad)*. The translation created by applying the combination of strategies would both provide relevant information about the texture and key ingredient of the dish and preserve the original dish name.

After examining one of the most popular traditional Lithuanian salads *balta mišrainė*, it is equally important to consider traditional soups.

2. LT – *Barščiai*
   EN – *Lithuanian beetroot soup* (BU); *Beetroot soup* (ED); *Borsch* (AG); *Borstch* (K)

3. LT – *Šaltibarščiai*
   EN – *Cold beetroot soup* (BU; ED; K); *Holodnik (Cold red beet soup)* (HBH); *Šaltibarščiai (traditional cold beetroot soup)* (AG)

Two seemingly similar, yet different traditional Lithuanian soups *barščiai* (example 2) and *šaltibarščiai* (example 3) are served in almost all five restaurants, with the exception of one – HBH Palanga does not offer *barščiai.* Notably, there is no definite translation of the two CSIs, as there are several variations on how the soups are translated into the English language. Furthermore, the culture-specific items are translated by applying several different translation strategies, such as generalization (e.g., *Lithuanian beetroot soup; beetroot soup; cold beetroot soup*), cultural substitution (e.g., *borscht, borsch*), and combined strategies, such as retention along with specification (e.g., *šaltibarščiai (traditional cold beetroot soup)*), and cultural substitution along with specification (e.g., *holodnik (cold red beet soup)*).

According to multiple references, the culture-specific item *barščiai* is a soup traditionally made from meat stock, dried boletus, beetroot, and other nutrient-dense vegetables; many recipes include meat as well (Dmuchovska et al, 2019; Laužikienė, 2023; Nicholson, 2015). It is not a dish which is exclusively Lithuanian, as it appears in other countries as well, and is most common in the Eastern part of Europe (Von Bremzen, 2023). *Šaltibarščiai*, on the other hand, has originated in the Baltic states, and is considered to be an authentic Lithuanian soup. However, the meaning of *šaltibarščiai*, has changed throughout the years. According to both Laužikas (2014) and Laužikienė (2023), in the past, *šalti barščiai* used to refer to a different soup, as the key ingredients were plant leaves, such as beet greens, chard, or sorrel. Moreover, Laužikas (2014) states, that traditionally, the base of the soup was made from different fermented ingredients, such as kvass, pickled cucumbers, or water with lemon juice. Nowadays, the CSI *šaltibarščiai* is recognized as a refreshing traditional Lithuanian cold soup made from beetroot, cucumber, boiled eggs, kefir and fresh herbs such as spring onion and dill (Dmuchovska et al, 2019; Nicholson, 2015).

Regarding the translations of the two CSIs provided in Bernelių Užeiga and Etno Dvaras menus, the difference between *barščiai* and *šaltibarščiai* appears to be minor. To clarify, the CSIs are translated as *beetroot soup* and *cold beetroot soup*, which suggests that the restaurants serve the same type of soup, with the option of it being chilled, or heated. Notably, the difference between the original

Lithuanian dish names depends on the adjective *šalti,* which can be literally translated as *cold.* However, locals and culture-knowledgeable individuals recognize the soups as two completely different items. Even though the translators identify the key ingredient and general temperature of the soups, the translations are insufficient as they lack other relevant specifying details which would separate the items. Therefore, the translations provided in Bernelių Užeiga and Etno Dvaras menus can be deemed as inaccurate by means of underspecification.

The difference between *barščiai* and *šaltibarščiai* is clearly distinguished in the translated version of Agotos Gryčia restaurant menu. To illustrate, the culture-specific item *šaltibarščiai* is translated as *šaltibarščiai (traditional cold beetroot soup).* The translator preserves the cultural identity of the dish by retaining the original dish name and specifying details regarding warmth and key ingredients. Moreover, *barščiai* is translated as *borsch*, choosing a widely known Ukrainian substitute, which is written in Latin instead of Cyrillic. Since *barščiai* is of Ukrainian origin (Von Bremzen, 2023), both translations are accurate and preserve the cultural identity of the culture-specific items. Likewise, in Katpedėlė the CSIs are translated as *borstch* and *cold beetroot soup*. Although the cultural substitute is the same as in Agotos Gryčia, the spelling is different, as it ends with the letter "t". According to Von Bremzen (2023), the additional letter is a Yiddish addition to the original dish name. Both variations are widely spread, and therefore recognizable to English speakers. Overall, even though Katpedėlė's menu does not specify that *šaltibarščiai* is a traditional cold soup, there is a clear distinction between the two items.

HBH Palanga employs two translation strategies called cultural substitution and specification by translating *šaltibarščiai* as *holodnik (cold red beet soup).* Fundamentally, cultural substitutes are used in order to appeal to a wider audience, as it may be more recognizable to the English-speaking customers. However, since cultural substitution is accompanied with the specification strategy, the cultural substitute loses its purpose. The combination of the two strategies is unnecessary and results in a loss of cultural identity. Since the essence of the dish is specified in the brackets, the original dish name could have been preserved.

Šiupininė sriuba (Example 4) is the last analysed CSI in terms of traditional soups.

4. LT – *Šiupininė sriuba; Šiupinys*
   EN – *Hotchpotch soup* (K)

According to Laužikas (2014), *šiupininė sriuba*, otherwise known as *šiupinys*, is a stew or soup of thick consistency, made from affordable grains, such as pearl barley groats, beans, and peas, as well as non-lean meat, such as pork leg or ear. Even though the ingredients may vary, Laužikas (2014) emphasizes that traditionally they should possess both affordable and nourishing qualities. The culture-specific item *šiupininė sriuba* is only available in one restaurant, Katpedėlė. The CSI is translated by applying a cultural substitution strategy, and exchanging the original CSI with the English equivalent called *hotchpotch soup*. Considering the cultural background*, hotchpotch soup* is otherwise known as *hairst bree* or *harvest broth*, which Colman et al (2016) describe as "Scottish lamb and lentil soup" (p. 31). It is considered to be a soup of thick consistency, which uses lamb meat as the base for the broth and is made with various grains and recent harvest of vegetables. Notably, both *šiupinys* and *hotchpotch soup* share the grain and meat combination, as well as the thick consistency. In addition, according to Merriam-Webster online dictionary, *hotchpotch* may also refer to a general description of "a thick soup or stew of vegetables, potatoes and usually meat"

(https://www.merriam-webster.com/dictionary/hotchpotch). Altogether, *hotchpotch* is an accurate translation of *šiupinys* since both soups share common qualities. However, another substitute could have been used as well. According to Laužikas and Laužikienė (2020), *šiupinys* has a proper German equivalent called *schuppnis,* which is a loanword of Lithuanian origin.

Thus, in terms of salads and soups, the most prominent translation strategies are cultural substitution and generalization. The main issues include an overall lack of uniformity in restaurant menus, since each CSI which is served in more than one restaurant has several translation variations. Moreover, there are five cases of underspecification, and one case of overspecification which resulted in the loss of cultural identity.

Traditional Lithuanian cuisine is famous for its potato dishes. Even though both locals and visitors may enjoy them, they pose difficulties for translators who need to choose a proper equivalent or accurately describe the CSI in order to properly distinguish the items. The following content analysis examines the translation of eight CSIs (table 2), such as *bulviniai blynai*, *žemaičių blynai, koldūnai*, *didžkukuliai, vėdarai, kraujiniai vėdarai, bulvių plokštainis*, and *švilpikai.*

Table 2. Human translation of culture-specific potato dishes.

No.	Item	Bernelių Užeiga (BU)	Etno Dvaras (ED)	HBH Palanga (HBH)	Agotos Gryčia (AG)	Katpedėlė (K)
1.	*Bulviniai blynai*	*Grated potato pancakes*	*Grated potato pancakes*	*Grated potato pancakes; Potato pancakes*	*Potato pancakes*	*Potato pancakes*
2.	*Žemaičių blynai*	*Boiled potato pancakes with meat stuffing*	*Pancakes with meat*	*Samogitian meat pancakes of boiled potatoes*	*Žemaičių potato pancakes*	*Samogitian pancake*
3.	*Koldūnai; virtinukai*	*Dumplings; Ravioli*	*Dumplings*	-	*Ravioli*	*Dumplings*
4.	*Didžkukuliai*	*Grated potato dumplings*	*Potato dumplings*	*Zeppelins*	*Dumplings*	*Potato dumplings*
5.	*Vėdarai*	*Baked sausage stuffed with grated potatotes; Grated potato stuffed baked sausage*	*Potato sausage*	*Potato sausage*	*Vėdarai (traditional Lithuanian dish, entrails sniffed with potatoes, oven-baked*	*Potato sausage*
6.	*Kraujiniai vėdarai*	-	*Blood pudding*	The CSI is omitted	-	-
7.	*Bulvių plokštainis*	*Grated potato bake*	*Potato pudding*	*Grated potato cake*	-	*Potato pudding*
8.	*Švilpikai*	-	*Baked boiled potato cakes*	-	-	*Fried potato "marmots"*

5. LT – *Bulviniai blynai*
   EN – *Grated potato pancakes* (BU; ED; HBH); *Potato pancakes* (HBH, AG, K)

6. LT – *Žemaičių blynai; Bulviniai blynai su mėsa*
   EN – *Boiled potato pancakes with meat stuffing* (BU); *Pancakes with meat* (ED), *Samogitian meat pancakes of boiled potatoes* (HBH); *Žemaičių potato pancakes* (AG); *Samogitian pancake* (K)

There are two types of potato pancakes, which are the most prominent in Lithuanian cuisine – *bulviniai blynai* (Example 5) and *žemaičių blynai* (example 6). Both versions are served in all 5 traditional cuisine restaurants. The two CSIs are translated by applying strategies such as direct translation (e.g., *potato pancakes; Samogitian pancake*) and specification (e.g., *boiled potato pancakes with meat stuffing; Samogitian meat pancakes of boiled potatoes*). Some translators chose to apply a combination of strategies such as direct translation along with specification (e.g., *grated potato pancakes; žemaičių potato pancakes*) or direct translation along with omission (e.g*., pancakes with meat*).

The culture-specific item *bulviniai blynai* is translated either as *potato pancakes* or as *grated potato pancakes*. Seemingly, the direct translation of the CSI as *potato pancakes* is sufficient, as it identifies the main ingredient of the dish, that is originally specified in the source language. However, it can be considered an underspecification since it is a general dish name which does not clearly distinguish it from other potato pancakes which appear in Lithuanian cuisine. Therefore, the specification strategy, which is employed by Bernelių užeiga, Etno Dvaras and HBH Palanga is more accurate, since the translators incorporate an important additional detail, *grated*, which is not included in the source text. The decision to include an adjective is most likely based on the original recipe, since grated potatoes are used as a base of traditional Lithuanian *bulviniai blynai* (Nicholson, 2015). Moreover, the additional adjective included during the translation process clarifies information regarding the texture of the dish. In addition, it serves as an indicator, separating it from the other versions of *potato pancakes* in Lithuanian cuisine. However, there is an inconsistency with the translation provided in HBH Palanga menu, as the specification degree of the CSI *bulviniai blynai* varies across different parts of the menu.

The culture-specific item *bulviniai blynai su mėsa,* otherwise known as *žemaičių blynai*, originates from Žemaitija (Samogitia) – the lowland region of Lithuania (Dmuchovska et al, 2019). There are two key differences between *žemaičių blynai* and *bulviniai blynai. Žemaičių blynai* contains a meat filling and is made of boiled and mashed potatoes instead of grated potatoes (Dmuchovska et al, 2019). Fundamentally, the original dish name simplifies the differences between crunchy regular potato pancakes and dense potato pancakes with meat filling, in terms of potato preparation. Nevertheless, only two restaurants – Bernelių Užeiga and HBH Palanga, translate it as *boiled potato pancakes with meat stuffing* and *Samogitian meat pancakes of boiled potatoes*, specifying that *žemaičių blynai* includes meat and is made of boiled potatoes. The main difference between the two translations is that HBH Palanga does not omit the specified cultural region, Samogitia, which originally appears in both restaurant menus. However, the translation should be revised, since the placement of the word *meat* at the front of *meat pancakes of boiled potatoes*, ambiguously suggests that meat is the base of the dish, instead of the filling, which may be deemed as a syntactic error. Despite that, both translations correctly represent the dish advertised in the menu.

The following two translation variations of *žemaičių blynai* included in Etno Dvaras and Katpedėlė menus are both inaccurate due to underspecification. To illustrate, the CSI is translated as *Samogitian*

pancake and *pancakes with meat*. Katpedėle does not specify that it is a *potato pancake* nor that it has a meat filling, whereas Etno dvaras mentions meat, yet omits the information regarding the type of *pancake* which is served. It creates a translation inconsistency regarding *potato pancakes* listed in the menu, since the preparation of potatoes (e.g., grated or boiled) is previously specified in *bulviniai blynai.* Moreover, the vague translation of the CSI may puzzle the customer, as the general word *pancake* can refer to multiple different items. For instance, meat wrapped in a thin *crêpe pancake* (in Lithuania it is known as *lietiniai;* Mickutė, 2013, p. 60; Dmuchovska et al, 2019), or a thicker, batter-based pancake with bits of meat on top. To improve the accuracy of the translation, it is mandatory to at least specify that it is a *potato pancake*.

Pancakes are not the only category which contains a wide range of traditional dishes.

7. LT – *Koldūnai; Virtinukai*
   EN – *Dumplings* (BU; ED; K); *Ravioli* (BU; AG);

8. LT – *Didžkukuliai; Cepelinai*
   EN – *Grated potato dumplings* (BU); *Potato dumplings* (ED; K); *Zeppelins* (HBH); *Dumplings* (AG)

Lithuanian cuisine possesses various dishes which can be classified as *virtinukai* (Didžiulienė-Žmona, 2018). From a linguistic perspective, the name *virtinukai* is related to the cooking method, since by literal translation it is a noun formed from the verb "boil in water" and the Lithuanian diminutive suffix "-ukas". Another commonly used name for the CSI is *koldūnai.* However, according to Didžiulienė-Žmona (2018), there is a general difference in size between the two, as *koldūnai* are supposed to be small, single bite pieces. Nicholson (2015) notes that *koldūnai* is not a national dish, since it appears in many cultures, but it is a staple, traditional food in many Lithuanian households. Moreover, Didžiulienė-Žmona (2018) states that the exact time when the dish entered Lithuanian cuisine is unclear, but the CSI was undoubtedly influenced by Karaites, Tatars and Jews residing in Lithuania during the 14^{th}-15^{th} century. Traditional *koldūnai* can be described as a thin, unleavened dough-based dish with various stuffing, such as meat, curd or even berries (Didžiulienė-Žmona, 2018).

The culture-specific item *koldūnai* (example 7), otherwise known as *virtinukai* is served in 4 out of the 5 restaurants. There are two translation variations of the CSI, which are used in the restaurant menus. One of them is created by applying a generalization strategy (e.g., *dumplings*) while the other is translated by cultural substitution (e.g., *ravioli*). Translating *koldūnai* as a *dumpling* is considered to be a generalization, since it is a category which can be divided into various different types of dishes belonging to multiple cultures. For instance, Pang (2020) states that *dumplings* can be steamed, boiled or fried food items, such as *jiaozi* (p. 18), *wontons* (p. 39), and *baozi* (p. 98). Moreover, according to the Merriam Webster dictionary, a *dumpling* can be defined as "a casing of dough enclosing a typically savory filling and cooked usually by boiling, steaming, or pan-frying" (https://www.merriam-webster.com/dictionary/dumpling). The general substitute *dumpling,* which is used in Bernelių Užeiga, Etno Dvaras, and Katpedėlė menus is accurate, since it is compatible with the Lithuanian definition of *koldūnai*, which was discussed previously. Moreover, translating *koldūnai* as *dumplings* creates a widely accessible understanding of the dish, as the name is widely spread between English language speakers. The alternative option included in Bernelių Užeiga and Agotos Gryčia menu, translates *virtinukai* as *ravioli.* It is a poor equivalent since *ravioli* is classified

as a type of pasta in Italian cuisine (Del Conte, 2018). Moreover, it creates an inconsistency in Bernelių Užeiga menu, as the same CSI is translated few different ways.

The culture-specific item *didžkukuliai* (example 8), otherwise known as *cepelinai*, is served in all 5 restaurants. There are four translation variations of the CSI, which are created by applying a generalization strategy (e.g., *dumplings, zeppelins*) or a combined strategy of generalization along with specification (e.g., *grated potato dumplings; potato dumplings*).

The base of *didžkukuliai* is traditionally made from raw peeled potatoes mixed with boiled potatoes (Dmuchovska et al, 2019; Nicholson, 2015). The dough is kneaded and stuffed with a filling of choice, such as meat or curd, and afterwards boiled (Nicholson, 2015). The translation of *cepelinai* as *grated potato dumplings* or *potato dumplings* is accurate, as it identifies the key component of the dish, as well as corresponds to the previously discussed meaning of *dumpling,* representing a mass of potato dough stuffed with a filling. However, translating it as solely *dumpling*, as done in Agotos Gryčia menu is inaccurate, as it does not separate it from the culture-specific item *koldūnas* nor identifies that the base is made of potatoes. Moreover, translating it as *zeppelins* is inaccurate as well, since it specifies only the shape of the dish but does not reveal any information about the key ingredients or other relevant details about the CSI.

Similar ingredients can be found in other traditional potato-based dishes as well.

9. LT – *Vėdarai*
   EN – *Baked sausage stuffed with grated potatoes* (BU); *Grated potato stuffed baked sausage* (BU); *Potato sausage* (ED; HBH; K); *Vėdarai (Traditional Lithuanian dish, entrails sniffed with potatoes, oven-baked)* (AG)

The culture-specific item *vėdarai* (example 9) is offered in all 5 restaurants. There are four translation variations, which are created by applying strategies such as, generalization (e.g., *potato sausage*), specification (e.g., *baked sausage stuffed with grated potatoes; grated potato stuffed baked sausage*), and a combination of specification along with retention (*vėdarai (traditional Lithuanian dish, entrails sniffed with potatoes, oven-baked*).

The oven-baked traditional dish *vėdarai* is prepared by filling animal intestines with a mixture of grated potatoes, milk, and a small amount of diced fried onion and diced salt-cured pork slab (Bajalienė and Bajalis, 2017). Considering the translation variations in Bernelių Užeiga menu, *baked sausage stuffed with grated potatoes* and *grated potato stuffed baked sausage* both identify the key ingredient and its preparation. However, it appears that the translator uses the word *sausage* and *intenstine* as synonyms. Even though *sausages* are made in a similar way as *vėdarai,* by filling intestines with a filling of choice, they refer to an already finished product, therefore it cannot be used interchangeably. Since the word is used incorrectly regarding the context, it implies that *vėdarai* is a meat sausage, additionally stuffed with grated potatoes. Therefore, both variations can be deemed as inaccurate due to a semantic error and an inconsistent translation. Furthermore, the translation provided in Agotos Gryčia menu, *vėdarai (traditional Lithuanian dish, entrails sniffed with potatoes, oven-baked)*, includes similar relevant information about the CSI as well, specifying the main ingredients, cooking method, and preserving the original dish name. However, the translation is inaccurate because it includes a syntactic error - the word *stuffed* is spelled incorrectly. The most accurate translation is *potato sausage*, which is used in three out of the five restaurants. Even though

it is a general description of the dish, it accurately represents the CSI, since the *sausage* is entirely made of potatoes.

Interestingly, *vėdarai* shares a name with another CSI, *kraujiniai vėdarai*, a dish which does not contain any potatoes.

10. LT – *Kraujiniai vėdarai*
    EN – *Blood pudding* (ED); **The CSI is omitted** (HBH)

The culture-specific item *kraujiniai vėdarai* (example 10) is served in Etno Dvaras and HBH Palanga restaurants. However, only one translation variation is present in the example since the translator completely omits the CSI from the English version of the HBH Palanga menu. In Etno Dvaras menu, *kraujiniai vėdarai* is translated by replacing the CSI with a cultural substitute *blood pudding*. In traditional Lithuanian recipes, the key ingredients of *kraujiniai vėdarai* are grains, tallow, and pig blood. The ingredients are combined and stuffed into a previously cleaned pig's intestine and afterwards fried (Imbrasienė, 2009; Laužikienė, 2023). In the British culture, *blood pudding*, otherwise known as *black pudding*, is a common part of the full English breakfast. The key ingredients are identical to *kraujiniai vėdarai*, and the combined mixture is stuffed inside a black pudding casing, which can either be natural beef intenstines or synthetic cellulose skins (Ramsey, 2021). Since the ingredients and preparation of *kraujiniai vėdarai* and *blood pudding* are identical, the substitute can be deemed as accurate.

11. LT – *Bulvių plokštainis; Kugelis.*
    EN – *Grated potato bake* (BU); *Potato pudding* (ED; K); *Grated potato cake* (HBH)

The culture-specific item *bulvių plokštainis* (example 11), otherwise known as *kugelis*, is served in four out of the five restaurants. There are three translation variations, which have been created by applying translation strategies such as specification (e.g., *grated potato bake; grated potato cake*) and cultural substitution (e.g., *potato pudding*).

According to Dmuchovska et al (2019), *kugelis* is a traditional potato dish, made from finely grated potatoes, eggs, and milk. The liquidy mixture is poured into a baking pan and cooked inside of an oven until the outside layer turns dark brown. Nicholson (2015) notes that the CSI has originated in the "Dzūkija" region of Lithuania, and one of the defining characteristics of the dish is the crisp outside layer, and soft and light inside. Nicholson (2015) adds that sometimes it includes meat as well, yet it is not a necessary ingredient. Moreover, according to Laužikienė (2023), the traditional potato dish was influenced by the Jewish dish *kugel* which is commonly prepared from other starchy ingredients such as rice, pasta or turnips.

All three translation variations specify that it is a potato dish, which is one of the most important aspects. The translations provided in Bernelių Užeiga and HBH Palanga menu, *grated potato bake* and *grated potato cake*, are similar as they both identify the key ingredient and method of potato preparation, however, *bake* is a more accurate translation, since it refers to a dish which is cooked in an oven. *Cake,* on the other hand, can refer to a round flat shape of a dish. Since there are a lot of potato dishes in Lithuanian cuisine, that vary both in size and in cooking methods, the word *cake* can be deemed as inaccurate for inaccurately depicting the CSI. The last translation variation, *potato pudding* can be both a cultural substitution and a generalization in regards of texture. For instance,

puddings can refer to both savoury and sweet dishes, but in some countries, such as Jamaica, *potato pudding* stands for a sweet potato pie, made with coconut milk and various spices such as cinnamon or nutmeg. Since restaurant visitor nationalities vary, the translation should be universally understandable to any English-speaking customers. Therefore, *cake* or *pudding* can be replaced by *casserole* or the Jewish cultural substitute *kugel.*

While *kugelis* is a relatively large potato-based dish, *švilpikai* is a small one.

12. LT – *Švilpikai*
    EN – *Baked boiled potato cakes* (ED); *Fried potato "marmots"* (K)

The culture-specific item *švilpikai* (example 12) is the last potato based traditional dish included into the research. It is offered in two restaurants, Etno Dvaras and Katpėdėlė. From a cultural perspective, *švilpikai,* otherwise known as *dzūkiškos šiuškės*, is a dish which originates in Samogitia (Nicholson, 2015). The dish is baked from a dough made from boiled and mashed potatoes, eggs, and flour. It is commonly served with chantarelles (Nicholson, 2015). The translation provided in Etno Dvaras menu is created by applying a specification strategy. The translator provides relevant information about the contents of the dish by translating it as *baked boiled potato cakes*. However, *cake* typically refers to the shape of the dish that is flat and round. *Švilpikai*, on the other hand, are typically cut into relatively small, diamond shaped, rhombus pieces (Nicholson, 2015). Therefore, the translation is partially incorrect since it inaccurately describes the shape of *švilpikai*, which is a uniform part of the CSI. In Katpedėlė menu, *švilpikai* is translated as *fried potato "marmots"*. The translation is created by applying a combined strategy of direct translation along with generalization. However, *fried potato* is too broad, especially in terms of Lithuanian traditional cuisine, as it can refer to multiple different dishes varying in potato preparation and recipes. The translator specifies that the dish is made from potatoes, yet the lack of additional context suggests that the potatoes are the sole ingredient of the dish. Moreover, *marmots* is an inaccurate translation of *švilpikai*. Fundamentally, *švilpikai* is a homonym, otherwise known as a word with multiple meanings. For instance, it can mean both *marmot* (rodent) and *whistler*. In this case, *whistler* is more accurate, as the dish sometimes makes a whistling noise while baking. Therefore, the translation of *švilpikai* as *fried potato "marmots"* is inaccurate, as it does not provide enough information regarding the dish. Moreover, the translation of *švilpikai* as *marmots* is confusing, as it is not related to the dish in any way and may create an expectation that the fried potatoes are shaped as rodents, similar to the animal shaped dishes that appear on the children's menu.

Thus, in terms of potato dishes, the most prominent translation strategies are generalization and specification. The main issues include an overall lack of uniformity in CSI substitutes, and a lack of consistency in restaurant menus, since occasionally the same CSI is translated several different ways in the same menu. Moreover, there are eight cases of underspecification, two cases of syntactic and semantic errors, one omission, and seven cases of inaccurate cultural substitution or word choice.

The following content analysis examines the translation of six meat-based CSIs (table 3), such as *karka, spirgučiai, kotletas, karbonadas, sūdyti lašiniai* and *balandėliai.*

Table 3. Human translation of culture-specific meat dishes.

No.	Item	Bernelių Užeiga (BU)	Etno Dvaras (ED)	HBH Palanga (HBH)	Agotos Gryčia (AG)	Katpedėlė (K)
1.	*Karka*	*Pork leg; Pork shank*	-	*Pork shank*	*Karka (pork's shank)*	*Pork shank*
2.	*Spirgučiai*	*Fried onions and bacon; Fried bacon sauce; Fried bacon*	*Crackling*	*Crackling*	-	*Crackling; Greaves*
3.	*Maltinukas; Kotletas*	*Cutlet*	*Rissole*	*Meatballs*	*Balls*	*Meatballs*
4.	*Karbonadas*	*Pork loin schnitzel*	-	*Steak "Lithuanian" (pan fried pork loin)*	*Roast (pork fillet)*	*Lithuanian pork chop (roasted breaded pork loin)*
5.	*Sūdyti lašiniai*	-	*Salted peck*	-	-	
6.	*Balandėliai*	*Minced meat stuffed and stewed cabbage leaves*	-	-	-	*Stuffed cabbage rolls*

13. LT – *Karka*
    EN – *Pork leg* (BU); *Pork shank* (BU; HBH; K); *Pork hock* (ED); *Karka (pork's shank)* (AG)

The culture-specific item *karka* (example 13) is offered in all five restaurants. Currently, there are four translation variations, created by applying strategies such as, generalization (e.g., *pork leg*), cultural substitution (e.g., *pork shank; pork hock*), and a combined strategy of cultural substitution along with retention (e.g., *karka (pork's shank)*). In this specific case, the preparation process of the dish and cultural background related to it is irrelevant to the translation process. The relevance is, instead, based on the specific animal body part which serves as a base for the traditional dish. According to the Lithuanian etymological dictionary, *karka* can be defined as "leg part – from knee to thickness", referring to the upper part of the leg (https://etimologija.baltnexus.lt/?w=karka). The translation of *karka* as *pork leg* identifies the animal and appendage, however, does not specify the portion of it. Therefore, the customer may expect to be served an entire leg of a pig as part of the dish, which is inaccurate to the originally advertised item. Furthermore, *pork shank* and *pork hock* are cultural substitutes, which may appear familiar to English speaking customers, however they do not refer to the same thing. In the digital book "Pork Production and Preparation" (2015) written by a limited liability company "Readbooks", the authors suggest that *pork hock* refers to a *shoulder hock*, immediately above the knee joint. *Pork shank*, on the other hand, refers to the lower part of the leg, a part of the joint which attaches a pig's foot to its leg (Readbooks Ltd, 2015). Regarding these definitions, a conclusion can be drawn that *pork hock* is the most accurate translation variation, as it accurately describes the portion of the leg which is identified in the CSI *karka*.

The culture-specific item *spirgučiai* (example 14) is not a separate meal but a common addition to various traditional dishes made from potatoes or dough.

14. LT – *Spirgučiai*

EN – *Fried onions and bacon* (BU); *Fried bacon sauce* (BU); *Fried bacon* (BU); *Crackling* (ED; HBH; K); *Greaves* (K)

Spirgučiai is included in four out of five restaurant menus. As is shown in example 14, there are five translation variations of the CSI *spirgučiai,* and three of them are present solely in Bernelių Užeiga menu. The CSI is translated by applying either the specification (e.g., *fried onions and bacon, fried bacon sauce; fried bacon*) or the cultural substitution (e.g., *crackling; greaves*) strategy. According to Dmuchovska and Kandrotas (2017), *spirgučiai* is made of animal tallow that is diced into cubes and fried together with diced onion. Another popular version is made by frying diced slab bacon (Bajalis and Bajalienė, 2017). From a linguistic perspective, *spirgučiai* is a diminutive form of a noun formed from the verb "to sizzle", referring to the audible sound present during the cooking process. Considering the translation of *spirgučiai* as *fried onions and bacon, fried bacon sauce,* and *fried bacon*, all three translation variations include the key ingredient of the CSI. However, even though the three translation variations accurately represent *spirgučiai,* there is an underlying issue of inconsistency, since all three translations of the CSI appear in the same menu. Moreover, even though *crackling* is the most common substitute for *spirgučiai* and appears in Etno Dvaras, HBH Palanga, and Katpedėlė menus, it is inaccurate. According to Venezia and Peterson (2016), *crackling* refers to *fried pork skin* instead of *fried bacon* or *tallow*. Therefore, the translation is misleading as it refers to the incorrect item. Since the name of both *crackling* and *spirgučiai* can represent a short and sharp series of sounds, there is a possibility that the translators did not research the context of *crackling* and trusted the generated result provided by a MT software. Furthermore, there is another substitute for *spirgučiai* that is present in Katpedėlė menu. Similarly to Bernelių Užeiga, Katpedėlė is inconsistent with the translation of the CSI throughout the menu. The cultural substitute is *greaves*. Collins online dictionary defines *greaves* as "the sediment of skin, etc. formed when animal fat is melted down for tallow" (https://www.collinsdictionary.com/dictionary/english/greaves). This definition aligns with the traditional recipe described by Dmuchovska and Kandrotas (2017), therefore it can be deemed as an accurate substitute for *spirgučiai*.

While *spirgučiai* is only a common additional component, *kotletas* can be considered a whole meat dish.

15. LT – *Kotletas, maltinis*
    EN – *Cutlet* (BU); *Rissole* (ED); *Meatballs* (HBH; K); *Balls* (AG)

The culture-specific item *kotletas* (example 15), otherwise known as *maltinis,* is available in all five restaurants. The CSI is translated by applying strategies, such as cultural substitution (e.g., *cutlet; rissole*) or generalization (e.g., *meatballs; balls*). Notably, there is no definite translation of the item, as four different English variations appear throughout the menus.

According to Didžiulienė-Žmona (2018), the CSI *kotletas* is of French origin, originating from the word *cotelette* (rib). Originally, the dish was prepared from pork, lamb or veal sirloin. However, in traditional Lithuanian cuisine, the CSI *kotletas* refers to a dish prepared specifically from ground meat (Nicholson, 2015). Even though the recipes vary, commonly, ground meat is combined with an egg and diced onions, formed into the shape of a small cake and pan fried. Didžiulienė-Žmona (2018) notes, that during the rule of the Soviet Union, the dish name was changed into "iš faršo pagamintas kotletas" (*cutlet made from ground meat*; p. 73). Eventually, Lithuanian linguists agreed upon another name – *maltinis* (a noun created from the verb "grind") (Didžiulienė-Žmona, 2018, p. 73).

Considering the translations, *meatball*, refers to a small and round ball made of ground meat, which is typically used in soups, pastas, or eaten on its own, such as the traditional *Swedish meatballs*. Since the shape and size of *kotletas* is larger and flatter, the translation can be deemed as inaccurate for underspecification, as it only reveals the shape, that is incorrect. However, *meatball* provides more information about the CSI than *ball* does. The translation of *kotletas* as *balls* is inaccurate and insufficient, as it does not specify that it is made of meat, nor does it accurately represent the shape of the dish. Moreover, according to Merriam-Webster dictionary, *rissole* can be defined as "minced meat or fish covered with pastry and fried" (https://www.merriam-webster.com/dictionary/rissole). Since the CSI *kotletas* does not originally include any type of dough or pastry, the cultural substitute is inaccurate. The last translation variation, *cutlet* is inaccurate as well since it does not specify that the *cutlet* is made from ground meat. As discussed above, *cutlet* originally refers to *a slice of meat*, therefore it is important to specify that the CSI is prepared from *ground meat.*

Moreover, there are meat dishes which do not require grinding meat.

16. LT – *Karbonadas; Lietuviškas karbonadas*
    EN – *Pork loin schnitzel* (BU); *Steak "Lithuanian" (pan fried pork loin)* (HBH); *Roast (pork fillet)* (AG); *Lithuanian pork chop (roasted breaded pork loin)* (K)

The culture-specific item *karbonadas* (example 16), otherwise known as *lietuviškas karbonadas* is served in four out of the five restaurants. There are four translation variations, which are created by applying strategies such as generalization (e.g., *roast (pork fillet)*), direct translation along with specification (e.g., *steak "Lithuanian" (pan fried pork loin)*) or specification along with cultural substitution (e.g., *pork loin schnitzel; Lithuanian pork chop (roasted breaded pork loin)*).

Currently, there are several variations of the original CSI which are used in Lithuanian language. For instance, besides *karbonadas*, the dish is occasionally called *kiaulienos nugarinės kepsnys*, which by literal translation means *pork tenderloin steak.* The CSI *karbonadas* is prepared by tenderizing the meat and then coating it in breadcrumbs prior to frying (Nicholson, 2015). Considering the translations, three translation variations identify that it is a *pork loin.* Bernelių Užeiga also includes a cultural substitute *schnitzel,* which is an accurate substitute of the CSI, since it refers to an identical dish. In addition, even though the cultural substitute *schnitzel* is of German origin, it is an internationally spread dish name which is recognizable to many English-speaking customers, therefore, the translation is accurate. Notably, only Katpedėlė and Bernelių Užeiga specify that the meat is breaded prior to frying, which makes the other translations inaccurate due to underspecification. However, although Katpedėlė specifies that it is breaded, the cultural substitute *pork chop* is inaccurate, since *pork chop* contains a meat bone.

17. LT – *Sūdyti lašiniai*
    EN – *Salted peck* (ED)

The culture-specific item *sūdyti lašiniai* (example 17) is only available in Etno Dvaras. However, it is the only case out of 30, which contains a complete mistranslation. To illustrate*, sūdyti lašiniai* is translated as *salted peck*, and it is unclear whether the translator applied a direct translation or a generalization strategy while translating the CSI. Presumably, the translator may have made a typographical error and translated the CSI as *salted peck* instead of *salted pork*. Alternatively, it may have been an intentional translation due to misinterpretation, as one of the meanings behind *pecks* is

pectoral muscles. However, the translation is inaccurate either way, as it does not properly match the description of the CSI. From a cultural perspective, *sūdyti lašiniai* refers to a *salt-cured pork slab*, which contain both muscle and fat (otherwise known as subcutaneous fat). According to Imbrasienė (2009), during the preparation process, the meat is not only smothered in a mixture made from salt combined with other spices but is also left to dry in a cool temperature environment for approximately two weeks. Altogether, the translation of *sūdyti lašiniai* is inaccurate due to a syntactic error and an inaccurately chosen substitute.

Notably, some meat dishes are commonly paired with vegetables.

18. LT – *Balandėliai*
    EN – *Minced meat stuffed and stewed cabbage leaves* (BU); *Stuffed cabbage rolls* (K)

The culture-specific item *balandėliai* (example 18) is served in two restaurants, Bernelių Užeiga and Katpedėlė. There are two translation variation of the CSI, *minced meat stuffed and stewed cabbage leaves* and *stuffed cabbage rolls*. Both translations are created by applying a specification strategy.

According to Laužikas (2014), the Lithuanian dish known as *balandėliai* is influenced by one of the world's oldest cooking techniques – grilling fish or meat that is wrapped in various plant leaves. Laužikas (2014) notes that this cooking technique is used all over the globe, therefore, similar dishes appear in various cultures. To illustrate, Middle Eastern countries have a dish called *dolma* (meat wrapped in grape leaves) (Kaushalya, 2024), and in China there is a dish called *zongzi* (meat wrapped in bamboo leaves) (Liu, 2021). What sets the Lithuanian version apart from others, is the way of cooking. The dish is made with steamed cabbage leaves by wrapping meat and rice in them. The combination is then stewed in either water or a special sauce (often made from sour cream, butter and/or tomato sauce) (Laužikas, 2014; Dmuchovska et al, 2019). The closest alternative is the Polish dish called *golumpki* (Johnson, 2024). However, the translations provided by Bernelių Užeiga and Katpedėlė do not use a cultural substitute, instead, the translators describe the dishes. For instance, the translation variation *minced meat stuffed and stewed cabbage leaves* is informative, as it specifies the filling as well as the cooking method. However, the way the sentence is arranged creates ambiguity. The adjective *stuffed* appears to be misplaced as it becomes unclear whether it is modifying the word *meat* or *cabbage leaves*. Moreover, the adjective does not logically suit the sentence, as *cabbage leaves* are too thin to be stuffed with anything, yet it is possible to wrap them around something. Therefore, even though the translator specifies details in relation to the dish, the translation contains both semantic and syntactic errors. Furthermore, the other translation variation, *stuffed cabbage rolls* accurately describe the dish yet lack an essential specifying detail about the meat filling. This can be considered an underspecification, since the filling of traditional *balandėliai* does not vary, as it does with other dishes, such as *cepelinai* or *koldūnai*.

Thus, in terms of meat-based dishes, the most prominent translation strategies are cultural substitution and specification. The main issues include an overall lack of uniformity and lack of consistency in restaurant menus, since occasionally the same CSI is translated several different ways in the same menu. Moreover, there are ten cases of an inaccurate cultural substitute or word choice, seven cases of underspecification, two cases of syntactic and semantic errors, and one case of incoherent translation (e.g., *salted peck*).

The following content analysis examines the translation of four dairy dish CSIs (table 4), such as *varškė, varškėčiai, kastinys* and *lietiniai.*

Table 4. Human translation of culture-specific dairy dishes.

No.	Item	Bernelių Užeiga (BU)	Etno Dvaras (ED)	HBH Palanga (HBH)	Agotos Gryčia (AG)	Katpedėlė (K)
1.	*Varškė*	*Fresh cheese; Soft cheese*	*Curd*	*Curd*	*Curd*	*Curd; Cottage cheese*
2.	*Varškėčiai*	-	*Curd dumplings*	*Curd dumplings*	*Varškėčiai (toasted curd pancakes)*	*Fried cottage cheese pancakes*
3.	*Kastinys*	-	*Kastinys (sour cream butter)*	*Sour cream butter; Sour cream butter "Kastinys"*	-	-
4.	*Lietiniai*	-	*Crepes*	-	-	*Crepes*

19. LT – *Varškė*
    EN – *Fresh cheese* (BU); *Soft cheese* (BU)**;** *Curd* (ED; HBH; AG; K); *Cottage cheese* (K)

20. LT – *Varškėčiai; Kepti varškėčiai*
    EN – *Curd dumplings* (ED; HBH); *Varškėčiai (Toasted curd pancakes)* (AG); *Fried cottage cheese pancakes* (K)

The culture-specific item *varškė* (example 19) is a staple product in many Lithuanian kitchen's (Nicholson, 2015). The product is used both as a filling in various dishes and as a key ingredient of others, such as the culture-specific item *varškėčiai* (example 20). The CSI *varškė* is included in various dishes of all five restaurants and there are four translation variations, which are created by applying two different strategies, generalization (e.g., *fresh cheese; soft cheese; curd*) and cultural substitution (e.g., *cottage cheese*).

According to Dmuchovska et al (2019), the culture-specific item *varškė* is made from a mixture of unpasteurised milk, soured milk, and lemon juice. A pot which contains the liquid mixture is placed on a stove, and heated, until the liquid begins to solidify and curdle. The mixture is then strained through a cheesecloth to separate the solid and liquid components. The curdled product which remains in the cheesecloth is called *varškė* (Dmuchovska et al, 2019).

The English translation of the CSI *varškė* is used inconsistently in both Bernelių Užeiga and Katpedėlė restaurants, as the translation varies across different parts of the menu. For instance, in Bernelių Užeiga, *varškė* is translated as *fresh cheese* and *soft cheese*. Fundamentally, both translation variations are similar, since they refer to a general category of cheeses, which have a higher moisture content, such as *cottage cheese* or *camembert* (Thom, 2015). However, the general translation of the item is inaccurate, as it does not provide enough information about the CSI, nor does it specify that the cheese is made by souring. Moreover, the previously mentioned *cottage cheese* is one of the translation variations included in Katpedèle menu. However, as discussed in the previous chapter, *varškė* is made by separating the solid and liquid components, which form during the curdling process. Even though, *cottage cheese*, is curdled by souring as well, it contains "60 to 75 per cent of

water" (Thom, 2015, p. 17), which is one of the main differences between the two items, The translation of the CSI *varškė* as *curd* is the most common option, as it appears in four out of five restaurant menus. Even though *curd* is a generalization, it refers to a category of cheeses, which have "a very soft texture and the flavor of sour milk, principally lactic acid" (Thom, 2015, p. 115). Therefore, the translation of the CSI *varškė* as *curd* is the most accurate option, as it does not have an equivalent in the target language.

The CSI *varškėčiai* is available in four out of the five restaurants, and is translated three different ways, by applying generalization (e.g., *curd dumplings*), specification along with cultural substitution (e.g., *fried cottage cheese pancakes*) and retention along with specification (e.g., *varškėčiai (toasted curd pancakes)*) strategies. However, it is important to clarify that *varškėčiai* can be prepared by either boiling or pan frying the batter (Nicholson, 2015). The dish is traditionally prepared by pouring *varškė* through a fine mesh sieve, and combining it with eggs and flour (Nicholson, 2015). Both variations of *varškėčiai* follow the same recipe but vary in size and cooking method. For instance, pan-fried *varškėčiai* is larger, and usually round, resembling *pancakes*, while the batter for boiled *varškėčiai* is rolled into a thin cylinder and cut into smaller pieces. The translation *curd dumpling* is accurate as it represents the previously discussed category of dishes made of a small mass of dough. Since *curd dumpling* refers to the boiled version, it accurately depicts the dish and its key ingredient. The other two translation variations refer to pan-fried *varškėčiai.* The translations, variations *varškėčiai (toasted curd pancakes)* and *fried cottage cheese pancakes* are similar, and both identify that the dish is fried or toasted and shaped like pancakes. However, as previously discussed, *varškė* does not have an equivalent in the target language, therefore the general *curd* is more accurate. *Cottage cheese*, on the other hand, refer to a specific type of cheese, and therefore an inaccurate substitute.

21. LT – *Kastinys*
    EN – *Kastinys (sour cream butter)* (ED); *Sour cream butter* (HBH); *Sour cream butter "Kastinys"* (HBH)

The culture-specific item *kastinys* (example 21) is available in two restaurants, Etno Dvaras and HBH Palanga. Evidently, there is an inconsistency with the translation presented in Etno Dvaras menu, as three English variations are present in the example, of which two belong to the latter. Nevertheless, all three translations of *kastinys* are relatively identical. The CSI is translated by either applying a specification strategy (e.g., *sour cream butter*), or a combination of specification along with retention (e.g., *kastinys (sour cream butter); sour cream butter "Kastinys"*). From a cultural perspective, Bajalienė and Bajalis (2017) and Dmuchovska et al (2019) describe the CSI *kastinys* as a traditional Samogitian dish prepared from butter, sour cream, garlic cloves and cumin. Although recipes differ in terms of spices, all variations of *kastinys* share a common savoury flavour. Notably, both restaurants specify the key ingredients of *kastinys* in their English menus. Moreover, the retained original name in *kastinys (sour cream butter)* and *sour cream butter "Kastinys"* contributes to the preservation of the cultural identity of the dish, as well as signify that there is no direct equivalent for the item in the target language. However, such objective could have been attained by the specification strategy alone. As discussed previously, the key cultural aspects of *kastinys* are the savoury flavour, and Samogitian heritage. Therefore, the addition of such details would emphasize the cultural importance of the CSI as well as indicate the savoury flavour which is created by certain spices. Nevertheless, the translation of *kastinys* can be deemed as accurate as it specifies the key components

of the dish. However, there is an underlying issue of inconsistent translation of the same items throughout the respective menus.

Lietiniai is an exception, which is included in the dairy category yet is not always served with a *curd* filling.

22. LT – *Lietiniai*
    EN – *Crepes* (ED; K)

The culture-specific item *lietiniai* (example 22) is served in two restaurants, Etno Dvaras and Katpedėlė. Both restaurants translate the CSI by replacing it with a cultural substitute *crepes*. According to various traditional recipes, *lietiniai* are made by pan-frying a thin layer of batter consisting of eggs, milk, flour and oil (Dmuchovska et al, 2019; Nicholson, 2015). Nicholson (2015) notes that *lietiniai* can be either sweet or savoury and are commonly filled with either meat or curd. The cultural substitute accurately represents the dish, as a *crepe* is made of the same ingredients and cooking method, by applying a thin layer of batter and spreading it on the bottom of the pan (Manabat, 2020). Moreover, *lietiniai* is the only CSI which is served in several restaurants yet has only one translation variation.

Thus, in terms of dairy-based dishes, the most prominent translation strategies are generalization and specification. The main issues include the overall lack of uniformity in CSI substitutes, and a lack of consistency in restaurant menus, since occasionally the same CSI is translated several different ways in the same menu. Moreover, there are two cases of underspecification and two cases of inaccurately chosen cultural substitutes.

The following content analysis examines the translation of four traditional desserts and snacks (table 5), such as *tinginys, šakotis, kepta duona su sūriu* and *žirniai su spirgučiais.*

Table 5. Human translation of culture-specific desserts and snacks.

No.	Item	Bernelių Užeiga (BU)	Etno Dvaras (ED)	HBH Palanga (HBH)	Agotos Gryčia (AG)	Katpedėlė (K)
1.	*Tinginys*	-	*Traditional idler's dainty*	-	-	-
2.	*Šakotis*	-	-	*Bankuchen*	-	-
3.	*Kepta duona su sūriu*	*Deep fried brown bread stick with cheese*	*Fried breadsticks with cheese dip*	*Crispy fried battonetts with garlic; Fried bread with cheese*	*Hot fried bread*	*Fried bread with cheese and mayonnaise*
4.	*Žirniai su spirgučiais*	*Peas with fried bacon*	*Peas with cracklings*	*Boiled yellow peas with cracklings*	-	*Peas with cracklings*

23. LT – *Tinginys*
    EN – *Traditional idler's dainty* (ED)

The culture-specific item *tinginys* (example 23) is a popular Lithuanian dessert, which is served in only one of the restaurants. The translation is created by applying a generalization translation strategy and translating the CSI as *traditional idler's dainty*. Fundamentally, *tinginys* does not have an accurate equivalent in the English language, even though similar desserts appear in other countries as well. To illustrate, in Southern Europe a similar dessert is called *chocolate salami* (*salame de cioccolato*; Verginella, 2013, p. 59). The dessert is made from cocoa powder, biscuit crumbs, butter, and alcohol such as wine or rum. Although the ingredients in the traditional Lithuanian recipe of *tinginys* are similar, Lithuanian recipes include condensed milk, and omit the alcohol (Mickutė, 2013). Even though there is no proper equivalent, the strategy chosen by the translator is inaccurate as well due to underspecification. Notably, it creatively captures the essence of the original name of the dessert, which can be literally translated as *sloth* or *slacker*, yet the contents of the dessert remain unknown. Moreover, the creative translation causes inconsistencies with the style of previous translations of CSIs. To improve the accuracy of the translation, another strategy should be applied, such as specification. Fundamentally, there are two popular variations of *tinginys* – one is made with *cocoa powder* (Mickutė, 2013), and the other is made with *curd* (Nicholson, 2015). However, since it is unspecified, it can be assumed that Etno Dvaras offers the traditional chocolate option. Therefore, the translation of *tinginys* can be improved by an additional adjective *chocolate*. For instance, translating the CSI as *traditional chocolate idler's dainty*, and therefore clarifying what type of dessert is served.

Besides *tinginys*, there is another widely known traditional Lithuanian dessert *šakotis.*

24. LT – *Šakotis*
    EN – *Bankuchen* (HBH)

Even though the culture-specific item *šakotis* (example 24) is a popular delicacy during various occasions, it is rarely served in restaurants. In this case, only HBH Palanga offers its customers to taste *šakotis*. The item is translated by applying a cultural substitution strategy and exchanging it with a substitute *bankuchen*. In terms of the preparation, Dmuchovska et al (2019) note that the batter of *šakotis* is made from a mixture of butter, sugar, flour, sour cream and at least 40 eggs. A key component regarding baking is a special rotating spindle, which is covered with buttered parchment paper. The spindle is heated, and batter is gradually poured on it. The rotation of the spindle plays a key role in creating the distinct appearance of *šakotis,* which resembles a fir tree. Similar recipes can be found in other literature sources, such as written by Imbrasienė (2009) or Dmuchovska and Kandrotas (2017). Notably, *šakotis,* like many other traditional dishes, is not exclusive to Lithuanian culture. Therefore, various loan words can be found in literature regarding traditional Lithuanian cuisine, for example "*baumkuchenas*" (Dmuchovska & Kandrotas, 2017, p. 7) or "*bankukinas*" (Imbrasienė, 2009, p. 31). The previously mentioned, *baumkuchenas*, for example, is of German origin, as a similar dessert is present in German culture as well. However, a key difference between the items is the shape of the delicacy. Regarding the CSI translation, *bankuchen* does not specify the appearance of the dessert. However, the cultural substitute chosen by the translator can be consider accurate in terms of the recipe. Moreover, even though the spelling varies, it is a CSI which is recognizable to many English-speaking customers.

Even though traditional Lithuanian desserts are popular among locals and visitors, savoury snacks are no less important.

25. LT – *Kepta duona su sūriu*
    EN – *Deep fried brown bread stick with cheese* (BU); *Fried breadsticks with cheese dip* (ED); *Crispy fried battonetts with garlic* (HBH); *Fried bread with cheese* (HBH); *Hot fried bread* (AG); *Fried bread with cheese and mayonnaise* (K)

The culture-specific item *kepta duona su sūriu* (example 25) is a popular Lithuanian snack which is served in all 5 restaurants. There are six translation variations of the CSI, which are created by applying strategies such as generalization (e.g., *fried breadsticks with cheese dip; crispy fried batonnets with garlic*), specification (e.g., *deep fried brown bread stick with cheese*) and direct translation (e.g., *fried bread with cheese; hot fried bread; fried bread with cheese and mayonnaise*).

According to various recipes, *kepta duona su sūriu* is made from black bread, otherwise known as *black rye bread* (Bajalis and Bajalienė, 2017; Dmuchovska et al, 2019; Nicholson, 2015). The bread is sliced into long strips, fried, rubbed with a raw garlic clove and served with a cheese sauce (commonly made by combining cheese and mayonnaise) (Bajalis and Bajalienė, 2017; Dmuchovska, et al, 2019). Considering the translations of the CSI, *deep fried brown bread stick with cheese* is the most accurate variation, since it specifies the type of bread and the shape of the dish. However, it is the only translation variation which specifies the bread type. Therefore, other translation variations are inaccurate due to underspecification, since they imply that the dish is made from white bread. Moreover*, fried breadsticks with cheese dip* and *crispy fried battonetts with garlic* both specify that the shape of the bread. Although, *battonetts* refers to small sticks, the translator does not specify that the sticks are made of bread, thus creating an inaccurate translation and omitting relevant information. Furthermore, *breadsticks* refer to an item made from wheat flour. In some cases, people may associate *breadsticks* with Italian *grissini* which Livraghi (2015) describes as "long slim crisp breadsticks" (p. 27). Thus, only Bernelių Užeiga provides an accurate translation of the CSI *kepta duona su sūriu.*

26. LT – *Žirniai su spirgučiais*
    EN – *Peas with fried bacon* (BU); *Peas with cracklings* (ED; K); *Boiled yellow peas with cracklings* (HBH);

The culture-specific item *žirniai su spirgučiais* (example 26) is considered to be a traditional appetizer or side dish in Lithuanian cuisine. The item is available in four out of the five analysed restaurant menus. Even though it is a seemingly straightforward dish, there are three translation variations created by following translation strategies, such as direct translation (e.g*., peas with fried bacon; peas with crackling*) and specification (e.g., *boiled yellow peas with crackling*). Moreover, the translation of *spirgučiai* as *cracklings* is cultural substitution. As Bernelių Užeiga, Etno Dvaras, and Katpedėlė do not specify the type of peas which are used in the dish, it would imply that *žirniai su spirgučiais* contains *green peas*, as it is the most common type. However, Nicholson (2015) clarifies that the traditional *žirniai su spirgučiais* recipe includes *yellow peas* in particular. Therefore, the translation provided in the HBH Palanga menu is the most accurate as it not only specifies the type of peas which are used in the dish but also specify the preparation technique. However, as discussed in example 14, *spirgučiai* cannot be translated as *cracklings*, since *cracklings* refer to *fried pork skin* instead of *bacon* or *tallow*. As a result, all three translation variations can be deemed as inaccurate due to underspecification and inaccurate substitution.

Thus, in terms of snacks and desserts, the most prominent translation strategies are direct translation and specification. The main issues include an overall lack of uniformity in CSI substitutes, and a lack

of consistency in restaurant menus, since occasionally the same CSI is translated several different ways in the same menu. Moreover, there are eight cases of underspecification, and three cases of an inaccurate cultural substitution.

The following content analysis examines the translation of four traditional Lithuanian beverages (table 6), such as *gira, rūgpienis, kefyras* and *kisielius*.

Table 6. Human translation of culture-specific beverages.

No.	Item	HBH Palanga (HBH)	Agotos Gryčia (AG)	Katpedėlė (K)
1.	*Gira*	*Kvass*	*Kvass*	*Bread kvass*
2.	*Rūgpienis*	-	*Clabber*	-
3.	*Kefyras*	*Buttermilk*	-	-
4.	*Kisielius*	*Kisiel*	-	-

27. LT – *Gira*
    EN – *Kvass* (HBH; AG); *Bread kvass* (K)

The culture-specific item *gira* (example 27) is a traditional Lithuanian fermented drink. An essential ingredient in the preparation of *gira* is the dark rye bread (Dmuchovska et al, 2019; Laužikienė, 2023; Nicholson, 2015) which is combined with sugar, yeast and raisins. The CSI is served in three restaurants and is translated by applying strategies such as cultural substitution (e.g., *kvass*) and cultural substitution along with specification (e.g., *bread kvass*). Both translation variations are accurate since they refer to a widely known beverage that is mostly popular in Baltic and Slavic countries.

28. LT – *Rūgpienis*
    EN – *Clabber* (AG)

29. LT – *Kefyras*
    EN – *Buttermilk* (HBH)

Rūgpienis (example 28) and *kefyras* (example 29) are similar dairy-based beverages. According to Gudavičiūtė and Mielkuvienė (2017), *kefyras* is made by natural pure lactic acid bacteria which is introduced to pausterised whole milk, whereas *rūgpienis* is milk which has fermented naturally. In addition, *rūgpienis* has a thicker consistency than *kefyras* and contains some solidified parts. Both items are translated by applying a cultural substitution strategy. HBH Palanga translates *kefyras* as *buttermilk*, however, this is inaccurate since, as the name suggests, *buttermilk* refers to the liquid which remains after churning butter. Moreover, Agotos Gryčia translates *rūgpienis* as *clabber.* Since *clabber* refers to milk which has naturally soured, the translation is accurate.

30. LT – *Kisielius*
    EN – *Kisiel* (HBH)

The culture-specific item *kisielius* (example 30) is only served in HBH Palanga restaurant where it is translated by exchanging it with a cultural substitute *kisiel.* According to Dmuchovska et al (2019) the traditional drink is made from berries, such as cranberries, by boiling them in sweetened water

and then using a strainer to separate the solid pieces from the liquid. The key ingredient of *kisielius* is starch since it thickens the liquid consistency. Dmuchovska et al (2019) and Nicholson (2015) specify that *kisielius* is usually served during Christmas eve. The translation is accurate is it refers to the same item.

Thus, in terms of traditional beverages, the most common translation strategy is cultural substitution. There is one translation error created by an inaccurately chosen cultural substitute (e.g., *buttermilk*).

Overall, throughout all 30 culture-specific item translations there were 101 errors: 43 underspecifications, 11 inconsistent translations of the same items, two accidental omissions, four syntax errors, five semantic errors, two incorrectly chosen words and 34 inaccurately chosen cultural substitutes. Evidently, *spirgučiai* and *varškė* created a substantial number of difficulties for translators, however, the most problematic CSI category was related to meat. Moreover, each CSI had multiple different translation variations which suggests that translators had not settled upon accurate English substitutes for Lithuanian traditional food items.

2.3. Analysis of artificial intelligence translated culture-specific items

The generated results are provided in table format and distributed into six CSI categories. Since all AI menu translator tools have a different interface, the applications are further divided into subsubsections 2.3.1, 2.3.2. and 2.3.3. Originally generated results can be found in appendices 8-10.

2.3.1. Translation generated by MenuGuide

MenuGuide (2025) is a mobile AI menu translation tool which generates translations based on uploaded images. Therefore, the translation results analysed in this subsubsection were generated based on the synthetic menu (appendix 7) which was uploaded to the 1.0.20. version of the app. In the application, results are provided in a list format and consist of the translated dish name and a tiny image of the dish. Moreover, the items from the list can be enlarged in order to access the textual description of the dish. However, occasionally MenuGuide's generated results are inconsistent and differ while being previewed or enlarged. Tables 7-12 include the information on MenuGuide's generated CSI translations and excerpts of generated descriptions. The table columns which include generated content are labelled with the information "MenuGuide (2025)". Notably, only inaccurate translations of CSIs are discussed in detail, since all relevant details regarding all 30 CSIs are provided in sub-section 2.2.

Table 7. "MenuGuide" generated translation of culture-specific salad and soups.

No.	Item	Translation preview by MenuGuide (2025)	Enlarged translation by MenuGuide (2025)	Description generated by MenuGuide (2025)	Illustration Accuracy
1.	*Balta mišrainė*	*White salad*	*White Salad*	"A light and refreshing salad typically made with chopped boiled potatoes, carrots, peas, and often dressed in mayonnaise […] popular dish in various Eastern European cuisines […]"	Inaccurate. It shows a *salad made of pear, cheese and cauliflower*.

2.	*Barščiai*	*Borscht*	*Borscht*	"[…] traditional Eastern European soup made primarily from beets, often accompanied by cabbage, potatoes, and carrots"	Accurate.
3.	*Šaltibarščiai*	*Cold borscht*	*Cold Beet Soup*	"Šaltibarščiai is a traditional Lithuanian cold soup made with beets, cucumber, dill, and often served with sour cream or boiled potatoes"	Inaccurate. It shows *borscht.*
4.	*Šiupininė sriuba*	*Thick soup*	*Poppy Seed Soup*	"Šiupininė sriuba is a traditional Lithuanian soup made with poppy seeds, often combined with vegetables and herbs"	Inaccurate. It shows *tomato soup.*

MenuGuide's translations of salads and soups (table 7) are translated by applying strategies such as direct translation (e.g., *white salad*), generalization (e.g*., thick soup; cold beet soup*; *poppy seed soup*) and cultural substitution (e.g., *borscht; cold borscht*).

The translations of *barščiai* as *borscht* and *šaltibarščiai* as *cold beet soup* are the only accurate translations out of six. Other translations of salad and soups generated by MenuGuide contain various errors. For instance, the translation of *balta mišrainė* as *white salad* is uninformative as it only refers to the color but does not identify any of the key ingredients, such as boiled potatoes, carrots, or canned green peas. In addition, the illustration included with the translation of *balta mišrainė* is unrelated to the CSI because it shows a salad made of pear, cheese and cauliflower. Moreover, *cold borscht* is an inaccurate cultural substitute of *šaltibarščiai* because it does not refer to the same CSI. Principally, *šaltibarščiai* is a soup made of beetroot, cucumber, egg, fresh herbs and kefir, whereas *borscht* is made of beetroot, nutrient-dense vegetables and meat stock. Furthermore, the translation variations of *šiupininė sriuba* contains three more errors. For instance, *thick soup* is an underspecification since there is no information regarding key ingredients. *Poppy seed soup*, on the other hand, is an unrelated translation and there is no *poppy seed soup* in traditional Lithuanian cuisine. In addition, along with the translation, MenuGuide provides a picture of *tomato soup*, which is an unrelated item as well.

Thus, in terms of salad and soups, the most prominent translation strategies are generalization and cultural substitution. There are two cases of underspecification, an incorrectly chosen cultural substitute, an unrelated translation (e.g., *poppy seed soup*), inaccurate description and three inaccurate illustrations.

Table 8. "MenuGuide" generated translation of culture-specific potato dishes.

No.	Item	Translation preview by MenuGuide (2025)	Enlarged translation by MenuGuide (2025)	Description generated by MenuGuide (2025)	Illustration Accuracy
1.	*Bulviniai blynai*	*Potato pancakes*	*Bulgur Salad*	"Bulgur salad is a nutritious dish made with cooked bulgur […]"	Accurate.
2.	*Žemaičių blynai*	*Žemaitian pancakes*	*Šiauliai Potato Pancakes*	"[…] traditional Lithuanian potato	Accurate.

				pancakes made with grated potatoes, onions, and flour, then pan-fried until golden and crispy […] served with sour cream or apple sauce"	
3.	*Didžkukuliai*	*Big dumplings*	*Potato dumplings*	"[…] traditional Lithuanian potato dumplings filled with meat, served with sour cream or fried onions"	Inaccurate. It shows *tang bao.*
4.	*Vėdarai*	*Sausages*	*Blood sausages*	"Vėdarai, or blood sausages, are traditional Lithuanian sausages made from pig's blood, barley, and spices"	Innacurrate. It shows *fried sausages.*
5.	*Kraujiniai vėdarai*	*Blood sausages*	*Blood sausage*	"Kraujiniai vėdarai, or blood sausages, are traditional Lithuanian sausages made from pig's blood, barley, and spices"	Accurate.
6.	*Bulvių plokštainis*	*Potato Casserole*	*Potato Pancakes*	"Potato pancakes are a traditional dish made from grated potatoes, often mixed with onions and spices, then fried until crispy"	Inaccurate. It shows a *potato, cheese and bacon casserole.*
7.	*Švilpikai*	*Crustasceans*	*Dumplings*	"Švilpikai are Lithuanian dumplings made from grated potatoes, typically filled with meat or mushroom. They are usually boiled […]"	Inaccurate. It shows a variety of *crustasceans*.

MenuGuide's translations of potato dish CSIs (table 8) are translated by applying strategies such as direct translation (e.g., *potato pancakes*), generalization (e.g., *big dumplings; sausages; blood sausages; crustasceans*), specification (e.g., *šiauliai potato pancakes*) and cultural substitution (e.g., *bulgur salad*).

The translations of *bulviniai blynai* as *potato pancakes*, *didžkukuliai* as *potato dumplings*, *kraujiniai vėdarai* as *blood sausages* and *bulvių plokštainis* as *potato casserole* are accurate. The other five translations contain various errors. For example, MenuGuide's generated translations of *bulviniai blynai* as *bulgur salad* or *švilpikai* as *crustasceans* are incorrect since the items are not related neither to the CSIs nor to Lithuanian traditional cuisine. Likewise, the translation of *bulvių plokštainis* as *potato pancake* refers to a different CSI: *bulviniai blynai*. Moreover, the two translation variations of *žemaičių blynai* as *Žemaitian pancakes* or *Šiauliai potato pancakes* are inaccurate due to underspecification. *Žemaičių blynai* are made with meat, however, such information is not specified in the translation and not listed in the description. In addition, the original CSI *žemaičių blynai* does not provide information about a specific city, however, MenuGuide specifies it by including *Šiauliai* in the translation. It is unclear what prompted MenuGuide to include such specific location of the lowland region yet there is no relevant information regarding meat. Morever, the word *Žemaitian* seems to be constructed like a demonym, a word which identifies a connection between a specific

place and group of people, such as Latvian, Scandinavian, Lithuanian, etc. However, the word *Žemaitian* can be deemed as a morphological error, since it does not exist, and should be translated as *Samogitian* instead. Furthermore, the translation of *didžkukuliai* as *big dumpling* is too broad and does not provide any specification that the dish is made from potatoes. Likewise, the translation of *vėdarai* as *sausage* is too general as well since there is no identification that the sausage is made of potato and the customer would expect a *meat sausage.*

Thus, in terms potato-based CSI, the most common translation strategy is generalization. There are five cases of underspecification, one syntactic error, one morphological error, five unrelated translations and four inaccurate descriptions. Moreover, there are four inaccurate illustrations.

Table 9. "MenuGuide" generated translation of culture-specific meat dishes.

No.	Item	Translation preview by MenuGuide (2025)	Enlarged translation by MenuGuide (2025)	Description generated by MenuGuide (2025)	Illusration Accuracy
1.	*Koldūnai su mėsa*	*Dumplings with meat*	*Dumplings with meat*	"[…] traditional Lithuanian dish featuring dumplings filled with seasoned meat, often served with sour cream or sauce"	Innaccurate. It shows *gyoza dumplings.*
2.	*Karka*	*Pork chop*	*Karka*	"Karka is a traditional dish known for its tender meat and rich flavor, often prepared with a blend of spices and served with rice or bread"	Inaccurate. It shows a *pork chop.*
3.	*Spirgučiai*	*Cracklings*	*Spicy Cheese Dumplings*	"Spirgučiai are traditional Lithuanian dumplings made from flour and filled with a spicy cheese mixture"	Inaccurate. It shows a *packet of Salt and vinegar ribbed cracklings.*
4.	*Maltinukas*	*Meatloaf*	*Maltinukas*	"Maltinukas is a traditional Lithuanian dish made with a base of fermented rye bread or barley, often served with various toppings"	Inaccurate. It shows *meatloaf.*
5.	*Karbonadas*	*Pork cutlet*	*Pork Chops*	"Karbonadas are thick-cut pork chops, often marinated and grilled or pan-fried, served with a variety of sides"	Inaccurate. It shows a *Japanese pork cutlet*.
6.	*Sūdyti lašiniai*	*Salted bacon*	*Smoked Bacon*	"[…] traditional dish made from cured pork belly, often enjoyed as a savory delicacy"	Accurate.
7.	*Balandėliai*	*Stuffed cabbage*	*Stuffed Cabbage rolls*	"Balandėlės are traditional stuffed cabbage rolls filled with a mixture of minced meat, rice, and spices, and wrapped in cabbage leaves,	Accurate.

				then cooked in a flavorful tomato sauce (...)"	

MenuGuide's translations of meat dish CSIs (table 9) are translated by applying strategies such as generalization (e.g., *dumplings with meat; stuffed cabbage*), specification (e.g., *spicy cheese dumplings; stuffed cabbage rolls; smoked bacon; salted bacon*), cultural substitution (e.g., *pork chop; cracklings; meatloaf; pork cutlet*) and retention (e.g., *karka; maltinukas*).

Koldūnai su mėsa which is translated as *dumplings with meat* is the only accurate translation. The other six CSI translation contain various errors. For example, the translation of *spirgučiai* as *spicy cheese dumplings* is completely unrelated to the original CSI which is neither a dairy product nor made of dough. Likewise, the translation of *maltinukas* as *meatloaf* refers to a different CSI. Moreover, as previously determined, the most accurate translation of *karka* is *pork hock,* which is a specific part of an animal's leg. MenuGuide's generated translation inaccurately uses a cultural substitute *pork chop*, which refers to a loin cut near the spine. Furthermore, the translation of spirgučiai as *crackling* is inaccurate since *cracklings* refer to fried pork skin, not tallow or bacon. In addition, the generated translation variatitons of *balandėliai* as *stuffed cabbage* and *stuffed cabbage rolls* are partially accurate, as they specify the the key ingredient of the dish and its preparation. Despite that, it is an underspecification, since traditional *balandėliai* are consistently made with meat. The translation variations of *sūdyti lašiniai* as *salted bacon* or *smoked bacon* are both inaccurate, since *sūdyti lašiniai* refers to *salt cured slab bacon.* Lastly, *karbonadas* is a dish similar to the German *schnitzel*, which is made from a tenderized *pork tenderloin* which is breaded and fried. MenuGuide's generated translation of *karbonadas* as *pork cutlet* is inaccurate as there is no specification that the meat is tenderized or breaded.

Thus, in terms of meat CSIs, the most common strategies are specification and cultural substitution. There are three cases of underspecification, one unrelated translation, four inaccurate cultural substitutes, and two cases of inaccurate description. Moreover, there are four inaccurate illustrations.

Table 10. "MenuGuide" generated translation of culture-specific dairy dishes.

No.	Item	Translation preview by MenuGuide (2025)	Enlarged translation by MenuGuide (2025)	Description generated by MenuGuide (2025)	Illustration Accuracy
1.	*Varškė*	*Cottage cheese*	*Cottage cheese*	"Cottage cheese is a fresh cheese made from curds"	Inaccurate. It shows *cottage cheese.*
2.	*Varškėčiai*	*Cottage cheese snack*	*Cottage Cheese Dumplings*	"[…] traditional Lithuanian soft and sweet dumplings made with cottage cheese, usually served with sour cream or jam"	Inaccurate. It shows *cottage cheese with boiled egg, avocado and sauce.*
3.	*Kastinys*	*Pork spread*	*Curd*	"[…] creamy, soft cheese made from curds, often enjoyed as a spread or dip. It can be flavored with herbs or spices […]"	Inaccurate. It shows a *pork spread* or *paštetas.*
4.	*Lietiniai su varške*	*Pancakes with cottage cheese*	*Lithuanian Cheese Pancakes*	"Lithuanian cheese pancakes are delicious, fluffly fritters made from curd cheese, flour, and eggs […]"	Inaccurate. It shows *pancakes with maple syrup and berries.*

MenuGuide's translations of dairy dish CSIs (table 10) are translated by applying strategies such as cultural substitution (e.g*., cottage cheese*), specification (e.g., *Lithuanian cheese pancakes*), generalization (e.g., *curd; pork spread*) and a combined strategy of cultural substitution along with generalization (e.g., *cottage cheese snack; cottage cheese dumpling; pancakes with cottage cheese*).

Three of the CSI translations are created by using an inaccurate cultural substitute *cottage cheese*. As previously determined, *cottage cheese* has a higher moisture content than *varškė.* Since *varškė* does not have an equivalent, it can be translated by using the general substitute *curd*, which refers to a category of cheese curdled by souring. Moreover, the CSI *kastinys* has two translation variations, *pork spread* and *curd.* Principally, *kastinys* can be described as a *savoury sour cream butter*, therefore both translation variations are inaccurate as they refer to different and unrelated products. Furthermore, *lietiniai*, similarly to *crepes*, are thin pancakes, which can be wrapped around various filling. They are not fluffy or made from *curd cheese* like the description of *lietiniai su varške* implies. Both translation variations, *pancakes with cottage cheese* and *Lithuanian cheese pancakes*, are inaccurate due to underspecification and inaccurate cultural substitution.

Thus, in terms of dairy CSIs, the most common strategies are cultural substitution and generalization. There are two cases of underspecification, two cases of unrelated translation, five inaccurately chosen cultural substitutes, two inaccurate descriptions and four inaccurate illustrations.

Table 11. "MenuGuide" generated translation of culture-specific desserts and snacks.

No.	Item	Translation preview by MenuGuide (2025)	Enlarged translation by MenuGuide (2025)	Description generated by MenuGuide (2025)	Illustration Accuracy
1.	*Tinginys*	*Lazy cake*	*Tingingys*	"Tingingys is a traditional Latvian dish made with a savory mixture of grains, often served with meat or vegetables"	Accurate
2.	*Šakotis*	*Tree cake*	*Tree cake*	"[…] traditional Lithuanian pastry known for its unique appearance, resembling a tree with layers formed during baking"	Inaccurate. It shows a *cake with fondant which is shaped like a tree trunk*.
3.	*Kepta duona su sūriu*	*Fried bread with cheese*	*Cheese bread*	"Kepta duona su sūriu is a Lithuanian dish made of fried bread slices, often topped with melted cheese […]"	Inaccurate. It shows *fried white bread with marinara sauce*.
4.	*Žirniai su spirgučiais*	*Peas with cracklings*	*Peas with Bacon*	"Žirniai su spirgučiais is a traditional Lithuanian dish featuring green peas cooked with crispy bacon bits […]"	Accurate.

MenuGuide's translations of desserts and snacks (table 11) are translated by applying strategies such as generalization (e.g., *cheese bread; peas with bacon; tree cake*), direct translation (e.g., *fried bread with cheese; lazy cake*), retention (e.g., *tingingys*) and a combined strategy of generalization along with cultural substitution (e.g., *peas with crackling*).

The main issue found in all four translations of the CSIs is underspecification. For instance, the direct translation of *tinginys* as *lazy cake* identifies it as a dessert yet does not specify that it is a *chocolate no bake cake* made from cocoa powder, butter, biscuit crumbs and condensed milk. In addition, the other translation variation, *tingingys,* contains a syntactic error as it is misspelled. Furthermore, the translation of *šakotis* as *tree cake* refers to the shape of the dessert, which resembles a fir tree. However, it is not specified whether the shape is created by using fondant or formed during baking, which is especially important given the inaccurate illustration. As discussed previously, the most accurate translation could be achieved by using a cultural substitute such as *bankuchen.* Moreover, the translation of *kepta duona su sūriu* as *fried bread with cheese* implies that the dish is made with white bread, however, the popular snack is made with black rye bread. Another translation variation of *kepta duona su sūriu*, *cheese bread*, is completely unrelated. Furthermore, the translation of *žirniai su spirgučiais* as *peas with bacon* or *peas with crackling* implies that the dish contains green peas, as it is the most common type. However, *žirniai su spirgučiais* is made with yellow peas. In addition, *crackling* is an inaccurate cultural substitute of *spiručiai* since it refers to *fried pork skin.*

Thus, in terms of desserts and snacks, the most common translation strategies are generalization and direct translation. There are six cases of underspecification, one syntactic error, one inaccurately chosen cultural substitute and three inaccurate descriptions. Moreover, there are two inaccurate illustrations.

Table 12. "MenuGuide" generated translation of culture-specific beverages.

No.	Item	Translation preview by MenuGuide (2025)	Enlarged translation by MenuGuide (2025)	Description generated by MenuGuide (2025)	Illustration Accuracy
1.	*Naminė gira*	*Homemade kvass*	*Malt beverage*	"[…] traditional fermented beverage made from malted grains, often slightly carbonated, with a sweet and tangy flavour"	Accurate.
2.	*Rūgpienis*	*Sour milk*	*Rūgpienis*	"Rūgpienis, or sour milk, is a traditional fermented dairy product popular in the Baltic region"	Accurate.
3.	*Kefyras*	*Kefir*	*Kefir*	"[…] fermented milk drink similar to yogurt but thinner in consistency. It is made by adding kefir grains to cow, goat, or sheep milk"	Accurate.
4.	*Kisielius*	*Kisiel*	*Kissel*	"Kissel is a traditional Eastern European dessert made from fruit juice or puree mixed with sugar and thickened with starch"	Accurate.

MenuGuide's translations of beverages (table 12) are translated by applying strategies such as cultural substitution (e.g., *kefir, kisiel; homemade kvass*), generalization (e.g., *sour milk; malt beverage*) and retention (e.g., *rūgpienis*). There are no errors besides the inconsistency with generated results.

Thus, MenuGuide's generated translations of the 30 CSIs include 92 errors: 18 underspecifications, two syntax errors, nine unrelated translations, 11 inaccurately chosen cultural substitutes, one morphological error, 12 inaccurate descriptions, 17 inaccurate illustrations and 22 inconsistecies in translation. Moreover, after evaluating the translation accuracy, it is evident that MenuGuide's generated pictures are chosen at random and prompted by the translation and not the original CSI. For example, it does not include a picture of *didžkukuliai* but of *dumplings* instead. Therefore, the image search is occasionally unsuccessful since MenuGuide chooses an irrelevant image, such as the Chinese *tang bao* large dumpling.

2.3.2. Translation generated by MenuTranslator App

MenuTranslator App (2024) is a mobile AI menu translation tool which generates translations based on uploaded images. Therefore, the translation results analysed in this subsubsection were generated based on the synthetic menu (appendix 7) which was uploaded to the 1.1.0 version of the app. In the application, results are provided in a list format and consist of the recognized original Lithuanian dish name and a translation along with a brief description of the dish. Moreover, MenuTranslator App does not provide any relevant dish illustrations, instead, it redirects the user to a google image search, which is prompted by the dish name as a keyword. Since MenuTranslator App does not choose an illustration by itself, the illustration accuracy is not evaluated. Tables 13-18 include the information on how MenuTranslator App recognizes the original Lithuanian CSIs listed in the uploaded synthetic menu image, and the brief translation and description it generates prompted by it. The table columns which include generated content are labelled with the information "MenuTranslator App (2024)". Notably, only inaccurate translations of CSIs are discussed in detail, since all relevant details regarding all 30 CSIs are provided in sub-section 2.2.

Table 13. "MenuTranslator App" generated translation of culture-specific salad and soups.

No.	Item	Recognized as (MenuTranslator App, 2024)	Translation by MenuTranslator App (2024)
1.	*Balta mišrainė*	*Balta mišrainė*	A salad with potatoes, vegetables, and mayonnaise, similar to Olivier salad. Usually vegetarian.
2.	*Barščiai*	*Barščiai*	Beetroot soup, usually vegetarian but sometimes made using meat broth.
3.	*Šaltibarščiai*	*Šaltibarščiai*	Cold beet soup made with kefir, usually vegetarian.
4.	*Šiupininė sriuba*	*Šiupininė sriuba*	Thick soup made from various ingredients like meat, potatoes, and vegetables.

MenuTranslator App's translations of salads and soups (table 13) are translated by applying strategies such as specification (e.g., *salad with potatoes, vegetables and mayonnaise*); cultural substitution (e.g. *Olivier salad*) and generalization (e.g., *beetroot soup; cold beet soup; thick soup*). The generated translations of *balta mišrainė* and *šiupininė sriuba* both accurately represent the CSI and its key ingredients. The translations of *barščiai* and *šaltibarščiai,* however, are only partially accurate. Traditional *barščiai* is not a vegetarian soup as it is either made using meat stock or includes small pieces of meat such as *meatballs*. In addition, since MenuTranslator App included a cultural substitute in *balta mišrainė* description (e.g., *Olivier salad*), this strategy could have been applied to *barščiai* as well since *barščiai* has a widely known equivalent *borscht*. Moreover, traditional *šaltibarščiai* is

invariably vegetarian as it includes no meat. Thus, in terms of salads and soups, the most common translation strategy is generalization and there are two cases of underspecification.

Table 14. "MenuTranslator App" generated translation of culture-specific potato dishes.

No.	Item	Recognized as (MenuTranslator App, 2024)	Translation by MenuTranslator App (2024)
1.	*Bulviniai blynai*	*Bulviniai Blynai*	Potato pancakes, typically served with sour cream. They are vegetarian.
2.	*Žemaičių blynai*	*Žemaičių Blynai*	Traditional potato pancakes stuffed with minced meat. They are not vegetarian.
3.	*Didžkukuliai*	*Didžkukuliai*	Potato dumplings usually filled with meat, also known as Cepelinai. They are not vegetarian.
4.	*Vėdarai*	*Vėdarai*	Sausages made from potatoes and possibly with some meat filling. May not be vegetarian.
5.	*Kraujiniai vėdarai*	*Kraujiniai vėdarai*	Blood sausages, traditionally made with pork blood. They are not vegetarian.
6.	*Bulvių plokštainis*	*Bulvių plokštainis*	Potato pie, a savory dish made from layers of potatoes
7.	*Švilpikai*	*Švilpikų*	Small baked goods or dumplings made from flour and sometimes potatoes, possibly vegetarian

MenuTranslator App's translations of potato dish CSIs (table 14) are translated by applying strategies such as direct translation (e.g., *potato pancakes*), generalization (e.g., *potato dumplings; sausages made from potatoes; blood sausages; potato pie*) and specification (e.g., *traditional potato pancakes stuffed with minced meat; small baked goods made from flour and sometimes potatoes*). The translations of *bulviniai blynai, žemaičių blynai, didžkukuliai, vėdarai* and *kraujiniai vėdarai* accurately describe the CSIs and their key characteristics. However, the translation of *bulvių plokštainis* as *potato pie* refers to a different item and its description. To illustrate, *bulvių plokštainis* is a savoury dish made from finely grated potatoes, eggs, and milk, whereas *potato pie* is made from layers of sliced potatoes. Moreover, MenuTranslator App describes the potato CSI *švilpikai* as "made from flour and sometimes potatoes" yet it can be considered an underspecification since the dough of *švilpikai* mostly consists of boiled and mashed potatoes. Moreover, traditional *švilpikai* is not boiled, only baked. Thus, in terms of potato CSIs, the most common translation strategies are generalization and specification. There is one case of underspecification, one unrelated translation (e.g., *potato pie*) and one inaccurate description.

Table 15. "MenuTranslator App" generated translation of culture-specific meat dishes.

No.	Item	Recognized as (MenuTranslator App, 2024)	Translation by MenuTranslator App (2024)
1.	*Koldūnai su mėsa*	*Koldūnai su mėsa*	Dumplings filled with meat, similar to ravioli. They are not vegetarian.
2.	*Karka*	*Karka*	Pork knuckle, typically slow-cooked and served with various sides. Not vegetarian.
3.	*Spirgučiai*	*Spirgučiai*	Fried pieces of bacon or pork, used as a topping. They are not vegetarian.
4.	*Maltinukas*	*Maltinukas*	Meat patties or cutlets, often fried. They are not vegetarian.

5.	*Karbonadas*	*Karbofadai*	Pork or beef cutlets, fried or grilled. Not vegetarian.
6.	*Sūdyti lašiniai*	*Sūdyti lašiniai*	Salted pork fat or lard, often used in traditional Lithuanian dishes. Not vegetarian.
7.	*Balandėliai*	*Balandėliai*	Cabbage rolls stuffed with minced meat and rice, usually served with tomato sauce. It contains meat and is not vegetarian.

MenuTranslator App's translations of meat dish CSIs (table 15) are translated by applying strategies such as generalization (e.g., *dumplings; meat patty*), cultural substitution (e.g., *ravioli; cutlet; lard*) and specification (*cabbage rolls stuffed with minced meat and rice; salted pork fat; pork knuckle; fried pieces of bacon*).

The generated translations of *koldūnai su mėsa* as *dumplings filled with meat*, *spirgučiai* as *fried pieces of bacon* and *balandėliai* as *cabagge rolls stuffed with minced meat and rice* are the only accurate translations. However, the second translation variation of *koldūnai, ravioli,* is inaccurate as it refers to a type of Italian pasta. Furthermore, both *maltinukas* and *karbonadas* are translated as *cutlet* and both lack an essential specifying detail. To illustrate, *maltinukas* otherwise known as *kotletas* is a dish of French origin, originating from the word *cotelette*. However, the traditional Lithuanian version of the CSI *kotletas* refers to a dish specifically prepared from ground meat. Therefore, *cutlet* is a possible cultural substitute for *maltinukas* but it must include additional information about ground meat. Furthermore, *karbonadas* is similar to *schnitzel,* which is a breaded and fried tenderized pork tenderloin. MenuTranslator App's generated translation of *karbonadas* as *cutlet* is insufficient as there is no identification of the meat being tenderized or breaded. Moreover, the translation of *sūdyti lašiniai* as *salted pork fat or lard* is inaccurate, since the original CSI refers to a *salt-cured pork slab* containing both muscle and fat.

Thus, in terms of meat CSIs, the most common strategies are specification and cultural substitution. There are three cases of underspecification, and one inaccurate cultural substitution (e.g., *ravioli*).

Table 16. "MenuTranslator App" generated translation of culture-specific dairy dishes.

No.	**Item**	**Recognized as (MenuTranslator App, 2024)**	**Translation by MenuTranslator App (2024)**
1.	*Varškė*	*Varškė*	Curd or cottage cheese, often used in desserts or savory dishes.
2.	*Varškėčiai*	*Varškėčiai*	Cottage cheese pancakes, typically sweet. Often vegetarian.
3.	*Kastinys*	*Kastinys*	A type of spread or dip made from sour cream and spices.
4.	*Lietiniai su varške*	*Lietiniai su varške*	Crepes filled with curd cheese, often sweet. Typically vegetarian.

MenuTranslator App's translations of dairy CSIs (table 16) are translated by applying strategies such as cultural substitution (e.g*., cottage cheese; crepes; cottage cheese pancakes*), generalization (e.g., *curd*) and specification (e.g., *type of spread or dip made from sour cream and spices*). As previously determined, *cottage cheese* has a higher moisture content than *varškė.* Since *varškė* does not have an equivalent, it can be translated by using the general substitute *curd*, which refers to a category of

cheese curdled by souring. Thus, in terms of dairy CSIs, the most common strategies are cultural substitution. There are two cases of incorrectly chosen cultural substitute (e.g., *cottage cheese*).

Table 17. "MenuTranslator App" generated translation of culture-specific desserts and snacks.

No.	Item	Recognized as (MenuTranslator App, 2024)	Translation by MenuTranslator App (2024)
1.	*Tinginys*	*Tinginis*	Lithuanian lazy cake made with biscuits and cocoa. Vegetarian and often no-bake
2.	*Šakotis*	*Šakotis*	A traditional Lithuanian tree cake made from dough and baked on a spit
3.	*Kepta duona su sūriu*	*Kepta duona su sūriu*	Fried bread with cheese, served as a snack or appetizer. Typically vegetarian.
4.	*Žirniai su spirgučiais*	*Žirniai su spirgučiais*	Peas with fried bacon bits, not vegetarian

MenuTranslator App's translations of desserts and snacks (table 17) are translated by applying strategies such as direct translation (e.g., *peas with fried bacon bits; fried bread with cheese; Lithuanian lazy cake*) and generalization (e.g., *traditional Lithuanian tree cake*). The translation of *kepta duona su sūriu* as *fried bread with cheese* implies that the dish is made with white bread, however, the popular snack is made with black rye bread. Likewise, the translation of *žirniai su spirgučiais* as *peas with bacon* implies that the dish contains green peas, as it is the most common type. However, *žirniai su spirgučiais* is made with yellow peas. Thus, in terms of desserts and snacks, the most common translation strategies are direct translation. There are two cases of underspecification.

Table 18. "MenuTranslator App" generated translation of culture-specific beverages.

No.	Item	Recognized as (MenuTranslator App, 2024)	Translation by MenuTranslator App (2024)
1.	*Naminė gira*	*Naminė gira*	Homemade kvass, a fermented beverage made from rye bread.
2.	*Rūgpienis*	*Rūgpienis*	Sour milk, similar to kefir or buttermilk.
3.	*Kefyras*	*Kefyras*	Fermented milk drink, similar to buttermilk.
4.	*Kisielius*	*Kisielius*	Traditional fruit-based drink or dessert, thickened with potato starch.

MenuTranslator App's translations of beverages (table 18) are translated by applying strategies such as cultural substitution (e.g., *homemade kvass; kefir; buttermilk*), generalization (e.g., *sour milk; fermented milk drink*) and specification (e.g., *traditional fruit-based drink or dessert, thickened with potato starch*). The comparison between *rūgpienis, kefyras* and *buttermilk* is inaccurate since the cultural substitute *buttermilk* refers to a liquid which is created during butter churning and not related to fermentation. Thus, in terms of traditional beverages, the most common strategy is cultural substitution and there are two cases of inaccurate cultural substitution.

Thus, MenuTranslator App's generated translations of the 30 CSIs include 15 errors: eight underspecifications, one unrelated translation, five inaccurately generated cultural substitutes and one inaccurate description.

2.3.3. Translation generated by Menuly

Menuly (2023) is a mobile AI menu translation tool which generates translations based on uploaded images. Therefore, the translation results analysed in this subsubsection were generated based on the synthetic menu (appendix 7) which was uploaded to the 1.0.2 version of the app. In the application, the results are provided in a list format and include a translation along with a dish-related illustration. However, unlike the other two mobile applications, Menuly does not provide any description of the dishes. Tables 19-24 include the information on Menuly's generated translation and the information regarding illustration accuracy. The table columns which include generated content are labelled with the information "Menuly (2023)". Notably, only inaccurate translations of CSIs are discussed in detail, since all relevant details regarding all 30 CSIs are provided in sub-section 2.2.

Table 19. "Menuly" generated translation of culture-specific salad and soups.

No.	Item	Translation by Menuly (2023)	Illustration
1.	*Balta mišrainė*	*White salad*	Accurate
2.	*Barščiai*	*Borscht*	Accurate
3.	*Šaltibarščiai*	*Cold Borscht*	Accurate
4.	*Šiupininė sriuba*	*Vegetable soup*	Accurate

Menuly's translations of salads and soups (table 19) are translated by applying strategies such as direct translation (e.g., *white salad*), generalization (e.g., *vegetable soup*) and cultural substitution (e.g., *borscht; cold borscht*).

Seemingly, *white salad* is a common way to translate the CSI *balta mišrainė* since such variation appears in HBH Palanga, MenuGuide and Menuly menu translations. However, as previously discussed, *white salad* is too broad as it only refers to the color of the dish and does not identify any key ingredients, such as boiled potatotes, carrots or canned green peas. Furthermore, the translation of *šiupininė sriuba* as *vegetable soup* can be considered an underspecification as well, since there is no information regarding the type of vegetables, nor that *šiupininė sriuba* is a soup of rich and thick consistency. Notably, *barščiai* as *borscht* is the only accurate translation out of the four items. However, *cold borscht* is an inaccurate cultural substitute of *šaltibarščiai*. To illustrate, Menuly's generated translation suggests that *borscht* and *cold borscht* are referring to the same soup which can be either served chilled or heated. However, the only uniting quality between *barščiai* and *šaltibarščiai* is the beetroot. *Šaltibarščiai* is a soup made of beetroot, cucumber, egg, fresh herbs and kefir, whereas *borscht* is made of beetroot, nutrient-dense vegetables and meat stock.

Thus, in terms of salads and soups, the most common translation strategy employed by Menuly is cultural substitution. There are two cases of underspecification and one incorrectly chosen cultural substitute.

Table 20. "Menuly" generated translation of culture-specific potato dishes.

No.	Item	Translation by Menuly (2023)	Illustration
1.	*Bulviniai blynai*	*Potato pancakes*	Accurate
2.	*Žemaičių blynai*	*Žemaitian pancakes*	Accurate
3.	*Didžkukuliai*	*Big dumplings*	Inaccurate. It shows *kibinas.*
4.	*Vėdarai*	*Sausages*	Accurate
5.	*Kraujiniai vėdarai*	*Blood sausages*	Accurate

6.	*Bulvių plokštainis*	*Potato Casserole*	Accurate
7.	*Švilpikai*	*Pork Cracklings*	Accurate

Menuly's translations of potato CSIs (table 20) are translated by applying strategies such as direct translation (e.g., *potato pancakes*), generalization (e.g., *sausages; big dumplings; blood sausages*), cultural substitution (e.g*., potato casserole; pork crackling*), and a combined strategy of retention along with direct translation (e.g., *Žemaitian pancakes*).

Principally, *pork cracklings* is completely unrelated to the original CSI *švilpikai,* as the cultural substitute refers to *fried pork skin*, whereas *švilpikai* is a potato dish made from mashed potatoes, eggs and flour. Moreover, there are two types of *potato pancakes* listed in table 20, *bulviniai blynai* and *žemaičių blynai. Bulviniai blynai* are made from grated potatoes while *žemaičių blynai* are made from boiled potatoes and meat. However, Menuly does not establish a clear difference between the two items, nor does it specify that *žemaičių blynai* are made of potatoes. Morever, the word *Žemaitian* seems to be constructed like a demonym, a word which identifies a connection between a specific place and group of people, such as Latvian, Scandinavian, Lithuanian, etc. However, the word *Žemaitian* can be deemed as a morphological error, since it does not exist, and should be translated as *Samogitian* instead. Furthermore, the translations of *didžkukuliai* and *vėdarai* are too broad as they identify categories yet do not provide any additional information about the CSI. Since there is no identification that the *sausage* is made of potato, the customer would instantly link the item to a *meat sausage*. Likewise*, big dumpling* without any identification of being a *potato dumpling* may be linked to soup dumplings which are popular in Georgian or Chinese cuisine. In addition, the illustration of *didžkukuliai* would raise further questions, since it shows a traditional Karaite pastry *kibinas*. Notably, the translations of *kraujiniai vėdarai* as *blood sausages* and *bulvių plokštainis* as *potato casserole* are the only accurate translations out of the seven CSIs.

Thus, in terms of potato CSIs, the most common strategies are generalization and cultural substitution. There are four cases of underspecification, one morphological error (e.g., *Žemaitian*), one inaccurate illustration and one unrelated translation (e.g., *pork cracklings*).

Table 21. "Menuly" generated translation of culture-specific meat dishes.

No.	**Item**	**Translation by Menuly (2023)**	**Illustration**
1.	*Koldūnai su mėsa*	*Dumplings with meat*	Accurate
2.	*Karka*	*Pork ribs*	Accurate
3.	*Spirgučiai*	*Fried bacon bits*	Accurate
4.	*Maltinukas*	*Meatballs*	Inaccurate. It shows *baltieji ryžiai su lęšiais ir pomidorais* product package
5.	*Karbonadas*	*Pork Chop*	Accurate
6.	*Sūdyti lašiniai*	*Salted Bacon*	Accurate
7.	*Balandėliai*	*Stuffed cabbage*	Accurate

Menuly's translations of meat dish CSIs (table 21) are translated by applying strategies such as generalization (e.g., *dumplings with meat; meatballs; stuffed cabbage*), specification (e.g., *salted bacon; fried bacon bits*) and cultural substitution (*pork chop; pork ribs*).

The culture-specific item *karka* refers to a specific portion of a pig's leg, which is immediately above the knee joint. As previously determined, the most accurate translation of *karka* is *pork hock*.

Therefore, Menuly's generated cultural substitution of *karka* as *pork ribs* is inaccurate as it refers to a different part of the animal. Moreover, *meatball* refers to a small and round ball of ground meat. *Maltinukas* is made of ground meat as well but is larger and flatter. Therefore, *meatball* can be deemed as inaccurate due to underspecification, as it only provides information about the shape of the dish, which inaccurately represents the CSI. In addition, the illustration regarding *maltinukas* is completely unrelated to the CSI, as it includes a picture of a *rice, lentil and tomato porridge* package, which can be bought in a store. Furthermore, *karbonadas* is a dish similar to the German *schnitzel*, which is made from a tenderized *pork tenderloin* which is breaded and fried. Menuly's generated translation of *karbonadas* as *pork chop* is inaccurate as there is no identification of the meat being tenderized or breaded. In addition, *pork chop* includes a bone, while *karbonadas* does not. Moreover, the generated translation of *balandėliai* as *stuffed cabbage* is partially accurate, as it specifies the the key ingredient of the dish and its preparation. Despite that, it is an underspecification, since traditional *balandėliai* are consistently made with meat. Notably, *koldūnai su mėsa* as *dumpling with meat* and *spirgučiai* as *fried bacon bits* are the only accurate translations out of the seven items.

Thus, in terms of meat CSIs, the most common strategies are generalization, specification, and cultural substitution. There are two incorrectly chosen cultural substitutes, two cases of underspecification and one inaccurate illustration.

Table 22. "Menuly" generated translation of culture-specific dairy dishes.

No.	Item	Translation by Menuly (2023)	Illustration
1.	*Varškė*	*Cottage cheese*	Inaccurate. It shows "varškės apkepas".
2.	*Varškėčiai*	*Cottage cheese dumplings*	Partially accurate. It shows "varškėčiai" with spinach.
3.	*Kastinys*	*Cottage cheese spread*	Accurate
4.	*Lietiniai su varške*	*Pancakes with cottage cheese*	Accurate

Menuly's translations of dairy CSIs (table 22) are translated by applying strategies such as cultural substitution (e.g., *cottage cheese*) and a combined strategy of cultural substitution along with generalization (e.g., *cottage cheese spread; cottage cheese dumplings; pancakes with cottage cheese*).

Fundamentally, the main error found in all four translations is the inaccurate cultural substitute *cottage cheese.* As previously determined, *cottage cheese* has a higher moisture content than *varškė.* Since *varškė* does not have an equivalent, it can be translated by using the general substitute *curd*, which refers to a category of cheese curdled by souring. Moreover, the CSI *kastinys* can be described as a *savoury sour cream butter,* therefore the translation *cottage cheese spread* incorrectly represents the dish and its key features. Furthermore, the translation of *lietiniai su varške* as *pancakes with cottage cheese* is inaccurate due to under specification. *Lietiniai* like *crepes* are made by pan-frying a thin layer of batter. *Pancakes*, on the other hand, are a general category of multiple variations ranging from thin to thick. In terms of illustrations, two out of four illustrations of the CSI are inaccurate. One of them is the illustration of *varškė*. Principally, *varškė* is a key ingredient in *varškės apkepas*, however, *varškės apkepas* refers to a different CSI. Moreover, the illustration of *varškėčiai* is partially accurate, as it does not portray a traditional variation of the dish but one containing spinach. A more accurate illustration could portray *varškėčiai* with sour cream and berries.

Thus, in terms of dairy CSIs, the most common translation strategies are cultural substitution and generalization. There are four cases of inaccurate cultural substitution, one case of underspecification and two inaccurate illustrations.

Table 23. "Menuly" generated translation of culture-specific desserts and snacks.

No.	Item	Translation by Menuly (2023)	Illustration
1.	*Tinginys*	*Lazy cake*	Accurate
2.	*Šakotis*	*Tree cake*	Accurate
3.	*Kepta duona su sūriu*	*Fried bread with cheese*	Accurate
4.	*Žirniai su spirgučiais*	*Peas with bacon*	Accurate

Menuly's translations of desserts and snacks (table 23) are translated by applying strategies such as direct translation (e.g*., lazy cake; fried bread with cheese; peas with bacon*) and generalization (e.g., *tree cake*).

Fundamentally, the main error found in all four translations is underspecification, as all translations omit the most prominent features of each dish. For instance, the direct translation of *tinginys* as *lazy cake* identifies it as a dessert yet does not specify that it is a *chocolate no bake cake* made from cocoa powder, butter, biscuit crumbs and condensed milk. Moreover, the translation of *šakotis* as *tree cake* refers to the shape of the dessert, which resembles a fir tree. However, it is not specified whether the shape is created by using fondant or formed during baking, etc. As discussed previously, the most accurate translation could be achieved by using a cultural substitute such as *bankuchen.* Furthermore, the translation of *kepta duona su sūriu* as *fried bread with cheese* implies that the dish is made with white bread, however, the popular snack is made with black rye bread. Likewise, the translation of *žirniai su spirgučiais* as *peas with bacon* implies that the dish contains green peas, as it is the most common type. However, *žirniai su spirgučiais* is made with yellow peas.

Thus, in terms of desserts and snacks, the most common translation strategy is direct translation. There are four cases of underspecification.

Table 24 "Menuly" generated translation of culture-specific beverages.

No.	Item	Translation by Menuly (2023)	Illustration
1.	*Naminė gira*	*Homemade kvass*	Accurate
2.	*Rūgpienis*	*Sour milk*	Inaccurate. It shows "baltieji ryžiai su lęšiais ir pomidorais" product package
3.	*Kefyras*	*Kefir*	Accurate
4.	*Kisielius*	*Kisel*	Inaccurate. It shows "baltieji ryžiai su lęšiais ir pomidorais" product package

Menuly's translations of beverages (table 24) are translated by applying strategies such as cultural substitution (e.g*., homemade kvass; kefir; kisel*) and generalization (e.g., *sour milk*). There are two errors related to inaccurately generated illustrations.

Thus, Menuly's generated translations of the 30 CSIs include 28 errors: 13 underspecifications, one unrelated translation, seven inaccurately generated cultural substitutes, one morphological error and six inaccurately generated illustrations.

2.4. Comparative analysis of human and machine translation

A visual representation of the empirical findings promotes a deeper understanding of the relationship between translation strategies and translation errors. The column charts visualise the translation strategies classified according to Pedersen's (2011) taxonomy and portray the shifts in choices depending on the context of each CSI category (soups and salad, potato dishes, etc.). Moreover, two pie charts alongside each other assist in the comparison of errors found in each category. Since human and AI generated translations only share four error types (underspecification, inconsistency, syntax and cultural substitution), the corresponding colors for each error create an accessible comparison.

The visual representation of empirical findings begins with the presentation of translation strategies and errors related to salad and soup translations. The category consists of four CSIs, such as *balta mišrainė, barščiai, šaltibarščiai*, and *šiupininė sriuba.*

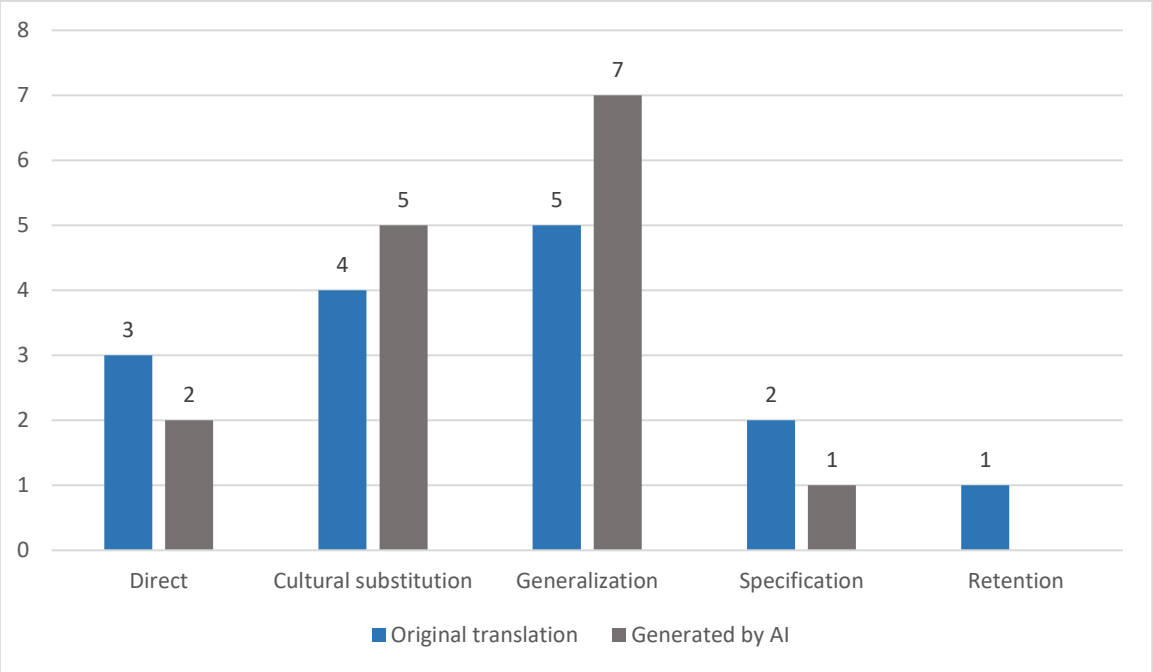

Fig. 2. Culture-specific salad and soup translation strategies

In regards of salad and soups, empirical findings (fig. 2) show only a slight difference between the translation strategy choice applied by AI and human translators. Both original and generated translations place a strong emphasis on cultural substitution and generalization. Moreover, there are similar levels in direct translation and specification strategy choice. One notable exception is the retention strategy, which is applied once by Agotos Gryčia translator. In this case, the CSI *šaltibarščiai* was translated as *šaltibarščiai (traditional cold beetroot soup)*. The translator successfully preserved the identity of the original dish name as well as provided a short and precise description of the dish.

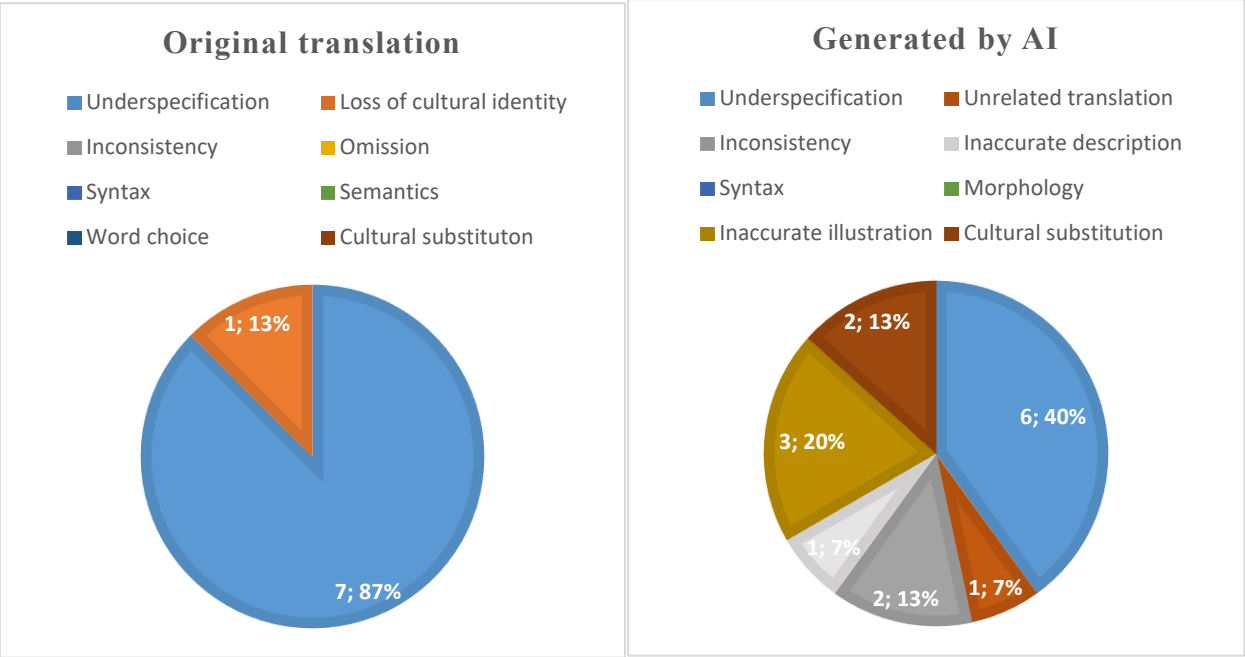

Fig. 3. Culture-specific salad and soup translation errors

Notably, in terms of salad and soups, the original translations contain 8 errors while AI generated translations contain 15 errors. As shown in figure 3, the previously significant generalization strategy resulted in the increase of underspecification errors, 7 errors were indicated in the original translations and 6 were indicated in generated translations. No cultural substitution errors were found in the original translation, whereas two were present in the generated translation. However, the original translation had one case of cultural identity loss. In this case, the translator of HBH Palanga restaurant menu translated the CSI *šaltibarščiai* as h*olodnik (cold red beet soup).* Principally, the cultural substitution strategy is used to appeal to a wider audience of English-speaking customers who may be familiar with the item (e.g.*, schnitzel, borscht, bankuchen*). However, the combined strategy of specification along with cultural substitution is unnecessary since it erases the significance of the original dish name *šaltibarščiai,* which could have been retained in the case of additional specification.

The following visual representation of empirical findings examines the translation strategies and errors related to eight potato CSIs, such as *bulviniai blynai*, *žemaičių blynai, koldūnai*, *didžkukuliai, vėdarai, kraujiniai vėdarai, bulvių plokštainis*, and *švilpikai.*

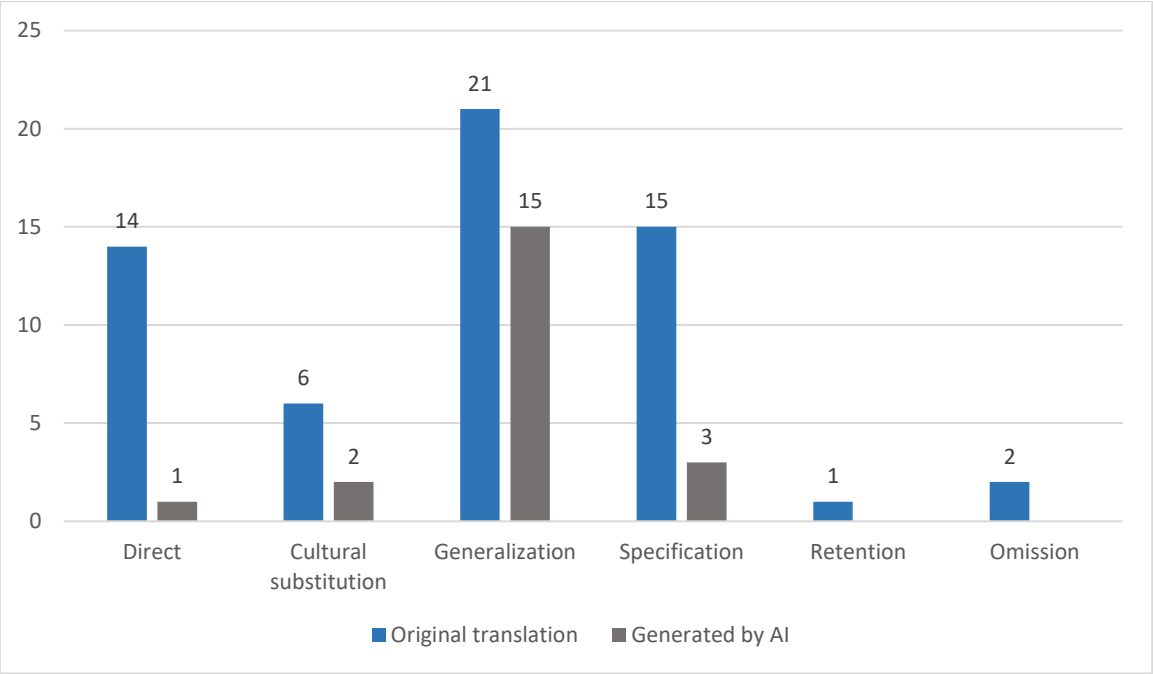

Fig. 4. Culture-specific potato dish translation strategies

The empirical findings (fig. 4) highlight the strategy choice distribution between AI and human translators, in regards of potato CSIs. Notably, there are similar levels in the generalization strategy choice. However, human translators place a strong emphasis on specification (15) and direct translation (14) strategies as well. These strategies are less prominent in generated translations since specification is used 3 times, cultural substitution twice and direct translation only once.

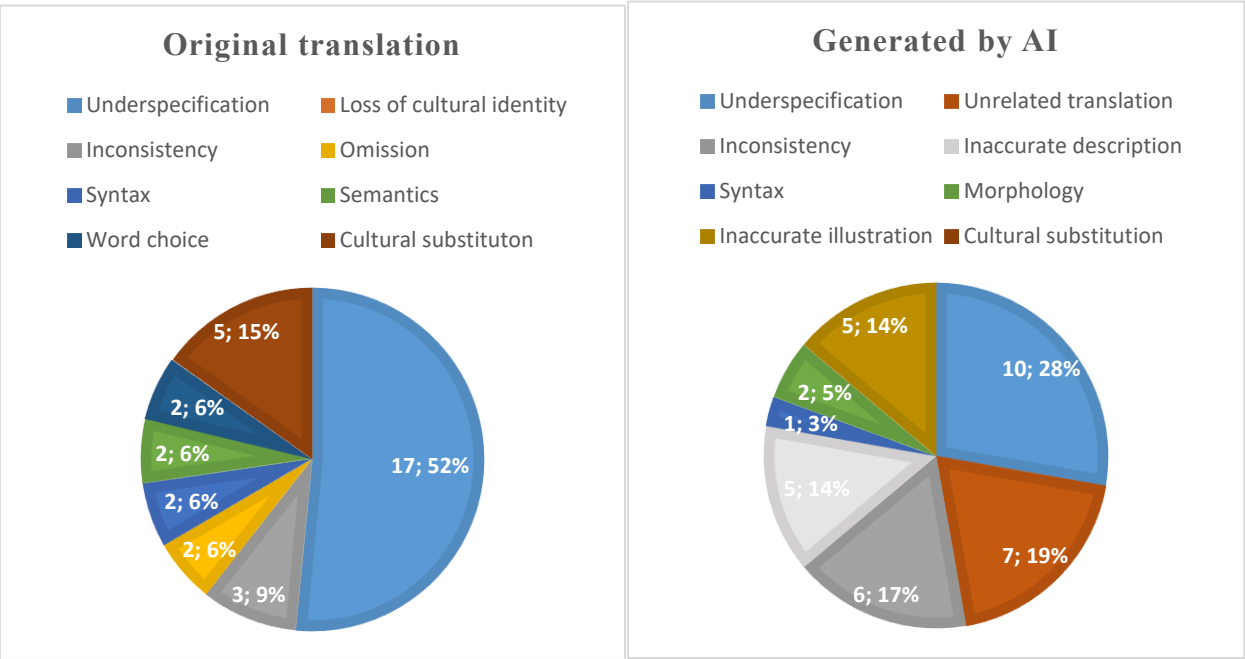

Fig. 5. Culture-specific potato dish translation errors

Notably, in terms of potato CSIs, the original translations contain 33 errors, whereas AI generated translations contain 36 errors. As shown in figure 5, the previously frequently used generalization strategy resulted in the increase of underspecification errors, 17 such errors were indicated in original translations and 10 errors were indicated in the generated translations. Moreover, inaccurate cultural

substitution is another significant error type prominent in original human translations. Fundamentally, the cultural substitution strategy was applied 6 times, and 5 of those times it was applied inaccurately. Two of those errors were related to the translation of the CSI *koldūnai* which was translated as *ravioli.* In regards of AI generated translation errors, besides underspecification, the most common errors were unrelated (7) and inconsistent (6) translation. For example, in terms of unrelated translation, MenuGuide translated the potato CSI *švilpikai* as *crustasceans.* A less frequent error was related to morphology since there were two cases where AI translated *žemaičių blynai* as *Žemaitian pancakes.*

The following visual representation of empirical findings examines the translation strategies and errors related to six meat CSIs, such as *karka, spirgučiai, kotletas, karbonadas, sūdyti lašiniai, balandėliai.*

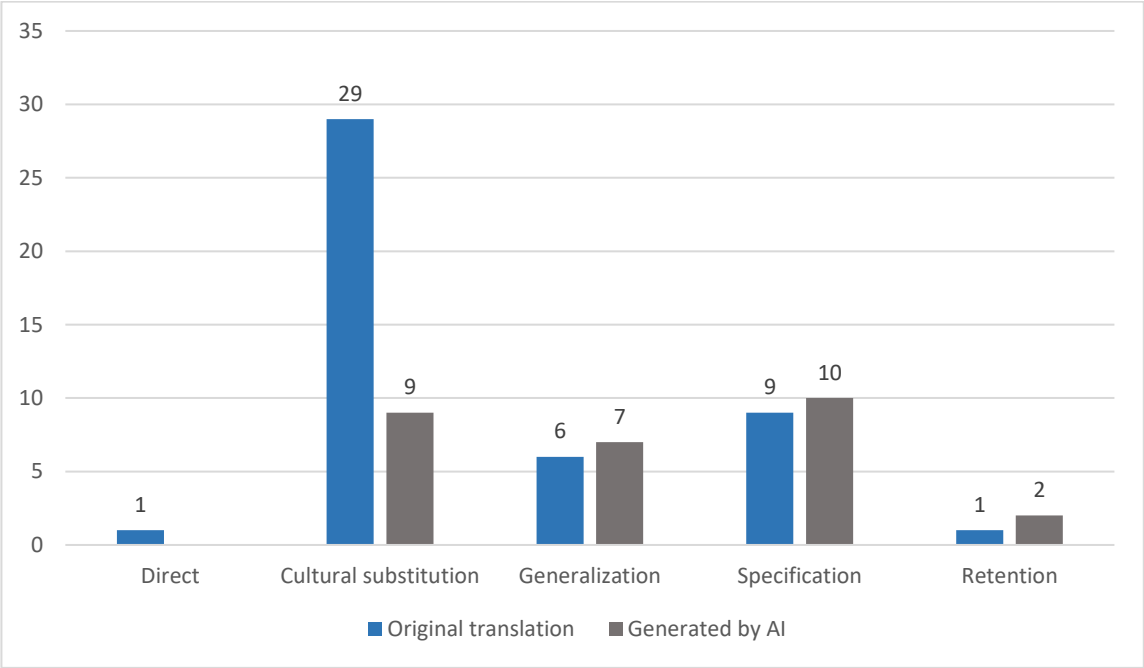

Fig. 6. Culture-specific meat dish translation strategies

The empirical findings (fig. 6) highlight the strategy choice distribution between AI and human translators, in regards of meat CSIs. Notably, original translations prioritize cultural substitution (29), whereas AI focuses on both specification (10) and cultural substitution (9). Less prominent strategies are retention and direct translation. Retention is used once by human translators and twice by AI.

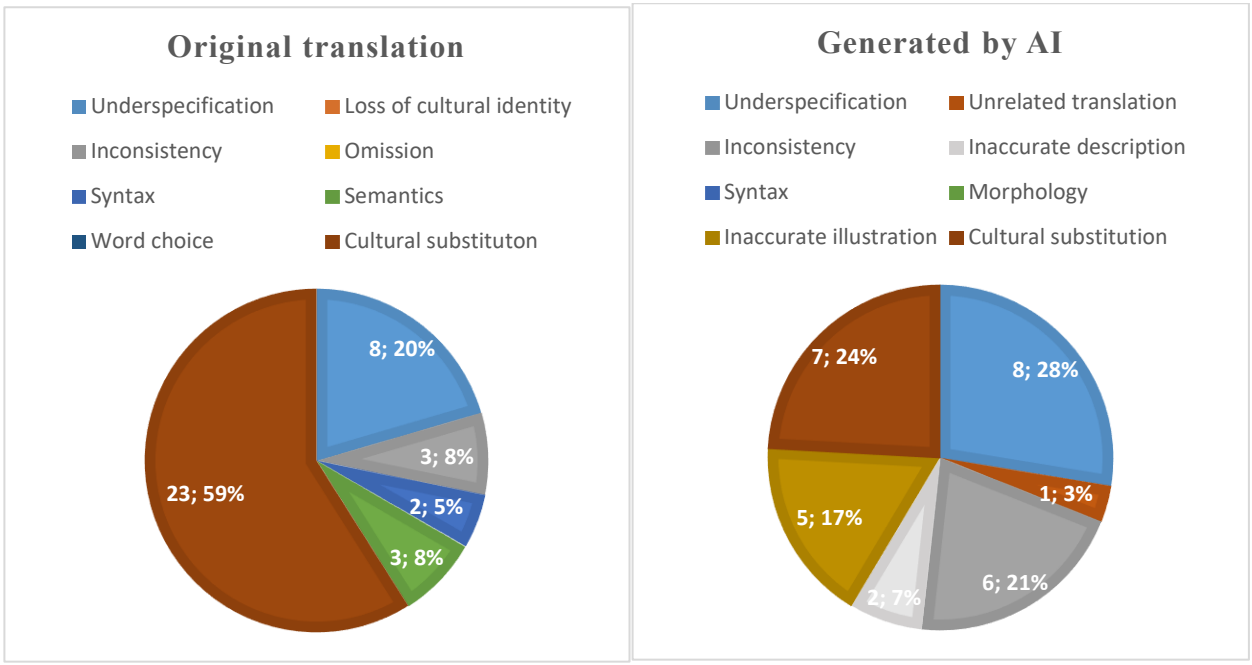

Fig. 7. Culture-specific meat dish translation errors

Notably, in terms of meat CSIs, the original translations contain 39 errors while AI generated translations contain 29 errors. As seen in figure 7, the previously prominent cultural substitution strategy has resulted in the increase of cultural substitution errors, 23 out of 29 cultural substitutes were inaccurate in original translations, and 7 out of 9 cultural substitutes were inaccurate in AI generated translations. A shared common error was the reoccurring translation of *spirgučiai* as *cracklings*. Moreover, the use of the generalization strategy resulted in underspecification, which was present 8 times both in original and generated translations.

The following visual representation of empirical findings examines the translation strategies and errors related to four dairy CSIs, such as *varškė, varškėčiai, kastinys* and *lietiniai.*

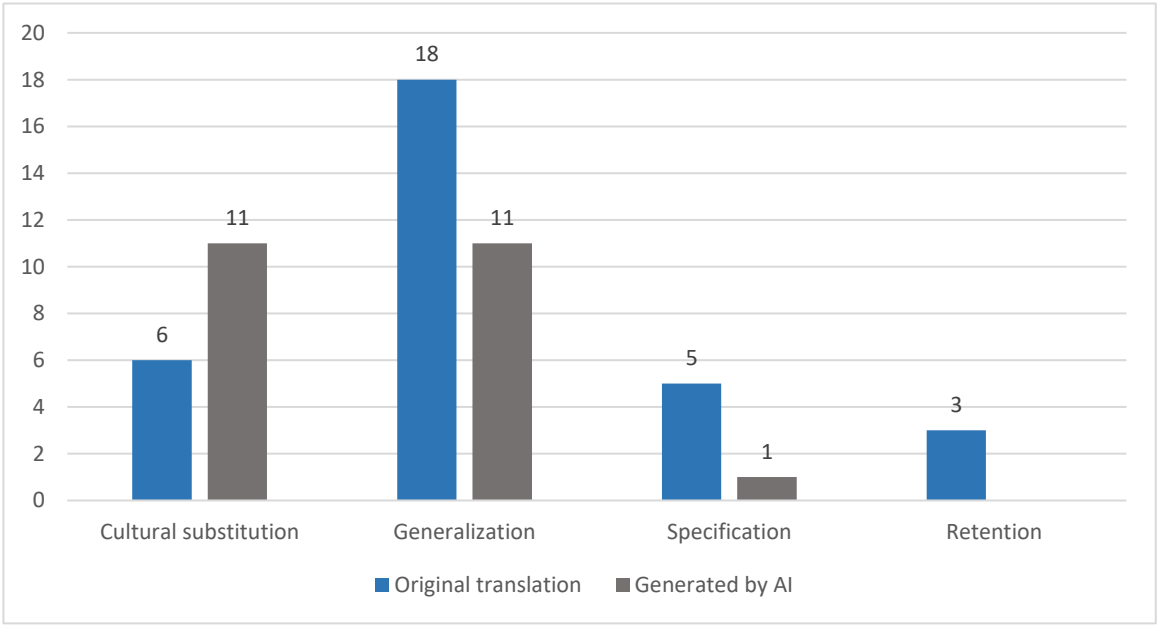

Fig. 8. Culture-specific dairy dish translation strategies

The empirical findings (fig. 8) highlight the strategy choice distribution between AI and human translators, in regards of dairy CSIs. The column chart shows only a slight difference between the translation strategy choice applied by AI and human translators. Both original and generated translations place a strong emphasis on generalization and cultural substitution. Human translators also apply specification (5) and retention (3) strategies.

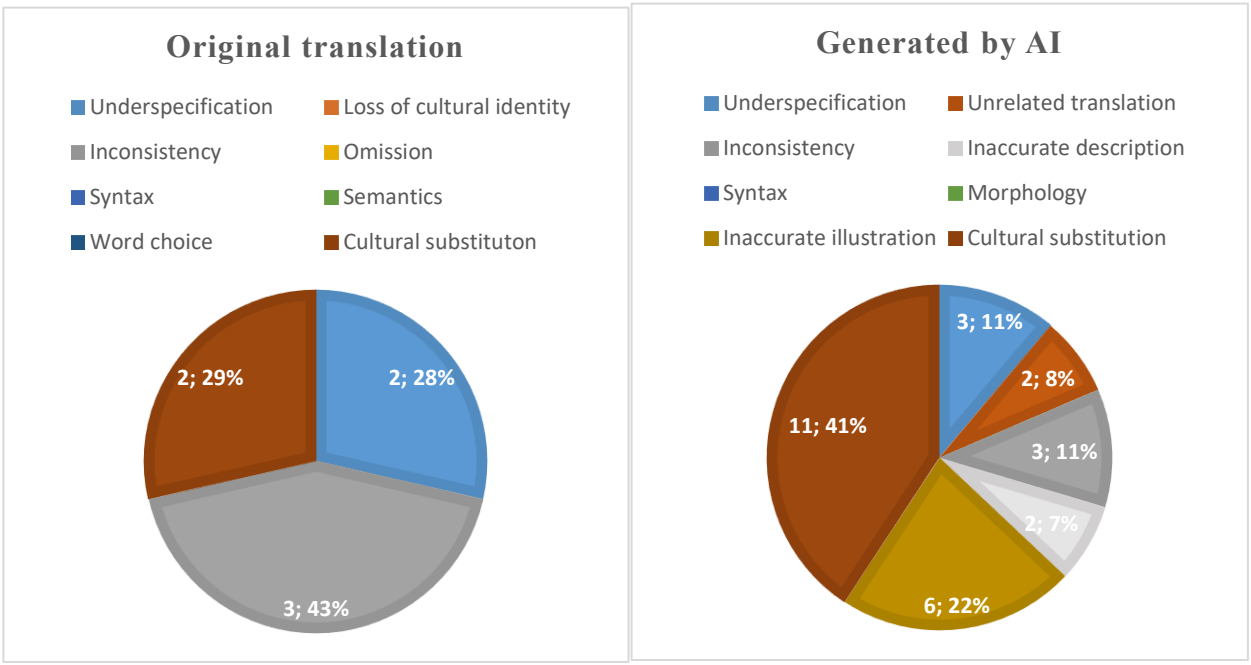

Fig. 9. Culture-specific dairy dish translation errors

Notably, in terms of dairy CSIs, the original translations contain 7 errors while AI generated translations contain 27 errors. As shown in figure 9, the most common error types in original translations were inconsistency (3), underspecification (2) and inaccurate cultural substitution (2), whereas the most prominent errors in generated translation were cultural substitution (11) and inaccurate illustrations (6). Notably, dairy CSIs are one of the few categories in which generalization does not necessarily result in an underspecification error, since the general item *curd* is the most accurate way to translate *varškė.* However, the majority of cultural substitution errors were made by translating *varškė* as *cottage cheese.*

The following visual representation of empirical findings examines the translation strategies and errors related to four traditional desserts and snacks, such as *tinginys, šakotis, kepta duona su sūriu* and *žirniai su spirgučiais.*

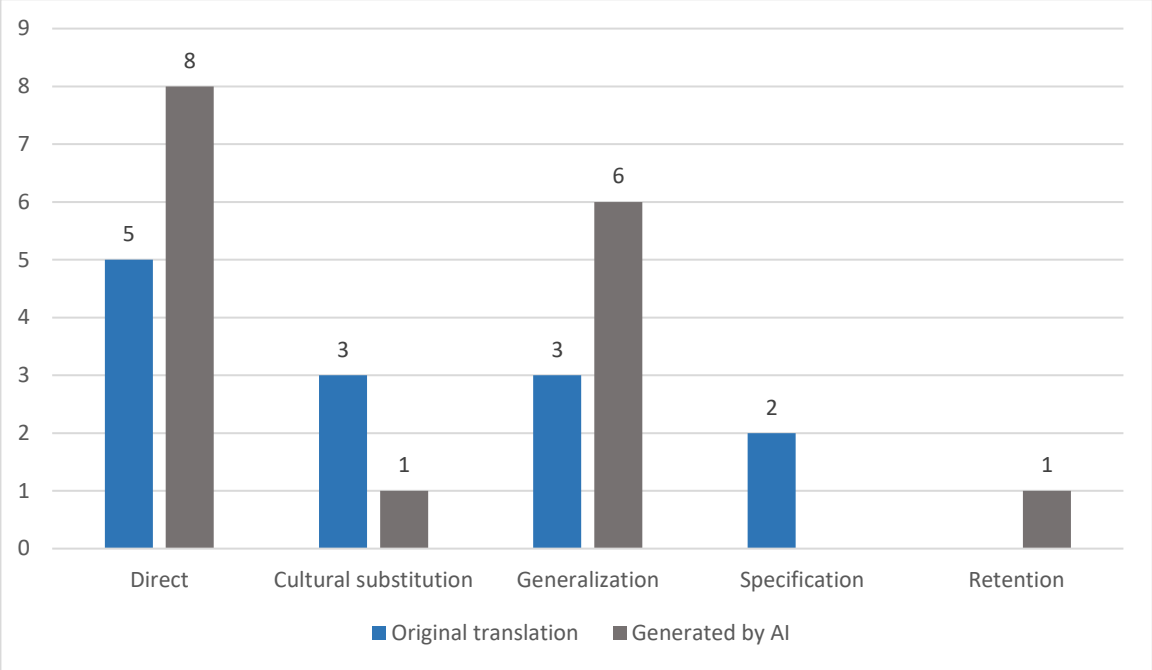

Fig. 10. Culture-specific dessert and snack translation strategies

The empirical findings (fig. 10) highlight the strategy choice distribution between AI and human translators, in regards of desserts and snacks. Notably, both original and generated translations prioritize direct translation and generalization. Another strategy favored by human translators is cultural substitution, however AI only uses it once, while translating *žirniai su spirgučiais* as *peas with cracklings.*

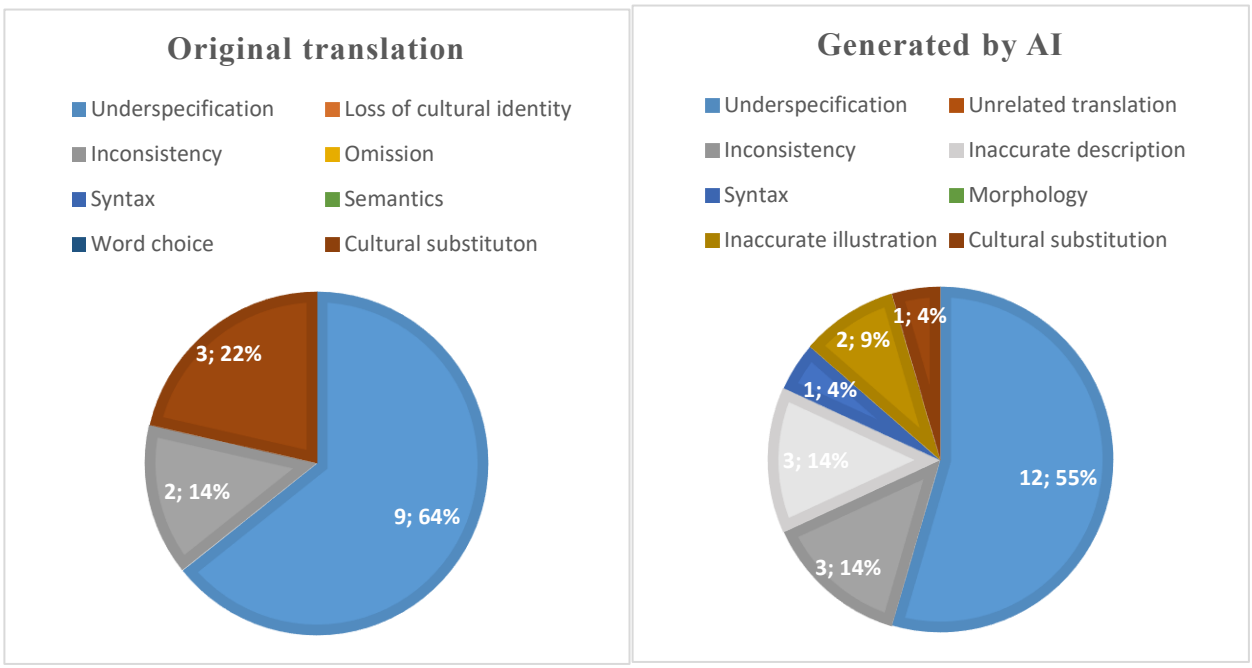

Fig. 11. Culture-specific dessert and snack translation errors

Notably, in terms of desserts and snacks, the original translations contain 14 errors while AI generated translations contain 22 errors. As seen in figure 11, the previously prominent direct translation and generalization strategies resulted in an increase of underspecification errors, 9 such errors were present in the original translations and 12 errors were found in generated translations.

The following visual representation of empirical findings examines the translation strategies and errors related to four traditional Lithuanian beverages, such as *gira, rūgpienis, kefyras* and *kisielius*.

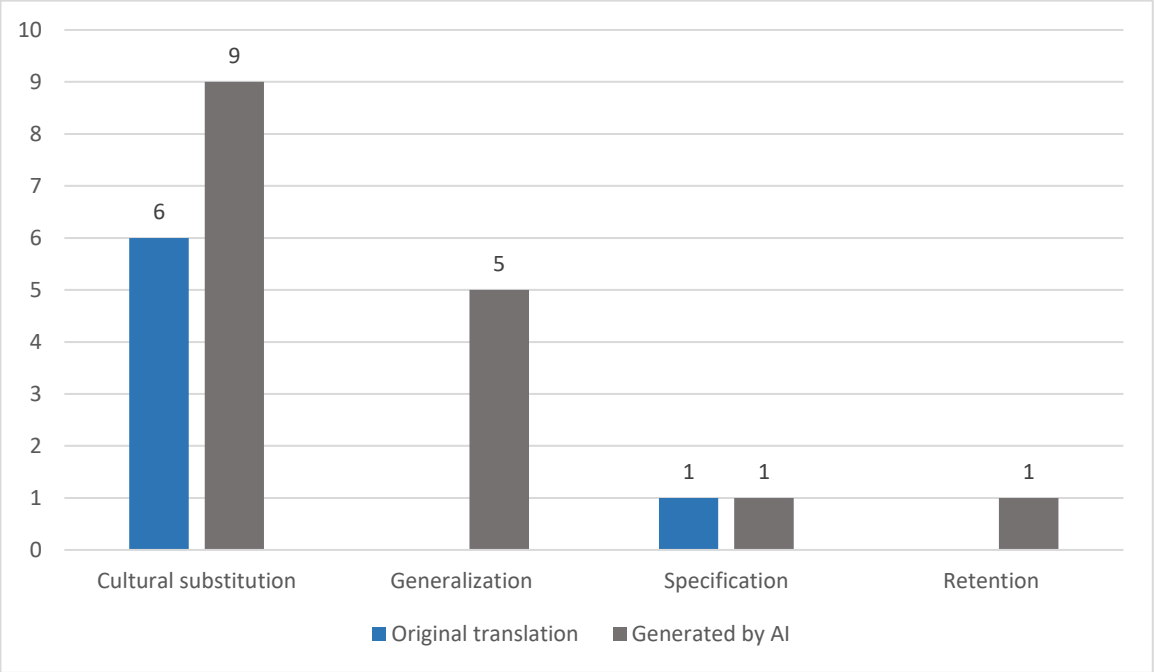

Fig. 12. Culture-specific beverage translation strategies

As shown in figure 12, the translation variations of beverages found in 5 traditional restaurant menus can be classified into two translation strategy types – cultural substitution (6) and specification (1). Moreover, AI generated translations can be classified into four strategy types – cultural substitution (9), generalization (5), specification (1) and retention (1). Although the number of strategies differs, it is evident that both AI and human translators account cultural substitution for the largest share.

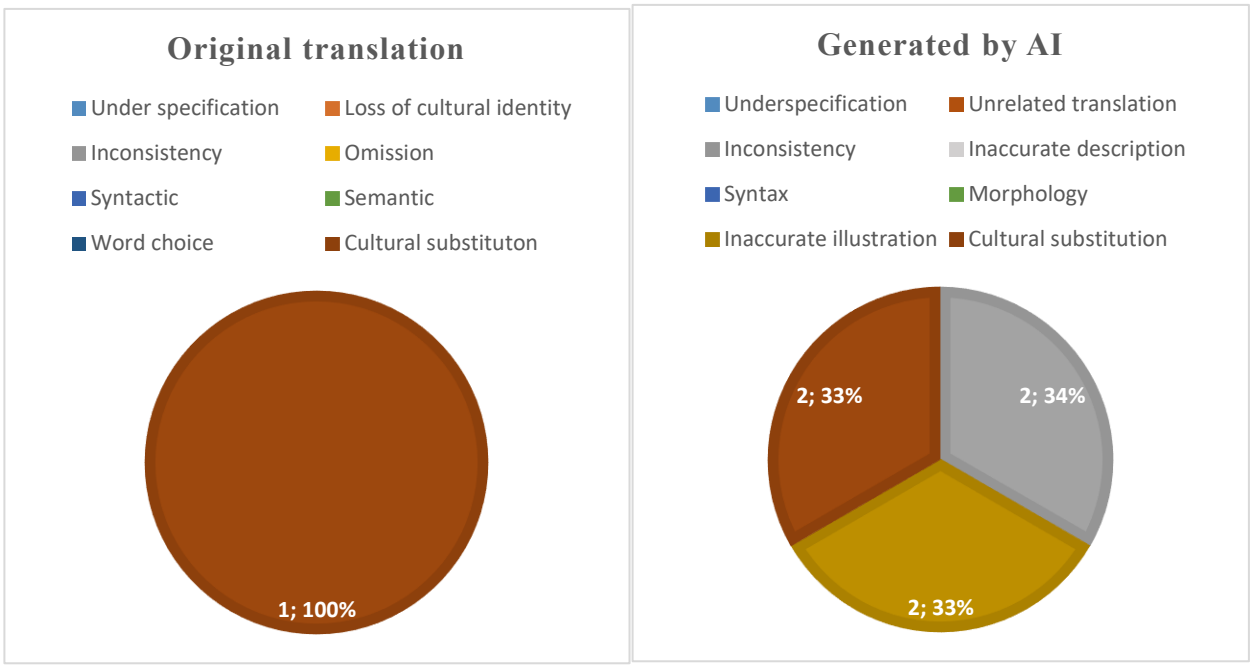

Fig. 13. Culture-specific beverage translation errors

Notably, in terms of traditional beverages, the original translations contain 1 error while AI generated translations contain 6 errors. As shown in figure 13, the traditional beverage category raises the least number of difficulties for human translators, since only one mistake is present in the restaurant menu translations. The mistake was made by translating the CSI *kefyras* as *buttermilk.* Likewise, traditional beverage category contains the least number of errors in AI generated translations as well. However, AI has made 6 mistakes, two of which were made by replacing *rūgpienis* and *kefyras* with a cultural substitute *buttermilk.* Moreover, four more mistakes were made by generating inaccurate results related to description and illustration, for example, visually illustrating *rūgpienis* as a product package containg rice, lentil and tomatoes.

Evidently, human translation is more reliable than AI generated translation in terms of the 30-food related culture-specific items. To illustrate, the original human translation consists of 154 items and 101 errors, whereas AI generated translation consists of 118 items and 135 errors. Moreover, cultural substitution and generalization are the most common translation strategies employed by both human translators and AI. However, as a result both humans and AI share the two most common error types which are underspecification and inaccurate cultural substitution. In regard of different CSI categories, human translators struggled most with meat dish CSIs while AI generated results were the least accurate regarding potato dish CSIs.

Conclusions

1. The technological advancements have greatly affected the role of a translator, as technology has been gradually incorporated into the process of translation. With the incorporation of technology, a concept of localization came to light, dealing with various cultural nuances, and software translations. Nowadays MT and AI are widely used tools for a variety of purposes, such as improving translation efficiency, quick interactions and overall communication, and knowledge seeking, which is especially relevant during travel. The relationship between globalisation, food and tourism can be linked to gastronomical tourism. Research on menu translation theory has shown that food-related CSIs are challenging to translate since they require sound cultural knowledge in both the source and target languages. Researching culture classification frameworks and literature related to globalisation and marginalization can provide a substantial amount of cultural knowledge. In addition, CSI translation requires understanding of various translation strategies which can be applied during the process. Moreover, the translators have to provide short, precise and informative translation of various dish names and determine the level of cultural preservation for each item. In cases where the translator disregards the cultural aspect of translation, the translation may contain insufficient information, inaccurate cultural substitutions, or incorrectly chosen and applied translation strategies which might result in loss of meaning. Thus, the inaccurate translation would inconvenience the customer and employees as well as negatively affect the reputation of the restaurant.
2. The restaurant menu CSI translation analysis revealed that, based on Pedersen's (2011) taxonomy, the most common strategies for CSI translation were cultural substitution and generalization. In contrast, such strategies as retention and omission were less frequent. However, the two instances where omission was applied in the translation process, were evidently unintentional since it resulted in either complete or partial loss of meaning. In total, there were 154 translation variations and 101 errors. Notably, frequently several errors were related to the same translation variation. Moreover, considering all 6 CSI categories, meat dish CSI translation was exceptionally problematic, since 39 errors, such as underspecification, semantic and syntactic errors were found in the 42 meat-related translation variations. In terms of translators' cultural knowledge, 33 errors were related to inaccurate cultural substitution choice, especially related to the reoccurring usage of *crackling* and *cottage cheese*. Furthermore, Bernelių Užeiga restaurant menu had the highest number of inconsistencies since a lot of the same CSIs were translated in several different ways.
3. The AI generated CSI translation analysis revealed that, based on Pedersen's (2011) taxonomy, the most common strategies for CSI translation were cultural substitution and generalization. In contrast, such strategies as direct translation and retention were less frequent. In total, there were 118 translation variations and 135 errors. Furthermore, there were 11 cases when artificial intelligence generated a completely unrelated translation, for example, translating *bulviniai blynai* as *bulgur salad* or *šiupininė sriuba* as *poppy seed soup*. Moreover, considering all three AI menu translation applications, MenuTranslator App displayed the highest level of CSI translation accuracy, with only 15 errors out of 36 translation variations. In contrast, MenuGuide application was the least accurate, as 92 errors were indicated in the 52 translation variations.
4. The comparative analysis of human and machine translation revealed that the most prominent translation strategies are cultural substitution and specification, while the most common errors are related to underspecification and inaccurate cultural substitution. Moreover, human translation of food related items is more reliable than AI generated translation since original human

translation consists of 154 items and 101 errors, whereas AI generated translation consists of 118 items and 135 errors.

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Appendices

Appendix 1. "Bernelių Užeiga" Menu

A list of relevant food items found in "Bernelių užeiga" restaurant menu (Retrieved 16-01-2025 from https://berneliuuzeiga.lt/product-category/kaunas/ and https://berneliuuzeiga.lt/product-category/vilnius/)

NO.	LT	EN
1.	Dainavos krašto grikių blynai: patiekiama su baravykų padažu ir keptais burokėliais	Dainava Land Buckwheat Pancakes with Wild Mushroom Sauce and Stewed Beetroot
2.	Čirviniai blynai su medumi ir avietėmis	Pancakes HEARTS with Honey And Raspberry Puree
3.	Balandėliai su virtomis bulvėmis	Minced Meat Stuffed and Stewed Cabbage Leaves: Served with Boiled Potatoes
4.	Bulviniai blynai (su miško grybų padažu; su grietinės padažu; su varškės ir žalumynų padažu)	Grated Potato Pancake Tower (with forest mushroom sauce; with sour cream sauce; with fresh cheese and herb sauce; with rocket leaves and chanterelle sauce)
5.	ŽEMAIČIŲ blynai: patiekiama su sviesto ir grietinės padažu	Boiled Potato Pancakes With Meat Stuffing: served with butter and sour cream sauce
6.	Apkepti didžkukuliai su mėsa: su spirgučiu padažu ir grietine	Fried grated potato dumplings stuffed with minced meat served with sour cream, fried onions and bacon
7.	Didžkukuliai: galite pasirinkti įdarą: mėsos arba varškės	Grated Potato Dumplings – Served with sour cream and fried with onions bacon pieces. You can choose the stuffing: meat or soft cheese.
8.	Kalakutienos kukuliai šakninių daržovių padaže: patiekiama su bulvių koše, marinuotais burokėliais ir raugintais agurkais	Turkey Meatballs Stewed in Cream and Root Vegetables: served with mashed potatoes, beetroot salad and pickled cucumbers.
9.	KARČEMOS vėdarai: patiekiama su spirgučių ir grietinės padažu	Baked Sausage Stuffed with Grated Potatoes
10.	Bulvių plokštainis su rūkyta karka	Grated Potato Bake with Smoked Pork Leg
11.	Švilpikai keptuvėlėje (su plėšyta vištiena ir voveraičių padažu; su miško grybų padažu, traškia šonine ir traškiais svogūnais; vegetarams rekomenduojame su voveraičių arba miško grybų padažu)	Baked boiled potato cakes (with fried chicken and chanterelle sauce)
12.	Firminiai „Bernelių užeigos" koldūnai su kiauliena	Handmade Pork Stuffed Dumplings – served with mushroom sauce or sour cream and bacon sauce
13.	GASPADORIAUS VAIŠĖS: Gaspadinė virė, kepė, gaspadorius svečius užprašė... didžkukulis, vėdarai, bulviniai blynai, virtos bulvės, troškinti kopūstai, keptos dešrelės, rūkyta karkutė, rauginti agurkai, spirgučiai, grietinė, kepsnių padažas	Farmer's feast: Minced meat stuffed grated potato dumpling, grated potato stuffed baked sausage, grated potato pancakes, potatoe wedges stewed cabbages, grilled smokes sausages, smoked pork shank, pickled cucumbers, fried bacon sauce, barbeque sauce and sour cream sauce.
14.	„Tiškevičių" koldūnai su žvėriena ir džiovintais baravykais – patiekiami su miško grybų padažu arba grietine ir spirgučiais	Handmade Venison and Dried Mushroom Ravioli – served with mushroom sauce or sour cream and bacon sauce
15.	Lietuviški barščiai su šilbaravykiais	Lithuanian Beetroot Soup with Wild Mushrooms
16.	Aštri PERKŪNO sriuba	Hot meat soup
17.	Šaltibarščiai	Cold Beetroot soup
18.	Raugintų kopūstų sriuba su rūkytais šonkauliukais	Sauerkraut Soup with Smoked Pork Sparerib

19.	Firminė baravykienė su rūkyta šonine	Wild Mushroom Soup in Brown Bread Loaf with Smoked Bacon
20.	Kaimiškai paruoštas silkių užkandis su šiltomis bulvėmis	Herring with boiled potatoes
21.	Silkių filė su keptais baravykais, karamelizuotais svogūnais ir moliūgų sėklomis	Herring with fried porcini mushrooms, caramelised onions and toasted pumpkin seeds
22.	Smetoniškai paruoštas triušienos troškinys: Triušienos, marinuotos su žolelėmis, daržovių ir grietinėlės troškinys „špižinėje“ (ketaus) puodynėlėje su bulvių koše ir keptais burokėliais	Rabbit Stew: Herb marinated rabbit, pot stewed with cream and vegetables. Served with mashed potatoes and fried beetroot
23.	Legendinis Kauno senamiesčio GILDIJOS kepsnys: Jautienos išpjovos kepsnys su puria sūrio ir moliūgų sėklų kepurėle, patiekiamas su bulvių kroketais ir lietuviškomis vasaros salotomis (salotų lapų, ridikėlių ir svogūnų laiškų, paskanintomis grietine)	Legendary Kaunas Old Town Beef Fillet Steak under Soft Cheese and Pumpkin Seed Blanket: Served with potato croquets and traditional Lithuanian summer salad (lettuce, radishes and spring onions dressed with sour cream)
24.	MAMOS kotletas su šilbaravykių padažu: Patiekiama su marinuotais burokėliais ir bulvių koše	Pork Cutlet in Wild Mushroom Sauce Served with Mashed Potatoes and Pickled Beetroot
25.	Tikras lietuviškas karbonadas: Patiekiama su šilbaravykių padažu, gruzdintomis bulvytėmis ir šviežiomis daržovėmis	Pork Loin Schnitzel: Served with chips, wild mushroom sauce and fresh vegetable salad
26.	Skrudinta rūkyta karka su kepsnių padažu, ant iešmo: Rekomenduojama 2-4 asmenims. Patiekiama su keptomis bulvėmis, dviejų rūšių padažais (krienų ir kepsnių), šviežių ir marinuotų daržovių asorti	Pork Shank Glazed with Barbecue Sauce. Served on Spit. Recommended for 2-4 Persons. Served with fried potatoes, two sort of sauces (horseradish and barbecue) and assortment of fresh and marinated vegetables
27.	Žirniai su spirgučiais	Peas with Fried Bacon
28.	Skrudinta duona su sūriu	Deep Fried Brown Bread Sticks With Cheese
29.	Šilta gruzdinta duona su sūrio padažu	Warm Deep Fried Brown Bread Sticks with Mayonnaise and Garlic Dressing

Appendix 2. "Etno Dvaras" Menu

A list of relevant food items found in "Etno dvaras" restaurant menu (Retrieved 16-01-2025 from https://etnodvaras.lt/valgiarastis/ and https://etnodvaras.lt/en/valgiarastis/)

NO.	LT	EN
1.	Didžkukuliai (apkepti; įdaryti mėsa, su grietine; **tradiciniai**, įdaryti mėsa; **kaimiški**, įdaryti mėsa; **dzūkiški,** įdaryti mėsa; **žemaitiški**, įdaryti mėsa; **dvarininkų,** įdaryti mėsa; **kupiškėnų,** įdaryti mėsa; **vaikaičio,** įdaryti varške; **uošvės,** įdaryti varške; **šeimininkų**, įdaryti varške; **žento,** įdaryti varške; **marčios,** įdaryti varške; didžkukulių puodynė)	Potato dumplings (fried; with meat; **TRADITIONAL**, meat stuffed; **COUNTRY** style with meat; **DZŪKIJA** style, meat-stuffed; **SAMOGITIAN** style, meat-stuffed; **LANDLORDS'** style, meat-stuffed; **KUPIŠKĖNAI** style, meat-stuffed; **GRANDSON'S** style, curd-stuffed; **MOTHER'S-IN-LAW** style, curd-stuffed; **HOSTS'** style, curd-stuffed; **SON'S-IN-LAW** style, curd-stuffed; **DAUGHTER'S-IN-LAW** style, curd-stuffed; a bowl of potato dumplings)
2.	Užkandžiai prie alaus – sūdyti lašiniai, rūkyta šoninė, sūrių rinkinys, mėlynieji svogūnai, sezoniniai agurkai	Beer snacks set – salted peck, smoked bacon, assorted cheese, red onions;
3.	PONO VAIŠĖS – krosnyje kepta parūkyta karka, gruzdinti vištienos gabalėliai, kepta kiaulienos šoninė, skrudinti šoninės kąsneliai, žirniai su spirgučiais, keptas varškės sūris, daržovių rinkinys.	Landlord's feast – ovenbaked, lightly smoked pork shank, deep-fried chicken pieces, roast bacon, fried bacon bits, peas with crackling, fried curd cheese, and a plate of vegetables.
4.	Silkių užkandis – su karštomis bulvėmis, mėlynaisiais svogūnais, daržovėmis ir grietine	Herring snack – Atlantic herring fillet, hot potatoes, boiled egg, tomatoes, blue onions, and sour cream.
5.	Kepintos duonos lazdelės su sūrio padažu	Fried breadsticks with cheese dip
6.	Žirniai su spirgučiais	Peas with cracklings
7.	Kastinys su karšta bulve	KASTINYS (sour cream butter) served with hot potato
8.	Silkių sluoksninys (silkė pataluose) – silkių filė patiekiama virtų burokėlių, bulvių, žaliųjų žirnelių, mėlynųjų svogūnų, majonezo ir kiaušinių „pataluose'	Layered herring – Herring fillet served with layered dressing of cooked red beetroots, potatoes, green peas, red onions, mayonnaise and eggs.
9.	Kaimiška kiaušinienė – keptuvėje su rūkyta šonine kepti kiaušiniai, pomidorai, agurkai, mėlynieji svogūnai ir pomidorų padažas.	Rustic style scrambled eggs – Scrumbled eggs with fried smoked bacon, tomatoes, cucumbers, red onions and tomato sauce
10.	Šaltibarščiai	Cold beetroot soup
11.	Burokėlių sriuba – su miško grybais ir mėsos gabaliukais	Beetroot soup – with wild mushrooms and slices of meat
12.	Raugintų kopūstų sriuba – su kiaulienos šonkauliuku	Sauerkraut soup with pork rib
13.	Miško grybų tirštasriubė – patiekiama duonos kubilėlyje su šoninės gabaliukais	ick wild mushroom soup – Served in a bread loaf bowl with bacon bits

14.	Kepto varškės sūrio salotos – keptas lietuviškas varškės sūris pomidorai, agurkai, mėlynieji svogūnai, saulėgrąžos, salotų lapai, medaus ir aliejaus padažas;	Fried curd cheese salad – Fried Lithuanian curd cheese, tomatoes, cucumbers, blue onions, sunflowers, lettuce leaves, honey and oil sauce.
15.	Naminė dešros ringė – restorano meistrų rankomis pagaminta kepta kiaulienos dešrelė su bulvių koše, krienų padažu, kopūstų salotomis ir sezoniniais agurkais;	Homemade sausage twist – Fried pork sausages, handmade by the chefs of the restaurant, with mashed potatoes, horseradish sauce, and seasonal cucumbers
16.	„Močiutės“ maltiniai – su burokėlių salotomis, sezoniniais agurkais, bulvių koše arba keptomis bulvių skiltelėmis ir baltuoju padažu;	GRANDMA‘S rissole – served with beetroot, seasonal cucumbers, white sauce, and mashed potatoes or roasted potato wedges
17.	Kepta karka – krosnyje apkepta lėto virimo karka, siūlome su kopūstų salotomis, marinuotais agurkais, krienų padažu ir bulvių koše.	Baked pork hock – slow long cooked and fried pork hock served with cabbage salad, pickles, horseradish sauce and mashed potatoes
18.	Kraujiniai vėdarai – su grietine arba su spirgučių padažu bei grietine	Blood pudding – with sour cream or cracklingand-sour cream sauce
19.	Šoninės kepsnys su krienais – bulvių košė, kopūstai ir burokėlių salotos	Roast bacon with horseradish sauce – served with mashed potatoes, grated cabbage and beetroot slices
20.	Bulviniai blynai (su sūdyta lašiša, su grybų padažu, su šonine; su bruknių uogiene; su virta kiaulės ausimi; su varškės padažu)	Potato pancakes – grated potato pancakes (with salted salmon, with mushroom sauce, with bacon; with cowberry jam; with boiled pig‘s ear; with curd sauce)
21.	Bulviniai vėdarai – su įmalta kiauliena, su spirgučių padažu, grietine ar tradiciniu spirgučių ir grietinė padažu	Potato sausage – with minced pork, crackling sauce, sour cream or traditional cracklingand-sour cream sauce
22.	Bulvių plokštainis – su įmalta šonine. Siūlome su grietine.	Potato pudding – with minced bacon. Recommended with sour cream.
23.	Bulviniai blynai su mėsa – su spirgučių padažu, grietine ar tradiciniu spirgučių ir grietinės padažu	Pancakes with meat – with crackling sauce, sour cream or traditional crackling-and-sour cream sauce.
24.	Varškės virtinukai – su sviesto ir grietinės arba saldžiuoju padažu	Curd dumplings – Served with butter and sour cream, or with a sweet gravy.
25.	TRADICINIAI RANKŲ DARBO VIRTI KOLDŪNAI SU MĖSA – su spirgučių padažu, spirgučių padažu bei grietine arba tik grietine.	Traditional homemade meat dumplings – with crackling, crackling-and-sour cream or sour cream sauce
26.	MEDAUS, VARŠKĖS SŪRIO IR ŠVIEŽIŲ AGURKŲ RAGAUTUVĖS – natūralus lietuviškas medus, šviežias varškės sūris, švieži agurkai;	Tasting set; curd cheese and fresh cucumbers with honey – Natural Lithuanian honey, fresh curd cheese, fresh cucumbers.
27.	NAMINĖS SPURGYTĖS – tradicinės varškės spurgytės su šviežiai trintomis braškėmis	Homemade doughnuts – Traditional curd doughnuts with freshly mashed strawberries
28.	Tinginio skanėstas – tinginio skanėstas, sudėtyje yra riešutų	Traditional IDLER‘S dainty
29.	DVARO PYRAGAS – teiraukitės jus aptarnaujančio padavėjo	DVARO cake – ask your waiter please.

30.	Blyneliai su varškės įdaru – su grietine ir trintomis braškėmis	Crepes with curd – with sourcream and strawberry sauce

Appendix 3. “HBH Palanga” Menu

A list of relevant food items found in “HBH Palanga” restaurant menu (Retrieved 31-03-2025 from http://www.hbh.lt/gallery/meniu-2024.pdf)

NO.	LT	EN
1.	Rados virtuvės gira	Kvass
2.	Varškėtukai kaimiški	Village curd dumplings
3.	Silkė su karštomis bulvėmis (silkė, burokėliai, marinuoti svogūnai, grietinė)	Pickled herring (beetroot, pickled onion, boiled potatoes, sour cream)
4.	Žemaitiška užkanda (silkė, kastinys, bulvės, spirginės dažinys)	Samogitian snack (herring, sour cream butter, potato, hemp-flax seed salt)
5.	Žemaičių kastinys su bulvike ir spirginės dažiniu	Sour cream butter “kastinys” with potato
6.	Kepinta duonelė su česnaku	Crispy fried bread battonets with garlic
7.	Rūkytos auselės	Smoked pork ears
8.	HBH duona su sūriu (duona, sūris, majonezas, česnakai)	HBH fried bread with cheese (deep fried bread, cheese, mayonnaise, garlic)
9.	Žirniai su kresnikėm	Boiled yellow peas wih cracklings
10.	Legendinė balta mišrainė (virtos daržovės, kumpis, majonezas)	White salad (boiled vegetables, ham, mayonnaise)
11.	Šaltibarščiai	Holodnik (Cold red beet soup)
12.	Karka – rūkyta kiaulės šlaunis (daržovės, troškinti rauginti kopūstai, pupelės, krienai)	Smoked shank (Sides, braised sauerkraut, white beans, horseradish)
13.	Lietuviškas karbonadas (kiaulienos nugarinė, daržovės, gruzdės)	Steak “Lithuanian” (Pan fried pork loin, sides, potato fries)
14.	Močiutės kotletai (daržovės, bulvių košė, bešamelio padažas su svogūnais)	Grandma’s meatballs (sides, mashed potatoes, cream of onion sauce)
15.	Cepelinai (su grietine ir spirgučiais)	Zeppelins with sour cream and cracklings (meat filled grated potato dumplings)
16.	Vakarykščiai cepelinai (apkeptos puselės, grietinė, spirgučiai)	Yesterday’s zeppelins (pan fried halves, sour cream, cracklings)
17.	Virtų bulvių cepelinai (su varške arba mesa, sviesto-grietinės padažas)	Silky zeppelins with cream sauce (meat or curd filled, made from mashed potatotes)
18.	Studentiškas valgis (stambiai tarkuotų bulvių plokštainis su rūkyta ausimi, spirgučių padažas)	Student’s meal with crackling gravy (grated potato pancake smoked pork ears)
19.	Bočiaus kugelis (su grietine ir spirgučiais)	Grandpa’s grated potato cake (with sour cream with cracklings)
20.	Tarkiniai blynai su mėsa ir grietine	Grated potato pancakes with meat and sour cream
21.	Tarkiniai blynai (su grietine arba varškės česnakiniu padažu pasirinktinai* Arba su sūdyta lašiša ir česnakine varške**)	Potato pancakes (with cured salmon** and garlic curd*)
22.	Žemaičių blynai su sviesto ir grietinės padažu	Samogitian meat pancakes of boiled potatoes with cream sauce
23.	Bulviniai bobutės arba kaimiški kraujiniai vėdarai su grietine ir spirgučiais	Potato sausage with sour cream and cracklings
24.	Šakotis	Bankuchen

25.	Kefyro ar pieno stiklinė	A glass of buttermilk or milk
26.	Miško karalienė (Natūralus spanguolių kisielius)	Queen of the woods (natural cranberry kisiel)

Appendix 4. “Agotos Gryčia” Menu

A list of relevant food items found in “Agotos gryčia“ restaurant menu (Retrieved 31-03-2025 from https://agotosgrycia.lt/meniu/#section-ppal-menu and https://agotosgrycia.lt/en/menu/)

NO.	LT	EN
1.	Lietuviškos salotos (bulvės, morkos, kiaušiniai, žirneliai, marinuoti agurkai, kumpio gabaliukai, majonezas)	Lithuanian salad (potatoes, castors, eggs, peas, pickles, ham, and mayonnaise)
2.	Gruzdinti duonos piršteliai (sūris, majonezas, česnakinė druska)	Hot fried bread (bread, cheese, mayonnaise and garlic salt)
3.	Žemaičių cepelinai (keptos, virtos bulvės, vištiena, grybų padažas)	Žemaičių dumplings
4.	Agotos cepelinas kitaip (supjaustytas ir apkeptas)	Agotos dumpling otherwise (sliced and baked potatoes dumpling with meat)
5.	Šaltibarščiai su bulvėmis	Šaltibarščiai (traditional cold beetroots soup with hot potatoes)
6.	Agotos cepelinas	Agotos dumpling
7.	Barščiai	Borsch
8.	Kaimiški vėdarai	Kaimiški vėdarai (traditional Lithuanian dish, entrails sniffed with potatoes, oven-baked)
9.	Žemaičių blynai (virtos bulvės, vištiena, grietinės ir sviesto padažas)	Žemaičių potato pancakes (boiled potatoes, chicken and sour-cream-butter sauce)
10.	Cepelinai su varške	Dumpling with curd
11.	Dvarininko blynai (tarkuotos bulvės, svogūnai, varškės, krapų ir grietinės padažas)	Dvarininko potato pancakes (grind potatoes, onions and curd-dill-soot weans sauce)
12.	Bulviniai blynai	Potato pancakes
13.	„Bobutės“ karbonadas (kiaulienos nugarinė, šviežios daržovės, garnyras pasirinktinai)	Bobutė roast (pork filet, vegetables, and side dish of your choice)
14.	„Senelės“ maltinis su grybų padažu (kiauliena, jautiena, grybų padažas, šviežios daržovės, garnyras pasirinktinai)	Senelės balls (pork, beef, white sauce, vegetables and side dish of your choice)
15.	Karka (karka, troškinti rauginti kopūstai, bulvės su lupenomis)	Karka (pork’s shank, jacket potatoes, steamed – pickled cabbages)
16.	Kepti varškėčiai	Varškėčiai (toasted curd pancakes)
17.	Skrudinti naminiai koldūnai	Home made ravioli with meat (roasted)
18.	Naminiai koldūnai	Home made ravioli with meat (boiled)
19.	Rūgpienis	Clabber
20.	Kompotas	Compote
21.	Kaimiška duonos gira	Country made kvass

Appendix 5. “Katpedėlė” Menu

A list of relevant food items found in “Katpedėlė“ restaurant menu (Retrieved 31-03-2025 from https://www.katpedele.lt/shop/products?currency=undefined&language=en and https://www.katpedele.lt/shop/products?currency=undefined&language=lt)

NO.	LT	EN
1.	Varškėtukai (patiekima su grietine, milteliniu cukrumi, avietėmis, braškių padažu.	Fried cottage cheese pancakes (Served with sour cream, powdered sugar, raspberries, strawberry sauce)
2.	Lietiniai su varške (Lietiniai su varškės kremu. Patiekiami su spanguolių uogomis, milteliniu cukrumi, čiobreliais ir pasirinktu padažu: grietinės, trintų braškių, miško uogų, karamelės, šaltalankių)	Curd crepes (Crepes with cottage cheese cream. Served with cranberries, powdered sugar, thyme and your choice of sauce: sour cream, mashed strawberries, wild berries, caramel, sea buckthorn)
3.	Lietiniai su kumpiu ir sūriu (Lietiniai, fermentinis sūris, virtas kumpis. Patiekiama su salotų lapais, šviežiomis daržovėmis ir grietine)	Ham and cheese crepes (Crepes fermented cheese, boiled ham. Served with salad leaves, fresh vegetables and sour cream)
4.	Lietuviška mišrainė (salotų lapai, bulvės, morkos, konservuoti agurkai, žirneliai, virtas kumpis, virtas kiaušinis, majonezas)	Lithuanian salad (Lettuce, potatoes, carrots, pickled cucumbers, green peas, boiled ham, boiled egg, mayonnaise)
5.	Barščiai (bulvės, burokėliai, svogūnai, morkos, rūkytų kiaulių ausų gabaliukai. Patiekiama su rugine duona su saulėgrąžomis, lašiniais ir grietine)	Borstch (Potatoes, beets, onions, carrots, pieces of smoked pig’s ears. Served with sunflower rye bread, bacon and sour cream)
6.	Šaltibarščiai su bulvėmis (Patiekiama su virtomis ar apkeptomis mažomis bulvytėmis)	Cold beetroot soup with potatoes (Served with boiled or roasted baby potatoes)
7.	Aštri šiupininė sriuba (Vištienos filė gabaliukai, parūkytų dešrelių gabaliukai, šoninės gabaliukai, konservuoti agurkai, svogūnai, juodosios alyvuogės, česnakai. Patiekiama su grietine.	Hot hotchpotch soup (Pieces of chicken fillet, slices of smoked sausages, pieces of bacon, pickled cucumbers, onions, black olives, garlic. Served with sour cream)
8.	Žirniai su spirgučiais (Virti žirniai su spirgučių ir svogūnų padažu. Patiekiama su gruzdintos šoninės gabaliukais ir svogūnų laiškais)	Peas with cracklings (Boiled peas with crackling and onion sauce. Served with fried bacon slices and spring onions)
9.	Kepinta duona su sūriu ir majonezu (Patiekiama su sūrio padažu ir rūkyta šonine)	Fried bread with cheese and mayonnaise (Served with cheese sauce and smoked bacon)
10.	Apkepti koldūnai su mėsa (Apkepti koldūnai su mėsa, padažas pasirinktinai: svogūnų ir kumpio arba pievagrybių)	Fried meat dumplings (Fried meat dumplings. Sauce upon choice: ham and onion or champignon)
11.	Lietuviškas karbonadas (Džiūvesėliuose pavoliota kepta kiaulienos nugarinė. Su pasirinktais garnyrais ir padažu. Rekomenduojama su pievagrybių padažu)	Lithuanian pork chop (Roasted breaded pork loin. Side dishes and sauce upon choice. Champignon sauce recommended)
12.	Traški karkutė (Rekomenduojama su bulvių koše, troškintais kopūstais, krienų padažu)	Crispy shank (Recommended with mashed potatoes, braised sauerkraut, horseradish sauce)

13.	Balandėliai (Patiekiama su daržovių padažu ir bulvių koše arba virtomis mažomis bulvytėmis)	Stuffed cabbage rolls (Served with vegetable sauce and mashed potatoes or boiled baby potatoes)
14.	Lietuvišku patiekalų rinkinys (3-4 asmenims) (Kiaulienos sprandinė, kiaulienos dešrelė su kmynais, apkepti didžkukuliai, bulviniai blynai, žemaičių blynas, vėdarai su šonine, mažosios virtos bulvytės, marinuoti pomidorai, marinuoti agurkai, troškinti rauginti kopūstai, raugintų kopūstų salotos, svogūnų laiškai. Patiekiama su grietine, spirgučių padažu ir adžikos padažu)	A set of Lithuanian dishes (For 3-4 people) (Pork neck, pork sausage, fried potato dumplings, potato pancakes, Samogitian pancake, potato sausages with bacon, small boiled potatoes, pickled tomatoes, pickled cucumbers, stewed sauerkraut, sauerkraut salad, onion leaves. Served with greaves, sour cream, and adjika sauce)
15.	Bulvių pokštainis su karka (Patiekiama su grietine)	Potato pudding with shan (Served with sour cream)
16.	Didžkukuliai su mėsa (Patiekiama su spirgučiais ir grietine arba pievagrybių padažu)	Potato dumplings with meat (Served with cracklings and sour cream or champignon sauce)
17.	Apkepti didžkukuliai (Patiekiama su spirgučiai ir grietine arba pievagrybių padažu)	Fried potato dumplings (Served with cracklings and sour cream or champignon sauce)
18.	Bulviniai blynai (Patiekiama su spirgučiais ir grietine arba pievagrybių padažu)	Potato pancakes (Served with cracklings and sour cream or champignon sauce)
19.	Vėdarai su šonine (Patiekiama su spirgučiais ir grietine arba pievagrybių padažu)	Potato sausages with bacon (Served with greaves and sour cream or champignon sauce)
20.	Bulviniai blynai su lašiša ir varškės padažu (Patiekiama su varškės kremu, marinuotais kelmučiais)	Potato pancakes with salmon and curd sauce (Served with curd cream or pickled honey mushrooms)
21.	Žemaičių blynai (Patiekiama su spirgučiais ir grietine, sviesto ir grietinės arba pievagrybių padažu)	Samogitian pancakes (Served with cracklings and sour cream, butter, and sour cream or champignon sauce)
22.	Gruzdinti švilpikai (Patiekiama su spirgučių padažu, grietine ir gruzdinta šonine)	Fried potato “Marmots” (Served with crackling sauce, sour cream and fried bacon)
23.	Lietiniai blyneliai (patiekiami su braškių padažu, cukraus pudra, šviežiomis uogomis)	Crepes (Served with strawberry sauce, powdered sugar, fresh berries)
24.	Mamos maltinukas (Patiekiamas su agurkų šiaudeliais, grietinės sviesto padažu ir pasirinktu garnyru)	Mother’s meatball (Served with cucumber straws, sour cream-butter sauce and a side dish upon choice)
25.	Kefyras	Kefir
26.	Naminė lietuviška gira	Homemade Lithuanian bread kvass

Appendix 6. Culture-specific item glossary

A compiled glossary of relevant culture-specific tiems presented in different restaurant menus.

The dashes signify that there is no translation for the item since the dish is not served in the restaurant. The numbers alongside the translated items indicate the corresponding number in appendices 1-5. The appendices illustrate the complete context in which the dish names appear in (i.e., what kind of garnishes are served with the dish). Each bracket indicates where and how many times the same dish name is used and repeated (e.g. (5),(10),(11) – three times in the 5,10, and 11 row).

No.	Item	Bernelių užeiga (BU) Appendix 1	Etno dvaras (ED) Appendix 2	HBH Palanga (HBH) Appendix 3	Agotos Gryčia (AG) Appendix 4	Katpedėlė (K) Appendix 5
1.	Balandėliai	Minced meat stuffed and stewed cabbage leaves (3)	-	-	-	Stuffed cabbage rolls (13)
2.	Bulviniai blynai	Grated potato pancakes (4) (13)	Grated potato pancakes (20)	Grated potato pancakes (20) Potato pancakes (21)	Potato pancakes (11) (12)	Potato pancakes (14) (18) (20)
3.	Žemaičių blynai; Bulviniai blynai su mėsa	Boiled potato pancakes with meat stuffing (5)	Pancakes with meat (23)	Samogitian meat pancakes of boiled potatoes (22)	Žemaičių potato pancakes (9)	Samogitian pancake (14) (21)
4.	Koldūnai, virtinukai	Dumplings (12); Ravioli (14);	Dumplings (24) (25)	-	Ravioli (17) (18)	Dumpling (10)
5.	Didžkukuliai, cepelinai	Grated potato dumplings (7) (8) (13)	Potato dumplings (1)	Zeppelins (15) (16) (17)	Dumplings (3) (4) (6) (10)	Potato dumpling (14) (16) (17)
6.	Vėdarai	Baked sausage stuffed with grated potatoes (9); Grated potato stuffed baked sausage (13);	Potato sausage (21)	Potato sausage (23)	Vėdarai (traditional Lithuanian dish, entrails sniffed with potatoes, oven-baked) (8)	Potato sausage (14) (19)
7.	Kraujiniai vėdarai	-	Blood pudding (18)	Potato sausage (23)	-	-
8.	Bulvių plokštainis	Grated potato bake (10);	Potato pudding (22);	Grated potato cake (19)	-	Potato pudding (15)
9.	Karka	Pork leg (10); Pork shank (13) (26)	Pork hock (17)	Smoked shank (12)	Karka (pork's shank) (15)	Shank (12) Shan (15)
10.	Švilpikai	Baked boiled potato cakes (11)	-	-	-	Fried potato "marmots" (22)

11.	Spirgučiai	Fried onions and bacon (6); fried bacon sauce (13) (14) fried bacon (27)	Crackling (3) (6) (18) (21) (23) (25)	Crackling (9) (15) (18) (23)	-	Crackling (8) (16) (17) (18) (21) (22) Greaves (14) (19)
12.	Barščiai	Lithuanian beetroot soup (15);	Beetroot soup (11)	-	Borsch (7)	Borstch (5)
13.	Šaltibarščiai	Cold beetroot soup (17);	Cold beetroot soup (10)	Holodnik (Cold red beet soup) (11);	Šaltibarščiai (traditional cold beetroot soup) (5)	Cold beetroot soup (6)
14.	Kotletai, maltiniai	Cutlet (24)	Rissole (16)	Meatballs (14)	Balls (14)	Meatball (24)
15.	Karbonadas; Lietuviškas karbonadas	Pork loin schnitzel (25)	-	Steak "Lithuanian" (pan fried pork loin) (13)	Bobutė roast (pork filet) (13)	Lithuanian pork chop (roasted breaded pork loin) (11)
16.	Varškė	Fresh cheese (4); soft cheese (7)	Curd (1) (3) (14) (20) (24) (26) (27)	Curd (2) (17) (21)	Curd (10) (16)	Curd (2) (20) cottage cheese (1)
17.	Varškėčiai	-	Curd dumplings (24)	Curd dumplings (2)	Varškėčiai (Toasted curd pancakes) (16)	Fried cottage cheese pancakes (1)
18.	Kastinys	-	Kastinys (sour cream butter) (7)	Sour cream butter (4); Sour cream butter "Kastinys" (5)	-	-
19.	Tinginys	-	Traditional idler's dainty (28)	-	-	-
20.	Sūdyti lašiniai	-	Salted peck (2)	-	-	-
21.	Kepta duona su sūriu / padažu	Deep fried brown bread stick with cheese (28) Warm deep fried brown bread sticks with mayonnaise and garlic dressing (29)	Fried breadsticks with cheese dip (5)	Crispy fried bread battonets with garlic (6); Fried bread with cheese (8)	Hot fried bread (2)	Fried bread with cheese and mayonnaise (9)
22.	Gira	-	-	Kvass (1)	Kvass (21)	Bread kvass (26)
23.	Rūgpienis	-	-	-	Clabber (19)	-
24.	Kefyras	-	-	Buttermilk (25)	-	-
25.	Kisielius	-	-	Kisiel (26)		

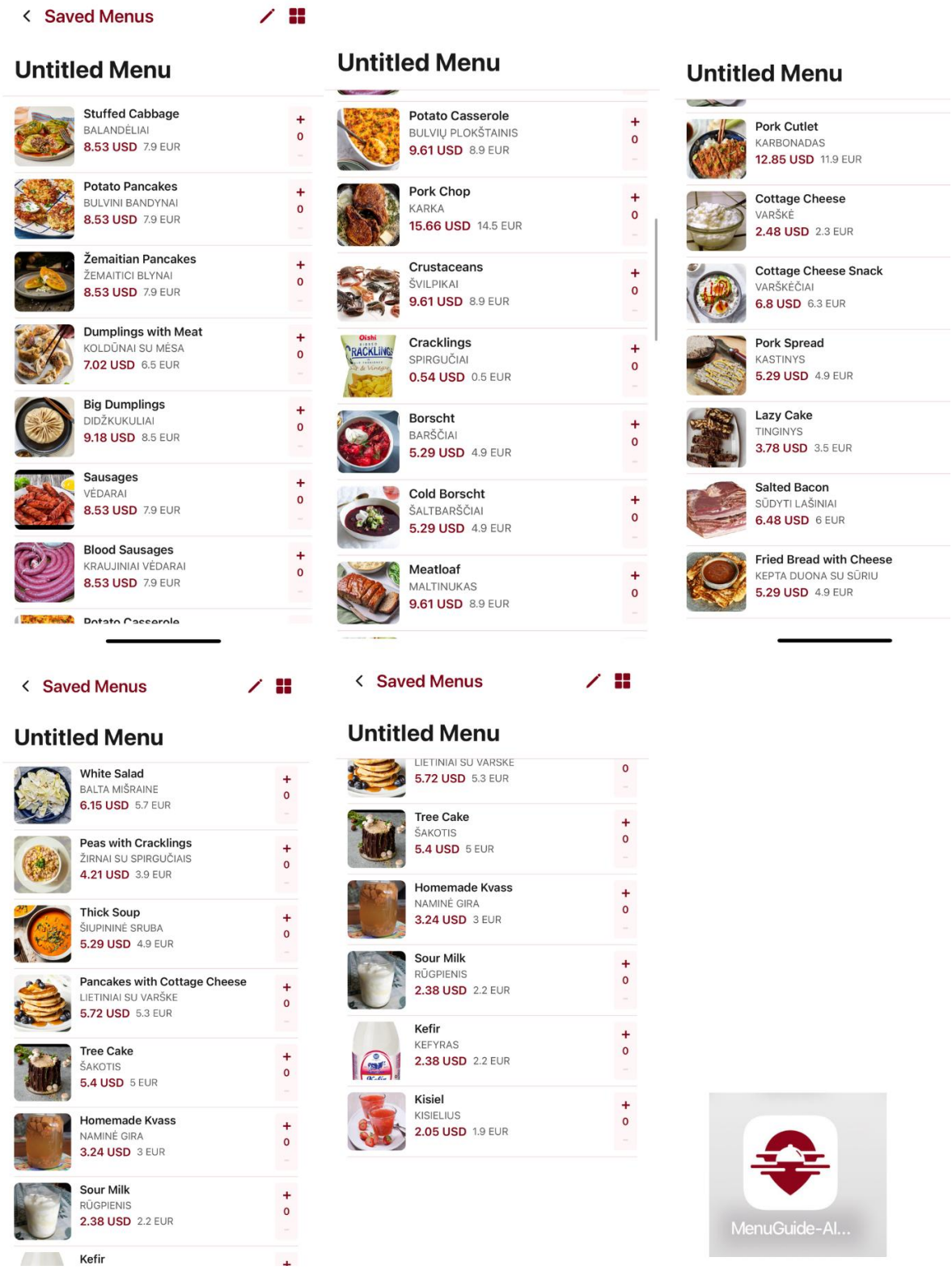
26.	Balta mišrainė	-	-	White salad (10)	Lithuanian salad (1)	Lithuanian salad (4)
27.	Žirniai su spirgučiais	Peas with fried bacon (27)	Peas with cracklings (6)	Boiled yellow peas with cracklings (9)	-	Peas with cracklings (8)
28.	Šakotis	-	-	Bankuchen (24)	-	-
29.	Lietiniai	-	Crepes (30)	-	-	Crepes (2) (3) (23)
30.	Šiupininė sriuba	-	-	-	-	Hotchpotch soup (7)

Appendix 7. Synthetic Menu for AI tool evaluation

A synthetic menu of all culture-specific items which are analyzed in this paper. The menu is created on a graphic design platfrom called “Canva” and is used in the analysis of menu translator tools.

Appendix 8. “MenuGuide” generated translation

These translation results were generated after uploading a synthetic menu from Appendix 7 to MenuGuide (version 1.0.20).



Stuffed Cabbage Rolls

BALANDĖLIAI

Balandėlės are traditional stuffed cabbage rolls filled with a mixture of minced meat, rice, and spices, wrapped in cabbage leaves, then cooked in a flavorful tomato sauce. This dish is hearty, comforting, and often served with sour cream.

Allergens:

Cabbage, Meat, Rice, Tomato, Gluten (if bread is included)

Calories: 250 kcal

10 g	30 g	4 g	18 g
Fats	Carbs	Fiber	Proteins

Dumplings with Meat

KOLDŪNAI SU MĖSA

Koldūnai su mėsa is a traditional Lithuanian dish featuring dumplings filled with seasoned meat, often served with sour cream or sauce. These delicate dumplings are a comforting choice that showcases the hearty flavors of Lithuanian cuisine.

Allergens:

Wheat, Gluten, Dairy

Calories: 350 kcal

15 g	40 g	3 g	20 g
Fats	Carbs	Fiber	Proteins

Bulgur Salad

BULVINI BANDYNAI

Bulgur salad is a nutritious dish made with cooked bulgur wheat, vegetables, herbs, and often enriched with olive oil and lemon juice. It is light, refreshing, and packed with flavors, making it a perfect accompaniment to various meals or a wholesome stand-alone dish.

Allergens:

Gluten

Calories: 180 kcal

5 g	30 g	7 g	6 g
Fats	Carbs	Fiber	Proteins

Šiauliai Potato Pancakes

ŽEMAITICI BLYNAI

Žemaitiški blynai are traditional Lithuanian potato pancakes made with grated potatoes, onions, and flour, then pan-fried until golden and crispy. They are often served with sour cream or applesauce, offering a hearty and flavorful dish that is beloved in Lithuanian cuisine.

Allergens:

Potatoes, Gluten, Dairy

Calories: 250 kcal

10 g	40 g	3 g	4 g
Fats	Carbs	Fiber	Proteins

Potato Dumplings

DIDŽKUKULIAI

Didžkukuliai are traditional Lithuanian potato dumplings filled with meat, served with sour cream or fried onions. These hearty dumplings are often enjoyed as a main dish or side and are known for their flavorful and comforting nature.

Allergens:

Gluten, Dairy, Potatoes, Meat

Calories: 350 kcal

8 g	60 g	4 g	10 g
Fats	Carbs	Fiber	Proteins

Potato Pancakes

BULVIŲ PLOKŠTAINIS

Potato pancakes are a traditional dish made from grated potatoes, often mixed with onions and spices, then fried until crispy. They are golden brown and crunchy on the outside, while soft and flavorful on the inside. A hearty dish, perfect for any meal.

Allergens:

Gluten, Dairy, Eggs

Calories: 320 kcal

15 g	45 g	4 g	5 g
Fats	Carbs	Fiber	Proteins

Blood Sausages

VĖDARAI

VĖDARAI, or blood sausages, are traditional Lithuanian sausages made from pig's blood, barley, and spices, often served grilled or fried. These savory sausages are a beloved delicacy, commonly enjoyed with potatoes and pickles.

Allergens:

Pork, Barley, Gluten

Calories: 250 kcal

18 g	15 g	1 g	12 g
Fats	Carbs	Fiber	Proteins

Blood Sausage

KRAUJINIAI VĖDARAI

Kraujiniai vėdarai, or blood sausages, are traditional Lithuanian sausages made from pig's blood, barley, and various spices. They are often served with sides such as potatoes or sauerkraut, making for a hearty and flavorful meal.

Allergens:

Gluten, Pork, Soy

Calories: 300 kcal

18 g	25 g	3 g	20 g
Fats	Carbs	Fiber	Proteins

KARKA

KARKA

Karka is a traditional dish known for its tender meat and rich flavor, often prepared with a blend of spices and served with rice or bread.

Allergens:
Gluten, Dairy

Calories: 450 kcal

20 g	30 g	5 g	25 g
Fats	Carbs	Fiber	Proteins

Borscht

BARŠČIAI

Borscht is a traditional Eastern European soup made primarily from beets, often accompanied by cabbage, potatoes, and carrots. It is typically served hot or cold with a dollop of sour cream, adding a creamy texture that complements the earthy flavor of the beets.

Allergens:
Dairy

Calories: 150 kcal

3 g	30 g	8 g	5 g
Fats	Carbs	Fiber	Proteins

Dumplings

ŠVILPIKAI

Švilpikiai are Lithuanian dumplings made from grated potatoes, typically filled with meat or mushrooms. They are usually boiled and served with sour cream, making for a hearty and comforting dish.

Allergens:
Gluten, Dairy, Potatoes

Calories: 300 kcal

10 g	45 g	5 g	10 g
Fats	Carbs	Fiber	Proteins

Add to Order (0)

Spicy Cheese Dumplings

SPIRGUČIAI

Spirgučiai are traditional Lithuanian dumplings made from flour and filled with a spicy cheese mixture. They are often served as a hearty snack or appetizer, providing a flavorful combination of cheesy and savory tastes.

Allergens:
Wheat, Dairy, Eggs

Calories: 250 kcal

10 g	32 g	2 g	10 g
Fats	Carbs	Fiber	Proteins

Cottage Cheese

VARŠKĖ

Cottage cheese is a fresh cheese made from curds. It has a mild flavor and a creamy texture, enjoyed on its own or used in various dishes. It's a great source of protein and can be found in both savory and sweet recipes.

Allergens:
Milk

Calories: 206 kcal

10 g	6 g	N/A g	28 g
Fats	Carbs	Fiber	Proteins

Add to Order (0)

Pork Chops

KARBONADAS

KARBONADAS are thick-cut pork chops, often marinated and grilled or pan-fried, served with a variety of sides. This dish is flavorful and typically enjoyed in many cuisines, making it a popular choice for meat lovers.

Allergens:
pork, gluten, soy

Calories: 250 kcal

17 g	N/A g	N/A g	26 g
Fats	Carbs	Fiber	Proteins

Add to Order (0)

Cold Beet Soup

ŠALTBARŠČIAI

Šaltibarščiai is a traditional Lithuanian cold soup made with beets, cucumber, dill, and often served with sour cream and boiled potatoes. It's refreshing and popular during warm weather.

Allergens:
Dairy, Eggs

Calories: 150 kcal

8 g	20 g	4 g	5 g
Fats	Carbs	Fiber	Proteins

Add to Order (0)

Maltinukas

MALTINUKAS

Maltinukas is a traditional Lithuanian dish made with a base of fermented rye bread or barley, often served with various toppings. It has a unique sour flavor and is valued for its hearty and nutritious qualities.

Allergens:
Gluten, Yeast

Calories: 250 kcal

4 g	40 g	5 g	7 g
Fats	Carbs	Fiber	Proteins

Add to Order (0)

Cottage Cheese Dumplings

VARŠKĖČIAI

Cottage Cheese Dumplings, or Varškėčiai, are traditional Lithuanian soft and sweet dumplings made with cottage cheese, usually served with sour cream or jam. They are a popular comfort food, often enjoyed for breakfast or dessert.

Allergens:

Dairy, Gluten

Calories: 250 kcal

10 g	30 g	1 g	12 g
Fats	Carbs	Fiber	Proteins

Smoked Bacon

SŪDYTI LAŠINIAI

Smoked bacon is a traditional dish made from cured pork belly, often enjoyed as a savory delicacy. It is rich in flavor and typically served sliced, either as a main dish or as a complement to other meals.

Allergens:

Pork, Nitrates, Sodium

Calories: 500 kcal

40 g	1 g	N/A g	37 g
Fats	Carbs	Fiber	Proteins

Curd

KASTINYS

Kastinys is a creamy, soft cheese made from curds, often enjoyed as a spread or dip. It can be flavored with herbs or spices, offering a rich taste and smooth texture. Commonly served with bread or vegetables, it's a staple in various cuisines.

Allergens:

Milk, Lactose

Calories: 200 kcal

16 g	6 g	N/A g	12 g
Fats	Carbs	Fiber	Proteins

Tingingys

TINGINYS

Tingingys is a traditional Latvian dish made with a savory mixture of grains, often served with meat or vegetables. This hearty meal is typically enjoyed during family gatherings and festivities.

Allergens:

Gluten, Meat, Dairy

Calories: 350 kcal

10 g	45 g	5 g	20 g
Fats	Carbs	Fiber	Proteins

Cheese Bread

KEPTA DUONA SU SŪRIU

Kepta duona su sūriu is a Lithuanian dish made of fried bread slices, often topped with melted cheese, offering a deliciously savory and crispy experience. It's popular as a snack or appetizer.

Allergens:

gluten, dairy

Calories: 250 kcal

12 g	30 g	2 g	10 g
Fats	Carbs	Fiber	Proteins

Poppy Seed Soup

ŠIUPININĖ SRUBA

Šiupininė sruba is a traditional Lithuanian soup made with poppy seeds, often combined with vegetables and herbs. It is a flavorful and unique dish, known for its creamy texture and nutty taste, making it a comforting option for warm meals.

Allergens:

Poppy seeds, Gluten, Nuts

Calories: 250 kcal

10 g	32 g	4 g	8 g
Fats	Carbs	Fiber	Proteins

White Salad

BALTA MIŠRAINE

A light and refreshing salad typically made with chopped boiled potatoes, carrots, peas, and often dressed with mayonnaise or sour cream. It is a popular dish in various Eastern European cuisines, providing a mix of flavors and textures suitable for any meal.

Allergens:

Eggs, Dairy, Peas, Potatoes, Carrots

Calories: 250 kcal

12 g	30 g	4 g	5 g
Fats	Carbs	Fiber	Proteins

Peas with Bacon

ŽIRNAI SU SPIRGUČIAIS

Žirniai su spirgučiais is a traditional Lithuanian dish featuring green peas cooked with crispy bacon bits, providing a hearty yet comforting meal that balances flavors and textures.

Allergens:

Pork, Gluten

Calories: 350 kcal

14 g	40 g	8 g	18 g
Fats	Carbs	Fiber	Proteins

Lithuanian Cheese Pancakes

LIETINIAI SU VARŠKE

Lithuanian cheese pancakes are delicious, fluffy fritters made from curd cheese, flour, and eggs, often served with sour cream or jam. They are a popular traditional dish that combines sweet and savory flavors for a delightful treat.

Allergens:

Dairy, Gluten, Eggs

Calories: 250 kcal

10 g	30 g	1 g	12 g
Fats	Carbs	Fiber	Proteins

Rūgpienis

RŪGPIENIS

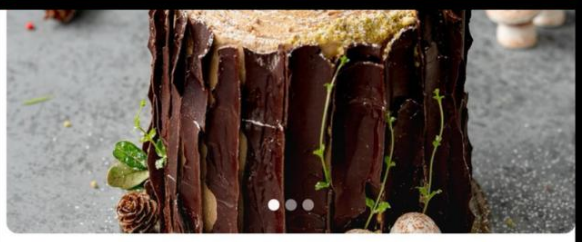
Rūgpienis, or sour milk, is a traditional fermented dairy product popular in the Baltic region. It is made from pasteurized milk that is fermented with lactic acid bacteria, resulting in a thick, tangy, and creamy texture, often enjoyed plain or with fruits.

Allergens:

Dairy

Calories: 120 kcal

7 g	5 g	N/A g	10 g
Fats	Carbs	Fiber	Proteins



Tree Cake

ŠAKOTIS

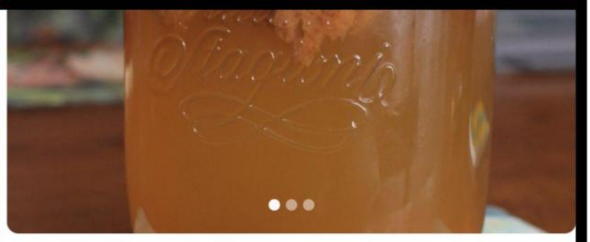
Šakotis, or Tree Cake, is a traditional Lithuanian pastry known for its unique appearance, resembling a tree with layers formed during baking. It features a rich, buttery flavor and is commonly enjoyed during celebrations and special occasions.

Allergens:

Gluten, Dairy, Eggs

Calories: 350 kcal

18 g	45 g	1 g	6 g
Fats	Carbs	Fiber	Proteins



Malt Beverage

NAMINĖ GIRA

NAMINĖ GIRA is a traditional fermented beverage made from malted grains, often slightly carbonated, with a sweet and tangy flavor. It's a popular choice in various cultures and can be enjoyed as a refreshing drink on its own.

Allergens:

Gluten

Calories: 90 kcal

N/A g	20 g	N/A g	1 g
Fats	Carbs	Fiber	Proteins

Kefir

KEFYRAS

Kefir is a fermented milk drink similar to yogurt but thinner in consistency. It is made by adding kefir grains to cow, goat, or sheep milk, resulting in a tangy, slightly effervescent beverage that's rich in probiotics and calcium.

Allergens:

Milk, Lactose

Calories: 100 kcal

3 g	12 g	N/A g	6 g
Fats	Carbs	Fiber	Proteins

Kissel

KISIELIUS

Kissel is a traditional Eastern European dessert made from fruit juice or puree mixed with sugar and thickened with starch. It's served as a sweet pudding or beverage, often enjoyed chilled. A comforting treat that is both delicious and refreshing.

Allergens:

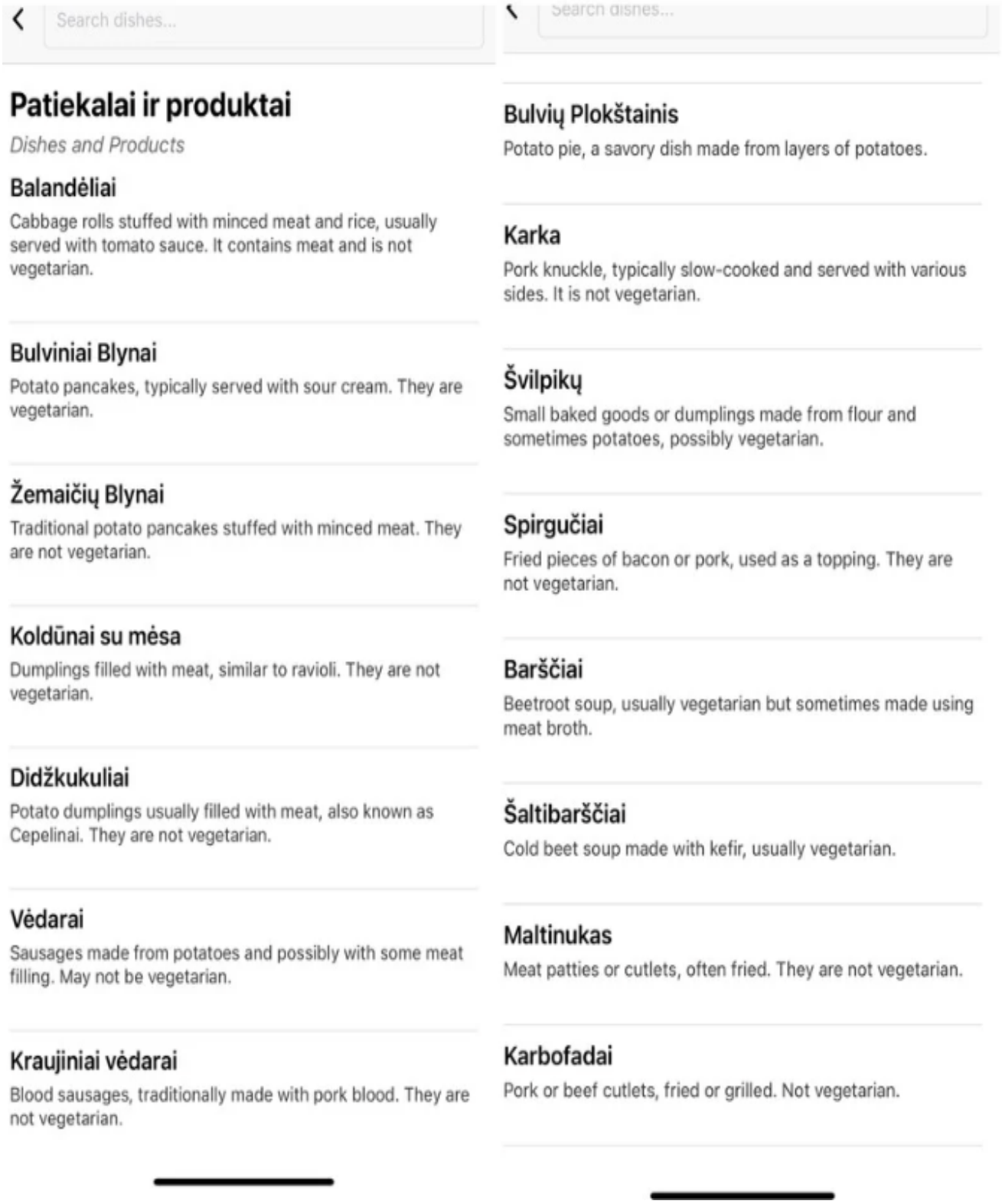
Cornstarch, Wheat (if used), Fruits (from puree)

Calories: 120 kcal

N/A g	28 g	1 g	1 g
Fats	Carbs	Fiber	Proteins

Appendix 9. "MenuTranslator App" generated translation

These translation results were generated after uploading a syntethic menu from Appendix 7 to MenuTranslator App (version 1.1.0).



Search dishes...

Varškė
Curd or cottage cheese, often used in desserts or savory dishes.

Varškėčiai
Cottage cheese pancakes, typically sweet. Often vegetarian.

Kastinys
A type of spread or dip made from sour cream and spices.

Tinginis
Lithuanian lazy cake made with biscuits and cocoa. Vegetarian and often no-bake.

Sūdyti lašiniai
Salted pork fat or lard, often used in traditional Lithuanian dishes. Not vegetarian.

Kepta duona su sūriu
Fried bread with cheese, served as a snack or appetizer. Typically vegetarian.

Balta mišrainė
A salad with potatoes, vegetables, and mayonnaise, similar to Olivier salad. Usually vegetarian.

Žirniai su spirgučiais
Peas with fried bacon bits, not vegetarian.

Search dishes...

Šiupininė sriuba
Thick soup made from various ingredients like meat, potatoes, and vegetables.

Lietiniai su varške
Crepes filled with curd cheese, often sweet. Typically vegetarian.

Šakotis
A traditional Lithuanian tree cake made from dough and baked on a spit.

Naminė gira
Homemade kvass, a fermented beverage made from rye bread.

Rūgpienis
Sour milk, similar to kefir or buttermilk.

Kefyras
Fermented milk drink, similar to buttermilk.

Kisielius
Traditional fruit-based drink or dessert, thickened with potato starch.

Appendix 10. “Menuly" generated translation

These translation results were generated after uploading a synthetic menu from Appendix 7 to Menuly (version 1.0.2).