

The business potential of a novel concept in digital food ordering

**Market analysis, consumer research and product development in
South Karelia**

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Abstract

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Abstract <p>The author is assessing the market potential of his novel concept dealing with the digitalisation of professional kitchen processes, supply chain planning and consumer advance ordering. The author investigates the available market and explores consumer behaviour and decision-making in South Karelia, a region in Finland. An integral part of the thesis is a 250 respondents survey of consumer actions, demand, dietary preference and purchase patterns in food ordering and dining-related habits. Another exploratory section is a partial market analysis. As auxiliary fields of market analysis, new product development research and competitor analysis are utilised. The author is trying to identify the most recent drivers in the Finnish restaurant and food service market. There is an attempt to ration and weigh domestic and global trends followed by shifts in demand and supply after 2020 with the concept's trade capabilities. The author interprets survey findings in contrast to empirical research and secondary data. Regarding his other observations from consumer research, market analysis and product development, the author carefully assessed the business potential of his novel concept in professional kitchen operations and food ordering. The thesis is a precursor to the author's business plan.</p>		
Keywords digital, food, local, market, ordering, restaurant, supplier		

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Appendix 1. The questionnaire

1. Introduction

1.1 Background

The purpose of the thesis is to assess and estimate the impact, possibilities and opportunities of a new concept in digital food ordering in the regionally restricted market in South Karelia, a province in South-Eastern Finland. The thesis functions as a pillar of the author's business plan. Market research emphasising consumer behaviour is used as a primary analytic tool, with its fundamental values coming from a survey. Besides the survey, other primary sources are publications, journals and academic writings on scientific research, market and marketing research. Topics on developing a new product, service or business and consumer decision-making studies have not been left behind either. The author also drew on theses from universities and articles in the press. Finally, secondary research uses information published by the government of Finland, chambers of commerce, media agencies, marketing research companies, non-governmental organisations and independent online resources.

The new-fangled concept of digital food ordering is the author's business idea. It has implications for individual consumers, business partners such as professional kitchens, restaurants, producers, suppliers and food service companies, and business customers, such as companies and organisations in need of catering or food-serving solutions. The idea springs from the author's invention of a Novel kitchen scheme. A so-called Novel kitchen is any professional kitchen that is spatially designed according to certain rules and digitally runs on specific ecological kitchen management and sales systems. From an economic point of view, the system functions are based on consumers' advance payments, networking and pre-planning of each logistic and production step. The purpose of the software apparatus and its features is to bring consumer benefits such as complex food from fresh, mainly local ingredients, with high added value, yet with minimised waste output. All aspects of the Novel kitchen design and its software are set to provide the benefits mentioned above to the consumer as effectively as possible. At the same time, the system becomes more efficient the more consumers engage. These dedicated benefits discussed above are particularly examined in the survey of 250 Finnish-speaking respondents (n=250).

This bachelor's thesis published by the Tourism and Hospitality faculty omits market research on the software part of business development for its specific and technical nature. The software development is explained briefly in subsection 3.4.

1.2 Structure

The thesis, research and results are divided into nine parts. In the first chapter, the author presents the reasoning for the thesis subject, briefly demonstrates the structure of the thesis, essential definitions and a review of sources and literature.

In chapter no. 2, the author reflects on scientific research and compares it to business research. The research methods and objectives of the thesis are explained. The author formulates a hypothesis and asks the main research question. Post-research development is outlined as well.

The author initiates an explanation of his novel concept, related business idea and different perspectives in chapter no. 3.

Chapter 4 summarises the positive and the adverse outcomes of digitalisation and current trends in the food industry, ordering and delivery. At the same time, the chapter is a part of market analysis and shows opportunities and barriers to entry.

The characteristics of the market in Finland and South Karelia, together with a comparative look at other markets and global trends, are presented in chapter no. 5. By mapping the market and providing insights into the competition, the author presents the central part of the market analysis.

Chapter 6 is devoted to business analysis, company feasibility, product demand and consumer behaviour. The author is aware of the difficulty of conducting such an analysis without a product, service or firm. The author considers that classical approaches such as PEST and S.W.O.T. work best but does not wish to publish their results.

Covering the most relevant outputs of the collected survey is the subject of chapter no. 7. The core survey findings are displayed in different contexts, based on which consumer's attributes, properties and demographic factors are relevant to the research question. Not all results of the survey are disclosed.

In chapter no. 8, the survey responses' common denominators are outlined. The size of the available and target market is calculated by filtering responses. The author attempts to translate research, survey, and secondary data into academic, business and marketing language. The author strives to understand what was observed, how information was grasped, how it was processed and why the discoveries might be sufficient for making a conclusion or otherwise.

In the last section, Conclusion, the author presents the answer to the research question and gives the final verdict to the research hypothesis. The author asks whether his efforts, business idea, research and upcoming business plan have market potential and whether these attempts can provide a fruitful foundation for a new enterprise upstart.

1.3 Terminology and definitions

Market research has two essential research functions. The first function is to reduce uncertainty in making choices by decision makers by giving them information, data and statistics. The second function is to evaluate past decisions and monitor their effect, whether they were right or need to be revised (Birn 2004, 59). The thesis is focused on the first function, uncertainty reduction, because there are no past decisions or measurable Key Performance Indicators, as the new company have yet to be operational. The verbal phrase "market research" in this work implies its first research function for the sake of future, coming decisions.

To understand the author's research objectives, it is advisable to define the following terms, which are not explicitly defined in the literature, and if they are, then rather vaguely and loosely: consumer, customer, prepared food, food quality, short supply chain, local food, fresh food, food delivery, food ordering, fast food, professional kitchen, ghost kitchen and Novel kitchen.

The **consumer** is an end-user of a service or a product, a final receiver in the supply chain in the case of a one-way, standard supply chain. The author is not using the word **customer** for individuals, reserving it for organisations and companies because most market research projects deal with individual consumers (Stone et al. 2004, 6).

Ready-made food, or **prepared food**, is produced as comestible for immediate consumption or consumption within a noticeably brief period from when preparation is finished, usually not exceeding 3 hours. Most ready-made food loses quality, nutrients and looks shortly after preparation, especially when the temperature dedicated for consumption rises or decreases on the room temperature level or when moisture conditions become undesirable. Food, in general, is a perishable product and undergoes various inner and outer effects of biological, chemical and physical deterioration, which affect flavour, texture, consistency, colour and safe consumption window (Potter & Hotchkiss 2012, 113).

Food quality can be objectively determined with great difficulties (Cardello 1995, 163) because individual, scientific and cultural influences change with time, regional and cultural habits. Individual food quality standpoint depends on demographic and socioeconomic aspects (Baiardi et al. 2016, 74). From a market and environmental perspective, the consumers' food quality evaluation is prompted by certain cues or factors (Petrescu et al. 2022, 10):

- 1) Environmental-Social, including price
- 2) Nutrition and artificial observations, health
- 3) Actual need, use and choice, a moment of preference
- 4) Convenience and suitability
- 5) Sensory and first-sight impression
- 6) Trustworthiness and origin

The definition of food quality, instead of relying on the consumer's individually perceived quality, choice, acceptability, market specifics and psychology, could be grasped as the quality assessment in the form of the perception of quality degrading. The process of losing quality depends on the state of raw material on input, conditions exposed within the logistic chain, and biological, chemical and physical solutions during preparation and subsequent distribution. In case when raw materials are close to their expiration and enzymatic and micro-organic processes are irreversible, the final product's quality and safe consumption window is degraded. The freshness of input has a direct impact on the freshness of output. The quality of the input should directly impact the quality of the output. Prolongation of the consumption time window and food degradation cessation can be achieved by cooking method, freeze, additives and preservatives, and more advanced methods such as light, pressure and electric field mechanisms. Cooking and pre-cooking techniques can substantially impact the freshness and perceived quality (Potter & Hotchkiss 2012, 128). Exceptions to the above rules are frequent and spread across all cuisine worldwide. The abovementioned principles and processes of production, preservation, storage and consumption of ready-made food fit North American, Continental, European, Mediterranean, Scandinavian and Finnish cuisine.

The perceived food quality and factors of the origin and trust are closely related to the **short supply chain** (or short food supply chain, SFSC). According to EU regulation No 1305/2013, a short supply chain involves a limited number of economic operators committed to collaboration, local economic development, and close geographical and social relations between producers, processors and consumers (EU 2013). According to the author, in contrast to the standard supply chain, critical aspects of the short supply chain are missing in the definition: effective scheduling, better prediction of the production amount and quality of output, and higher speed of material turnover in the chain. The author firmly

believes that short supply chains are self-regulatory in their nature and show signs of autonomous systems.

Simplification of the food quality premise and widely perceived guarantee and assurance of food quality are pointing towards the **local food**, towards the short supply chain (Migliore et al. 2015, 146). Food quality is an attribute which is hard to grasp, but from a marketing point of view it is one of the key properties of the product sold, the same as the attribute of being local. Quality and being local can be perceived as interchangeable. From a psychological angle, the quality has many connotations, and it is synonymous with healthiness, freshness and being brought by professionals. Local food is perceived mainly as healthy and fresh. The attribute of “being local”, which is often connected to perceived quality, cannot be assessed technically but only by trusting the carrier of that information (producer, seller, label, product description). The objective quality of an ingredient and the raw material’s initial state are the fundamental prerequisites of preparing a quality meal. As in restaurants, just like in stores, quality management of raw materials is vital for consumer retention (Hall, 2020). For the purpose of this research, the author constitutes food quality as a cluster of properties of input and output materials and actions which consumer understands as “bringing value”, “being of high grade”, “being safe” and “with the right nutrition”. The author uses the attribute of local food as a synonymous designation of food quality. The author is aware that being local does not automatically always mean being of high quality in reality. Needless to point out, a consumer can accept food of low quality or even poor-quality products too and the acceptance is strongly subjective (Potter & Hotchkiss 2012, 90).

In the case of prepared food, the state of being fresh is hard to define. Ideally, by common sense, **fresh food** is prepared from fresh ingredients without any foreign chemical substances. It has avoided freezing, and it is served immediately. American FSA provides a satisfying definition of “being fresh” and its implications, claims, labelling and consumer understanding (Loades, 2017). When describing freshness, the context is essential and misleading or false information must be eliminated. It must be ensured that the consumer knows that the state of the ingredient or prepared food he bought was precisely communicated (for example: made today, hand-picked, freshly baked from frozen dough, from a local producer, freshly prepared this morning, local farming initiative etc.). Being fresh is a message of great marketing potential in the case of food and is also pivotal for the author’s business idea. It is difficult to communicate it to the consumers and ensure they understand it as intended. Simply put, “being fresh” means different things to different people. For instance, the author can ask the reader: “are the dried fruits fresh?”

Food delivery is a process when ingredients, groceries, prepared meal, or half-made meal is transferred from a kitchen or a selling point to the consumer in the logistically most convenient and in theory as well the most economical way. Different models of producing and selling ready-made food in eateries or for subsequent distribution to the consumer have been known for centuries. More models came into practice in the 20th century. The equivalent of contemporary fast-food restaurants was called Thermopolium, discovered to be functional in ancient Rome in the 1st century A.D. (Daley, 2019). First restaurants, close to the business form as we know it today, appeared in the 12th century in China (Rawson & Shore 2019, 5). Commonly known delivery arrangements are milk delivery since 1785 and delivery of meals which spread out during WWII, later known as the Meals on Wheels concept. Carhops and Drive-throughs as models of take-away food distribution in the USA were popularised during the '20s and adopted worldwide. Courier delivery by car or bicycle was usual in Western countries already in the 60s (Rude 2016; Harvey 2019). With widespread access to smartphones and internet connection, food delivery and ordering

became domains of online businesses, technology companies and digital sales. They became evident and prominent at the end of the 20th century, with the subsequent peak of use during the COVID-19 Pandemic.

Food delivery is closely chained with food ordering. **Food ordering** as a phenomenon determines food production and supply chain and vice versa. The consumer can order a meal which is possible to produce and deliver, while the meals offered are selected according to the possibilities of the kitchen and the supply chain. Food ordering methods can be divided according to different types of demands. The primary division can be translated into two types: the upon-request model called “on-demand”, where waiting time is in orders of minutes, or the scheduled model called “pre-order”, where the waiting time aims for a definite, precise point in time or particular time frame in the near future. The optimal service setting for both types of demand is that the consumer is getting the ordered food at a suitable time, and concurrently, the food is prepared and ready for serving at the desired moment, usually very close to the moment of consumption. In other words, the consumer is getting fresh food, the food which was finished right before the point of serving. Some food recipes and dining styles are more dependent on the time domain than others, as the integral component, cooking style, and method or dining style are restricted or dependent on temporal development (marinating, leavening, yeast development, maturation, drying).

Digital food ordering is a case of ordering food through digital channels and has undergone rapid development in the last decade. Mobile apps overlooked popular ordering methods such as calls and websites. Complicated menu views, digital payments, discounts, delivery options, and later delivery tracking have been added to initially simple solutions designed for individual restaurants or chains, focused before solely on making an exclusive order. Multi-restaurant food delivery applications or “delivery apps” are consumer software applications designed mainly for on-demand ordering. In a standard economic environment, fast food was predominantly the main item sold by apps. Apps became a popular way of food ordering and delivery, especially during the COVID-19 pandemic lockdowns. Consumers from risk groups or with a tight schedule might not have any other option for getting a warm dish, as restaurants were closed for dine-in.

Nevertheless, food delivery apps have brought many adverse effects on society: labour policy inconsistencies, CO2 emissions rise, malnutrition and fast food normalisation, to name a few. Companies developing food delivery applications were criticised for exploiting both ends of their partner operations, the restaurants and the couriers. A probe into the positives and negatives of this phenomenon can be found in chapter 4.

The delivery might go hand in hand with food ordering, but it is not always a condition. There are cases when food delivery precedes food ordering, for example, ice-cream carts, fast food trucks, etc. The “on-demand” model of food ordering from restaurants counts on classic kitchen operations along with forecasting, supplier management, inventory management, waste management etc. It is important to emphasise that the on-demand economy in the restaurant industry is mainly about food prepared in a very short time, in a few minutes, which overlaps widely with the fast food category.

The primary identification mark of **fast food** is its short preparation time, from seconds to a few minutes. Ingredients are stored in the state of being ready to be cooked immediately, and wide usage of frozen and semi-finished products is typical. The fast food category is hard to encompass adequately as it varies greatly, regionally and within smaller local societies. There are unified international chains, which became an emblem of fast food. Smaller national kiosk chains, fast food restaurants, and smaller businesses focusing on

cheap, quick and convenient dishes could be found in every developed country. Other fast food identification features are high carbohydrate and fat content, relatively small protein proportion, objectively unhealthy cooking methods such as frying in already burned oil, and chemical preservatives overuse. In Finland, typical fast food dishes are pizzas, hamburgers, fries, different kebab versions and hot dogs. Finnish classic “snagari” or “nakkikioski”, a grill kiosk serving sausages, meatballs and fries, are popular and can be found even in smaller towns or villages, where bigger chains are unable to make profitable operations. However, fast food is not always synonymous with low-quality, processed and stale dishes. Numerous chefs, businesses and private traders also focus on high-quality fast food with all professionalism. However, it is disputable whether the production facility of a grill kiosk or ethnic stall or “hungry window” can be considered a professional kitchen.

The **professional kitchen** is a hygienically appropriate place with kitchen machinery and relevant storage operated by trained staff on certified premises, where meals are prepared for a desirable outcome. Meals can be ready almost immediately after the order process, prepared for assumed sales in future or according to a schedule. The kitchen can be connected to an approved eatery, where a selling point is usually found.

The author uses the term classic kitchen in situations when a distinction towards ghost kitchen or Novel kitchen needs to be made. We can find a helpful division of places with ready-made food-producing units in Food Industry Statistics (licenced restaurants; cafés and other restaurants; primary, secondary and upper secondary schools; hamburger and kebab restaurants, pizzerias; care homes and children's homes, other care facilities; staff restaurants; nursery schools; hotels and other accommodation providers; cafés and restaurants in connection with other operations; service stations; vocational schools, colleges and universities; catering and meal services; hospitals; other mass caterers and “not reported”; Karjalainen 2019). Another categorisation of a kitchen can be done according to food production methods (Yıkıcı, 2015). In HoReCa 2020 report, kitchens are split into three categories according to their types: “Keskuskeittiö” (as well “Laitoskeittiö”, “Ravintokeskus”, “Tuotantokeittiö”, “Alukeittiö”) where food is produced and then distributed, “Valmistuskeittiö” where food is only produced and “Jakelukeittiö” where finished food is brought, and distributed later, sometimes called as well “Tarjoilukeittiö” (Kespro 2020). The terms “Palvelukeittiö” and “Viimeistelykeittiö” can also be found in Finnish literature. Those terms designate kitchens whose function is to finish or pack food already prepared by the different kitchens, add salads and sauces and sometimes, quickly make side dishes.

The **ghost kitchen**, called the dark kitchen, cloud kitchen, virtual kitchen, etc., is a form of a professional kitchen working under a commission contract for other kitchens and restaurant brands without a storefront and eatery. The primary purpose is the preparation of dishes for delivery only. The partnered brands organise the recipes and often the sourcing of ingredients. A typical restaurant kitchen can work simultaneously as a ghost kitchen, preparing dishes under other restaurant brands (Merckaert 2021).

The term “Novel kitchen” will be used to formulate a new type of kitchen that is out of “on-demand” scope and whose operations are trying to avoid poor waste management, inefficient forecasting and the need for excessive inventory management. **Novel kitchen** model brings near zero-waste production of fresh, healthy, complex and quality food. A Novel kitchen is an industry-standard professional kitchen, or ghost kitchen, with the following innovations: specific management software, inspiration in just-in-time manufacturing principles on the background of modified push-pull strategy, use of modern technologies such as smart devices, Internet of Things, online networks and Artificial

Intelligence, together with a special kitchen floor layout and advanced space usability when applicable. Certain types of kitchens and some industrial food production methods are not very flexible in adopting advanced production approaches and new technologies: fast food chain kitchens, tiny pizzerias, small ethnic bistros or food kiosks. Novel kitchen image does not necessarily fit any categorisation or definition exclusively. It can be seen as an add-on to an already existing kitchen, or it can be built from scratch. Stratification in the HoReCa sector is not always easy. Between some business models and kitchen types is a thin line. Not every professional kitchen can become a Novel kitchen, but every Novel kitchen is a professional kitchen. The idea is closely described in chapter 3.

1.4 Literature review and sources

Sources are listed and arranged to the groups according to their purpose and thesis structure. The main source streams are the university library in Lappeenranta and online databases of books, articles and theses, contrasting with blogs, news and magazine articles. The author primarily intends to collect up-to-date literature and lately published online resources.

The primary source was the author's business idea in written form, including tables, graphs and different exercises, together with research survey results.

The groups of other sources are from the following areas:

- academic research in general
- marketing research publications
- market research and consumer research theory
- new product development sources
- qualitative and quantitative research methods
- online articles, news and blogs from corresponding industries
- secondary compiled statistical data

In the early stage of the thesis, the author first questions what good scientific research is and whether business research should possess the same qualities. Business research appears less rigorous and, unlike scientific research, must guide business decisions (Cooper & Schindler 2001, 15).

The author constitutes a connecting link between scientific and business research as innovation. Innovations are not equal. In science, once in a somewhat greater span of time, a new-fangled innovation known as a paradigm shift changes current views (for example Einstein's theory of relativity). In business, occasionally, disruptive innovation pushes sustainability to another level, finds extraordinary means to generate added value or completely changes the business world. It is not a rule that these innovations have immediate or, if ever, financial success. It is natural that business innovation often bubbles out from scientific research. ARPANET, becoming later Internet, has this character. Innovations are identifying elements of successful businesses. Extraordinary marketing achievements or Growth hacking can be products of innovation. Innovation in product development does not necessarily lead to product success on the market. On the micro level, according to the diffusion of innovation theory in marketing, the person or company becomes a regular user of innovation when there is the awareness that it exists (marketing),

when there is the decision to try it (demand), it must be available (supply) and bring some satisfaction (solving a problem) which leads to repeated usage (returning, loyal customer) preferably for a long time (Crawford & Di Benedetto 2011, 200).

Marketing and market research use the same research methods on a big scale. The author considers the difference between marketing and market research, as marketing research outcomes point to marketing decisions (Wilson 2019, 12). However, thanks to developed theories, a wide range of methods and applications, detailed terminology and easily accessible publications, marketing research has proved to be a good inspiration when designing and fool-proofing the author's research questionnaire (Appendix 1). Marketing research influenced the course of analytical thinking about the available market. Useful chapters in marketing research texts were particularly chapters about survey design.

Sources and literature on marketing research are broad and rich, yet original or derivative works focused solely on new product development research are scarce. The same applies to customer behaviour research in the case of a new service or aspects of introducing a new business idea into practice. The author has not found mentioned subjects in monography form. The author has not found any research backed by a survey or an example of a survey design aiming at equivalent objectives as in his thesis. Uncertainty coming with new products can be associated with unwanted effects and financial losses. The author's dedicated research is trying to minimise this uncertainty. On the axis of steps of new product research, the author's research phase is between Concept Evaluation and Product Development, while both are in their last stage (Aaker & et al. 2001, 628).

An essential group of sources is from the market and consumer research area. The thesis has many market research aspects, as it investigates human behaviour and provides evidence for the author's decision-making (Hamersveld et al. 2008, 37). Nevertheless, the author cannot classify the thesis as pure, complete market research, as the author's research specifics steer towards assessing market potential and finding grounds for decisions in product development. The market research gives a chance to analyse and interpret service and product phenomena in specific markets to organisations and companies, where the particular market may lack any binding with the chosen phenomena (Keegan 2009, 3). Invaluable work proved itself New Business Road Test by John Mullins. Mullins presents seven domains of opportunities in business: market attractiveness, target segment benefits, industry attractiveness, sustainable advantage, propensity for risk, connectedness across the value chain and ability of a team to execute on critical success factors. These seven domains guide the research structure and evidence-based forecasting (Mullins 2010, 277). Finally, insights from Mullins' work were used in the logic of the survey design.

Market research is generally hard to describe by a satisfying definition (Keegan 2009, 5). Authors dedicated to market research often juggle concepts of marketing research and market research until using them interchangeably. Both concepts overlap significantly; most importantly, both represent the qualitative and quantitative research methods. Nevertheless, most authors admit that both terms cover a vast area of human society and business. Apart from a few works, only some authors attempt to comprehensively encompass them all (McQuarrie, 2012; p. 3). Instead, they choose special applications or take one research method as default and develop its potential further. There are also unconventional approaches to market research, such as Adamou's gamification, where gamifying of survey leads to an increase in consumer engagement and survey potential improvement. By game-based survey design, a researcher can intensify the consumer's motivation to finish the research (Adamou 2019, 108). The game element is incorporated

into the research survey in questions, where the respondents imagine they are someone else with a predetermined societal setting.

Sources specifically about quantitative and qualitative aspects and their application when building survey questions were another group. While designing the questionnaire, the theory of attitudes and behavioural intentions questions when a product has not been released brought valuable impulse (Bradburn et al. 2004, 129).

The last big group were online sources, articles or blog posts about economics, new services, consumer issues, product development and related subjects. There is insufficient academic output for relatively new phenomena such as food delivery apps. That is why online articles from different magazines, blogs and popular consumer servers were researched.

Finally, secondary compiled and condensed sources about economics, demographics and market in South Karelia and Finland in the form of statistical data were considered in the work. The global statistics trends were not omitted.

2. Research

2.1 Nature of research

The issue of research and its attributes constitute a wide range of theoretical outgoings, practical questions and lead to applied solutions. Academic, scientific research and practical business research might look like different categories. Still, for the purpose of this thesis, the author utilises scientific research methodology in the business research domain. Whilst business and academic research applications might differ, the research itself must have certain qualities to be justified. Research, being fulfilling and exciting intellectual activity, is quite hard to describe in a satisfying way (Preece 1994, 3). The most sought-after abstract quality in any research is being a good one. Research attribute of “being good” is perceived as being thorough, efficiently planned and well-executed, done with purpose and integrity. The purpose of the research must be clearly defined (Cooper & Schindler 2001, 15). Well-conducted research is useful, rewarding and finally closed with appropriate findings, results or evaluation. An essential quality of good research is being ethical. Another key quality is an advance towards critical thinking, critical verification of data and sources and critical handling of any figure or information (Nieto & Saiz 2010, 19). Systematic conception and relevance as important attributes should be inscribed in any research (Preece 1994, 6-7). Supporting conditions for good research are responsibility, objectivity, empirical approach, implementation of synchronous and asynchronous projections and finally, good research corresponds with its own chosen research method. In other words, an appropriate research method helps research tremendously. Good research is done according to official guidelines. It has all formal requisites, authorisations, licenses and legal backing. States and academic institutions issue official instructions for researchers, where manners and routines of aspiring research are set (TENK 2012, 30). LAB University of applied sciences has its own guidelines for writing theses (LAB 2022).

The adjective “good” corresponds with the synonymous adjective “quality”. Detailed insight into research qualities opens a field of overlapping and closely interconnected features. High-quality research attributes are, for instance, that findings from other research projects in the same field should not be ignored and must be considered (Salkind 2009, 3). Research and its outcomes should be replicable, which applies to the extent when another method is used. Research and its findings should be, under certain conditions, portable to another environment and situation. Good research must be framed around a possible, meaningful and valuable mission. Quality research opens new dimensions in business or science and ignites further ideas and hypotheses. All research works should build on each other, grow in unity, and create a network of knowledge. Finally, the ideal research hidden objective is an improvement of society (Salkind 2009, 3-4).

A critical way of thinking and sorting information is crucial for any research work. It must be applied during the preparations and through each research step. Critical thinking can be trained and can be perceived as a skill. Same time, such thinking is a disposition, something inherited or rather acquired in one’s development (Nieto & Saiz 2010, 20). Critical thinking is improving with the amount of knowledge. Special attention must be given to data sources that the researcher has not collected by himself. Focus on the ambivalence of truth and equivoque of value plays a considerable role in good research.

2.2 Scope and objectives

The thesis research and questionnaire design engage with atypical conditions between potential consumers and a new service, as neither the company nor the service exists. The Novel kitchen concept is unknown to the public; the business plan is confidential and the service is not on the market. The software for Novel kitchen is in the early stage of development when the research is conducted. It is a specific situation of the original nature. Either way, market research can function as a critical tool for identifying opportunities and developing new ideas, services and products (Keegan 2009, 8). The research must deal with hypotheses, floating, changing premises, what-ifs etc. The new business development or even pre-business development compared to established types of companies must deal with unstable conditions, and the outcome of such development is far-fetched. New products take a long time, counting in years, from conception to introduction (Aaker et al. 2001, 637).

The survey scope is consumer behaviour in South Karelia, with a control group of consumer behaviour in the rest of Finland, separated from the capital area (Uusimaa). The researched behaviour of consumers is subject to analysis concerning food delivery, restaurant visits, payment customs, financial reasoning, personal preferences and eating habits. The purpose of exploration of this behaviour is to conclude the demand and existence of the available market for the new business idea. Additionally, the survey results give contours of the target market and new suggestions for product development. The idea and future business plan should be steered according to research findings. The main objectives are to determine whether there is consumer desire for the alleged benefits of the Novel kitchen and how the business idea and future operations could be improved to serve the target market better. Simplifying the research objectives in terms of demand and supply is similar to the main task in the marketing theory: identifying the willingness to buy (Isoviita et al. 1994, 6).

Food delivery, purchasing and ordering behaviour can be seen as phenomena in a philosophical sense. The scope of the research is to scientifically observe these phenomena as a shared experience of consumers in the chosen market. Qualities, in other words, intended benefits of the author's business idea, are working as the symbols in the minds of consumers (Creswell 2013, 76). Consumer experience is framed as individual understanding. What do the mentioned phenomena mean to each consumer personally? Shared experience is about finding those common symbols (Belk et al. 2013, 21-22).

2.3 Scale and limitations

Questionnaires have a varied range of response biases. The primary method of this research is an online questionnaire, where a researcher has little control over external influences (Grover & Vriens 2006, 107). To minimise outer impacts, classic oral interviewing is executed along with the web version, as this is a proven helpful approach, and a mixed method can play a substantial role (Kaden et al. 2012, 177). The diversification of biases is achieved by a combination of self-completion online and face-to-face interviewing, where a self-completion questionnaire makes participants more truthful with sensitive topics (Brace 2008, 29). Eating habits might be considered a sensitive topic for many. For the final amount of submitted responses, a sample size of 250 is constituted (n=250). There are ten oral interviews only (n=10). For its simplicity, the online questionnaire interface was used for recording verbal responses from face-to-face interviews into the dataset. The questionnaire (Appendix 1) was opened 743 times (link hits), and 348 respondents started responding. 34% of reached respondents finished the whole questionnaire, including oral results. About

72% of engaged respondents who started answering sent the completed survey. The final number of impressions, the people who noticed the questionnaire, could not be determined.

Electronic research still has its flaws. Online surveys suffer from respondent selection bias (Malhotra et al. 2012, 228). Respondent selection bias is partially caused by the uneven spread of electronic devices across age and income groups. Platform favourability in the population plays a role. The right social network must be chosen when social networks are used as a survey carrier. For example, if the study aims at Russian nationals in South Karelia, VK (former VKontakte) would be the right social network for spreading the survey. VK is far more used than Facebook amongst Russians. Russian is the mother tongue of almost 5000 South Karelia residents, constituting roughly 4% of the population (Eksote 2021). Initially, the survey was supposed to be available in Russian, but the amount of work and effort would not be commensurate with the results achieved. The same applies to the Swedish and English languages.

The landing link to the survey was clicked from, by rough estimate: Facebook (50%), Yammer of LUT and LAB institutions (25%), LinkedIn network (15%) and the author's inner circles and digital networks by instant messaging and face-to-face (10%). In the case of Facebook, the targeting of the population in Imatra and Lappeenranta was facilitated by contacting dedicated groups of respected cities, so-called natural communities, where the purpose of their grouping on the social network is the place where they live, lived, or which is the place of their interest (Poynter 2010, 251). The survey was also presented to other social media communities, the groups within social networks other than groups dedicated to cities. Communities must be approached ethically. Such communities produce immediate topic bias while having characteristics of focus groups (Nunan et al. 2020, 493-495). For example, responders from the community around healthy food and sustainable lifestyle tend to favour the author's business idea more than a group dedicated to the best fast food in town. Another research distortion is that the results are extracted from answers by people who like to participate in online research (Bax 2013, 89).

The further limitation comes from South Karelia's demographic and spatial fluctuation. In 2020 there were almost 127.000 residents in the region, approximately 72700 in Lappeenranta and 26100 in Imatra. Consumers between the ages of 15 and 64 have 59% representation in the population (Tilastokeskus 2021). Population density is higher in Lappeenranta and Imatra than in other municipalities like Lemi, Ruokolahti, Taipalsaari, Rautjärvi, Parikkala, Savitaipale and Luumäki. The division into sub-regions (seutu) is possible but unnecessary for this research. Business idea setup and execution to be profitable is designed for territorial units with around 15.000 residents or more, while population density and infrastructure design play a role too. Without significant deviation from real numbers, the author's premise is that the total addressable market is 50% of residents in Lappeenranta and Imatra, counting around 49.000 consumers. According to the author's prediction, based on income distribution and other factors, the available market constitutes 10% of the total addressable market. Roughly 4900 residents have a strong potential to become consumers of the new service.

Another limitation is the season when research is conducted and the character of the market, hit by the COVID-19 pandemic and fighting with the effects of war in Ukraine. The answers were collected from autumn 2021 to spring 2022. The market is changing rapidly. Inflation is growing universally, unlike before 2020. According to CPI, the annual inflation rate in Finland was 7% in May 2022 and rising (Tilastokeskus 2022). Economic growth decline and still unclear consequences and length of the Russian invasion of Ukraine can distort the research conclusion and might bring obstacles to practically any business up-start. Considering the research and questionnaire, most of the survey work was done before

the invasion started. The limiting factor is that most responders are women (Figure 1). The age of respondents plays a role too. Almost half of the respondents are 27-44 years old (Figure 2).

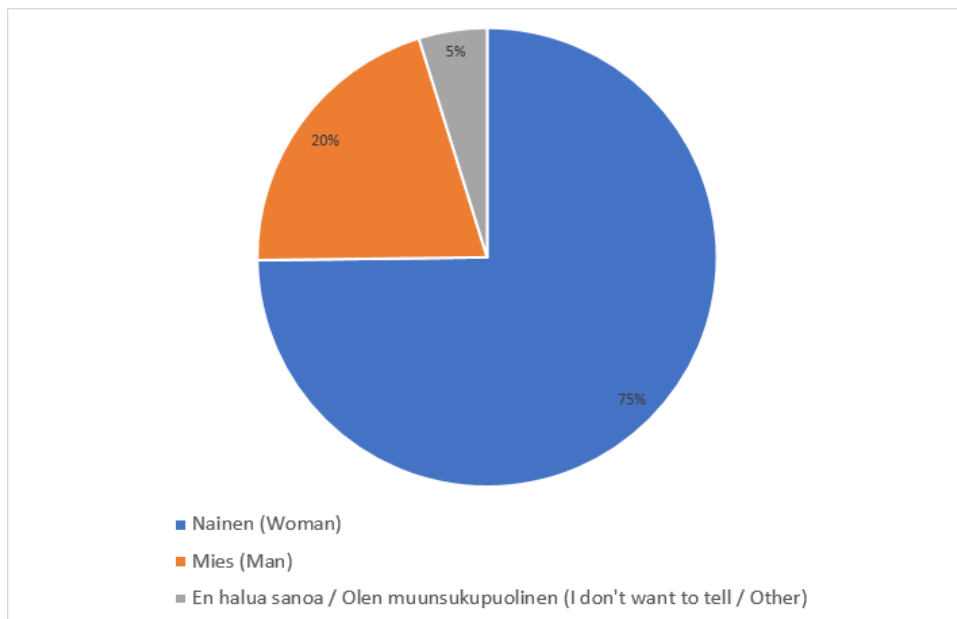


Figure 1. Representation of respondents by gender

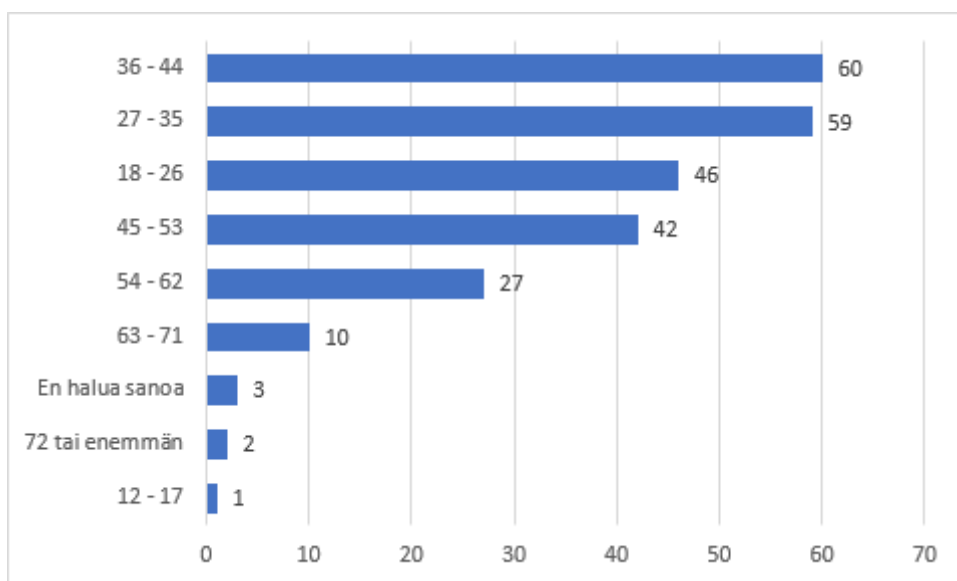


Figure 2. Age distribution of responders

Brief pricing research is incorporated into the survey. The pricing investigation approach is to read consumers' reactions to predetermined price levels. The consumer cannot set suitable pricing on his own by answering some open questions. The character of questioning is "would you buy if..." and "maximum price you would pay is...". The author's pre-set price is limiting because the author might not be using appropriate or realistic prices. The chosen price points are picked by the author's experience in the food delivery market. Another limitation came from the actual economic environment. The business idea birth and the research were executed between the outbreak of the COVID-19 pandemic and the invasion of Ukraine. These major events, with energy and climate challenges, and in

contrast with the 2019 conjuncture, made pricing research inaccurate as the adverse economic effects are hitting the population unevenly (United Nations 2022).

The pricing perception and decisions are related via income to education and employment status. The survey was answered by at least 61% of full-time working respondents (n=156) and 24% of students (n=61) (Figure 3).

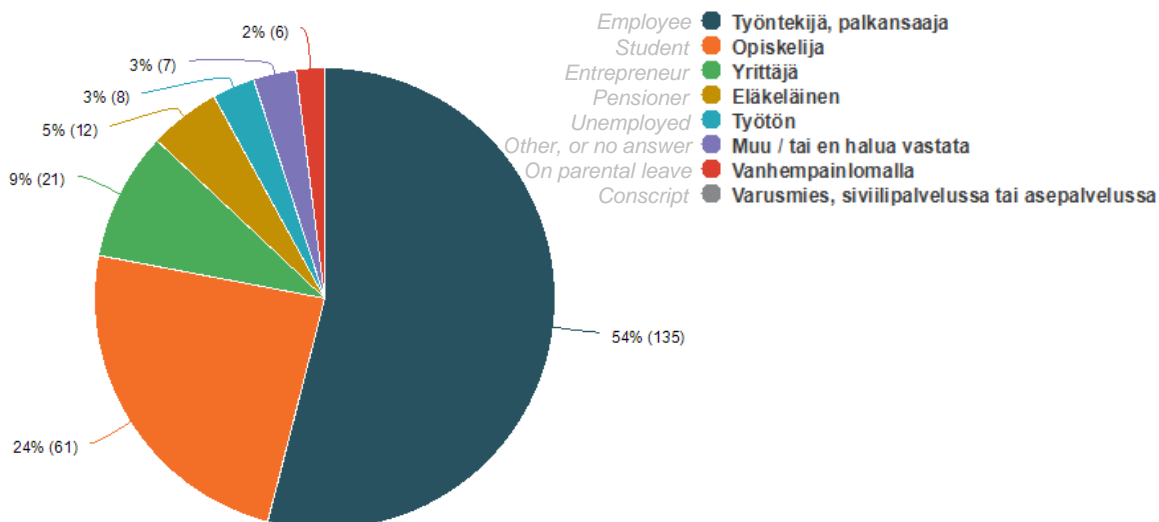


Figure 3. Work-life distribution of respondents

2.4 Research questions and hypothesis

Building a research question is a complicated reductional process. The question capturing the essence of the matter must be subtracted from many other questions. A simplified point of view on the research questions uncovers the basic rationale, whether there is market demand. In other words, will there be customers to the new service?

As for the hypothesis, the author assumes that: **“Potential consumers, knowing the benefits of the novel concept, will be willing to pay for the new service.”**

The main research question is phrased as: **“Is there a market for the author’s business idea?”**

Specifically, is there an available market? What might the target market look like? Is there an obtainable market, and is it large enough? As a researcher, the author collects not only clear evidence and quantitative data but also opinions, estimates, impressions and wishes of respondents, later potential consumers of a new service. To answer the research question, the author compares obtained data with secondary information and the state of the dedicated market in South Karelia.

The research question and the hypothesis show what course the future marketing research and marketing message should take: to explain the inherent advantages of the benefits of the novel concept.

There are supplementary research questions extracted from the benefits of the concept and chained with what the business idea offers:

- 1) Are consumers open to pre-ordering food for the coming days?
- 2) What is the appropriate price range?

- 3) What properties of the product sold are important?
- 4) Is there a quantifiable demand for local products?

2.5 Methods and implementation

The research is conducted by both online and offline survey methods, specifically a questionnaire consisting of quantitative as well as qualitative means of asking and answering. The online survey aiming at different groups is the usual market research method, together with observation, data analysis and measurements. In subchapter 2.3, the author outlined the issues of internet surveys. Nevertheless, doing a survey online is not translated with such an influence on the results anymore. Either way, the pros and cons should be kept in mind (Comley 2008, 403).

Convenience Sampling could be the best description for the sampling method used. The target population for survey sampling are Finnish-speaking individuals in Finland 14 years of age and older. The target population was divided into three control groups: South Karelia residents, Uusimaa, and residents from the rest of Finland (Figure 4). For practical reasons, the survey is conducted in more than just the South Karelia region. Despite South Karelia being the main focus, other regions serve as a comparative anchor. Differences between areas might be a cause for concern with the results and could potentially threaten future business planning.

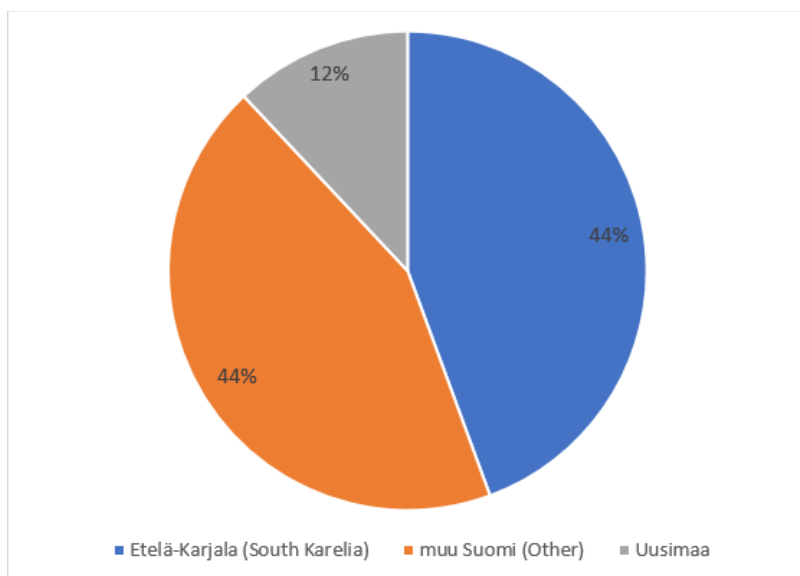


Figure 4. Responders proportion according to region

South Karelia is chosen as the central geographical unit of research because it is the author's home and very likely the region where the pilot project of the novel concept will be executed. According to good research practices, the author considered any number bigger than 50 finished surveys satisfactory, but the author aimed to engage as many respondents as possible. Sufficient sample size and attractiveness of the survey are achieved by a contemporary topic, playful format and relatively simple questioning. Reliability is secured by sample randomisation and careful survey design. Randomisation is supported by using different online channels and social media for sharing the survey and offline approaching respondents in public areas. The author decided to stop collecting survey data when the sample size reached 250 and when South Karelia and the rest of Finland were almost equally large groups.

Before the survey's public release, the testing occurred within the author's lecturers, friends and family circle. The testing helped to rephrase several questions. Webropol online survey application served as the tool for the digital questionnaire. Data received from verbal questioning are written there too. The collection of data will be kept for further research. Statistical analysis by Microsoft Excel supports data interpretation.

2.6 Significance and post-research goals

The impact and outcome of this research are most valuable to the researcher. The researcher is trying to determine whether a market for specific business activities exists. The outcome should be applicable to similar regions in Finland and with some restrictions to similar regions in other Nordic countries. The similarity of areas could be seen, for example, in the ratio of GDP per capita to population density. In that sense, the Ostrobothnia (Pohjanmaa) and Satakunta regions are closest to South Karelia. The author assumes that cultural differences between Eastern and Western Finland are not playing an important role.

After research, the author intends to earnestly continue his business activities in the digital technology and hospitality industry. The study should serve as the backbone of the business plan in question.

This study might be valuable to researchers dealing with similar conditions for market analysis, marketing research and assessment of new business ideas or innovation concepts when a product or service is in the phase before a go-to-market strategy can even be set.

2.7 Schedule and further research

Research preparations including a research plan, pre-research and survey design, were conducted in June 2021 and finalised in November 2021. Survey testing happened at the beginning of December 2021. Own survey was executed from December 2021 to February 2022. The following steps, the data processing, analysis and interpretation, started in March 2022. The final thesis report was closed in November 2022.

3. Concept

3.1 The essence of the Novel kitchen

The author introduces a Novel kitchen, the concept of a unique way of ordering food online, food production planning and supply chain scheduling. Novel kitchen operations allow the food to be prepared at the right time, with the highest possible degree of freshness. Novel kitchen performance is backed by specific management software, connected unconventionally to the sales channel. Unlike any other food delivery application or classic restaurant management system, the goal is to avoid on-demand service completely and provide quality meals for the following days or plan longer periods on a subscription basis. The system presents several benefits to the consumer, which are hard to achieve by on-demand sales without significant cost surges, waste increase and squandering of other resources. Kitchens, restaurants and suppliers have access to the web application interface to gather necessary information and to obtain planning. The system calculates data on a continuous basis. Novel kitchen production steps and planning differ from classic kitchen operations on certain levels (Table 1).

Table 1. Classic and Novel kitchen planning and production steps comparison

	Classic	Novel	Weaknesses/Strengths
Procurement and inventory	Supplies and restocking firmly set, depending on the type and size of restaurant and storage, about 1-3 times per week. Orders and proformas are dealt with usually no earlier than two days in advance. Their content is based on demand forecasting. Under- or over-stocking is frequent.	Supplies and restocking are continuous, based on cumulative data accessible to the supplier. The supplier can adopt a cumulative approach. Ordered amounts are demand-driven. Calculations are based on consumer pre-orders. Minimum over-stocking.	Classic planning depends on inventory possibilities and inventory management. The "first-in, first-out" system is a standard. Novel inventory management is automatized. Supplies are obtained as needed regarding the menu and suppliers' offerings.
Demand and planning	The procurement method and supplier choice depend on forecasting, restaurant concept, storage space and menu. The leading indicators are costs of raw materials, reliability and trust.	The kitchen management system shows the number of portions according to pre-orders. The menu is updated continuously according to season and raw material availability. Reliability and trust are built on the supplier's access to the kitchen management system and cumulative ordering.	Classic planning has strength in relative static procurement and skilled demand forecasting. Raw materials, for a large part, are the same all year round, and purchased amounts are relatively consistent. The novel approach is steering procurement according to the ordering by consumers; thus, detailed forecasting is not needed.
Menu and concept	The concept and menu are core properties from which the supply chain is looked at. The menu is firmly subject to the kitchen concept.	The concept is a byproduct of the menu. The menu is designed according to local sourcing and seasonality. The ingredient list changes dynamically. Ingredients are intertwined across shorter periods.	Classic planning presents an independent menu according to the restaurant's concept or business model. A novel planning menu is determined by those ingredients which can be obtained fresh and sourced locally.
Quality and profit	The quality of food is correlated with profit. The pricing is closely linked to the competition. The market forces are pushing costs up and prices down. Classic kitchen production has a profit margin between 1-9%.	The quality of food is the utmost imperative. The competitors' pricings are neglected on purpose. The service and products stand out. The profit margin can be between 9-19%.	The food quality varies amongst classic kitchens. The quality deteriorates in the call for profit. The Novel kitchen food quality is superb, and the profit margin is better thanks to automatization and stakeholder relationships.

The novel kitchen scheme behaves as a time-dependent automatization working in cycles. The system resolves the supply chain backwards from the consumer's order, through kitchen work, to inbound and outbound logistics and communication with suppliers in real-time. The condition of such a network to perform as intended is the advance order with minimum quantity (Chintapalli et al. 2017, 16).

Waste is an important factor for Finnish climate-conscious consumers. Leftovers, unconsumed bio-waste and perished ingredients constitute almost 21% of all food production in professional kitchens. Approximately 16% of prepared food is thrown away as waste (Luonnonvarakeskus, 2020). In theory, the Novel kitchen can reduce excessive waste. Ultimately, waste and emissions reductions are possible in other stages of the food chain, for example, by pre-planned logistics. The Novel kitchen scheme affects CO2 emissions as well. There are the following contributors to CO2 emissions in the agricultural industry, food processing, production, storage and sales (Katajajuuri 2022):

- factors coming from recipes design (“reseptiikka”)
- efficiency and choice of the processing method according to raw material
- weight dependencies, storage, use of the cooking method and final preparation
- cold/hot chains and cold/hot transport, heaters, refrigerators, freezers
- waste from all stages of the food chain, including packaging
- energy and electricity consumption at all stages of the chain
- communication about the emissions contributors towards stakeholders

The category of restaurant or kitchen purpose is related to waste output. There is an inverse correlation in the waste output of kitchens which produce a final number of portions based on advance ordering or knowing the number of eaters (catering firms, hotels, higher education restaurants). Similarly, there is a correlation between waste output and kitchens where is sales uncertainty, high eater fluctuation or the probability of clients eating a whole meal, or eating at all, is lower (à la carte restaurants, care services) (Figure 5).

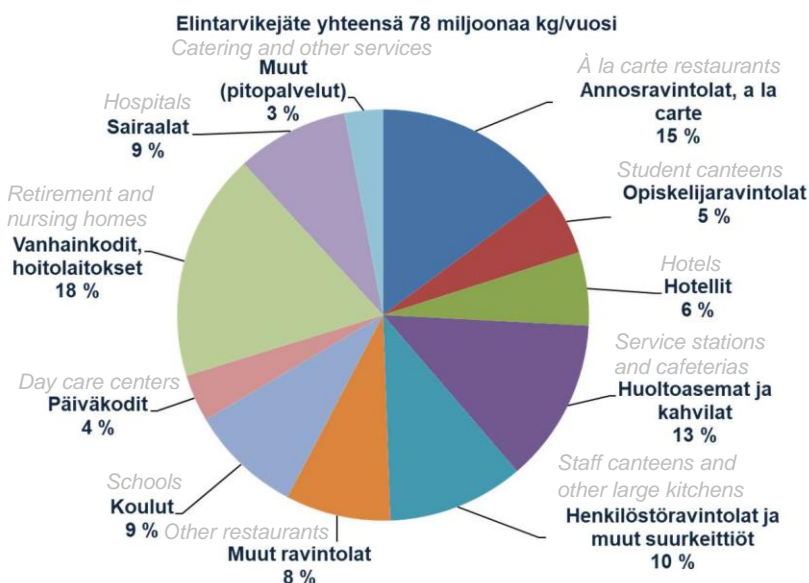


Figure 5. The average share of total food production waste (78 million kilograms per year) by restaurant type (Luonnonvarakeskus 2020).

However, there are other eventualities which affect the serving waste and plate waste. The serving waste constitutes 9,1 % of the prepared food on average (before the food is served on the plate), 5,4% of the waste is from served plates (the uneaten food left) and the kitchen waste share is 1,5%. The waste share varies amongst restaurant categories (Figure 6). Amongst others, lean principles, flow optimisation, better spatial arrangement and progressive layout can reduce overall waste (Gładysz et al. 2020, 13).

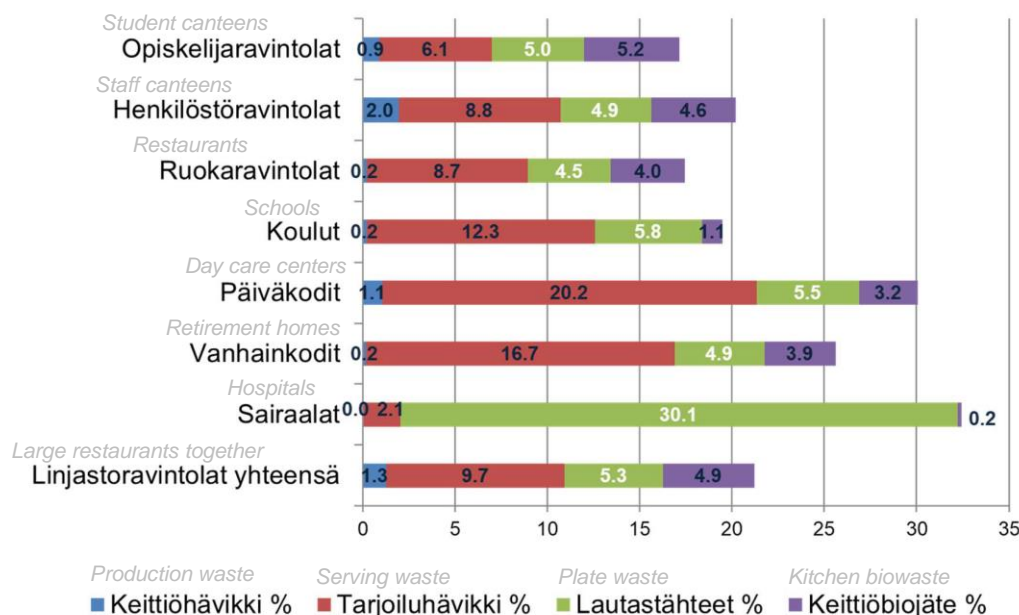


Figure 6. The proportion of waste by restaurant categories (Luonnonvarakeskus 2020)

3.2 Consumer's perspective

Over the last decade, consumer behaviour has been influenced by several factors and new phenomena. The events outside of the market, such as the Fourth Industrial Revolution, Climate change and the COVID-19 pandemic had a direct impact on supply chains and purchasing behaviour. The in-market events, such as the boom of mobile devices, the Internet of Things, growth of connection bandwidth and decreasing cost of the connection, have many implications, for example, the elevated customers' aggregate spending, though not all implications are to last indefinitely (Oblander & McCarthy 2022, 6).

One of the critical indicators of a consumer's purchase completion is the price. Pricing is not only a marketing strategy but also a strategy to increase demand. A special pricing optimisation method is dynamic pricing. One example of dynamic pricing is reverse surge pricing based on real-time demand tracking and off-peak discounting (Merzouk 2018). Real-time discounting may be the answer to the ending of a product shelf life, like in the case of the Canadian FeedBack programme, where a form of "food rescue" is integrated. Discounting ready-made food which is about to be thrown away is the domain of the Finnish ResQ company.

Advance payments and pre-ordering are not strange behaviours to consumers. Pay-in-advance existed in various settings and for specific situations, usually complementing another process on the market, like paying for group orders. Behaviourally, paying degrades the hospitality experience for the simple fact that paying is not an enjoyable process and comes right after the experience (Nussbaum 2013). Advance payments became a tool for managing risk before the COVID-19 Pandemic (Moskin 2014), (Kayal 2015). Ordering in

advance might positively impact healthier choices (Samek 2019). The question is whether online ordering in advance forces us subconsciously to order more (Ungerleider 2014).

From a business perspective, the consumer is not buying just food but other benefits like convenience, time and experience. The research question encompasses the dilemma of whether the consumer would expressly buy those benefits provided by Novel kitchen. The value-generating process on the customer's side is conditioned by an understanding of those benefits, like a healthy gut biome, balanced diet, the possibility of personal planning, support of local suppliers, ultra-low risk of malign ingredients, close to zero waste production and finally carbon footprint reduction (Grönroos 2005, 3-5). According to research made by Kespro, 61% of Finns are interested in smart food delivery services that deliver restaurant meals based on diet and health, 57% of Finns could be ready to adopt technology that personalises food choices, and 64% of consumers in Finland would be interested in a technology or service that would allow them to identify the origin of food (Kespro 2020).

3.3 Business customer's viewpoint in a brief

The author understands a business customer as a legal person needing services produced by the Novel kitchen concept. An example of a business customer is a company without an eatery or a company in need of everyday or occasional catering. Beyond the concept's apparent benefits, long-term planning and continuous engagement could be an exciting advantage for both the customer and the provider. Business customers can take the role of steady cash flow sources, which is in harmony with the Novel kitchen concept, as planning is natural to companies.

3.4 Digitalization and Software development

Production, sales and distribution of food for immediate consumption rapidly developed in the 21st century. Innovations like supply chain remote control, kitchen automatization, restaurant management software, digital POS, online ordering, food delivery applications and ghost kitchens proved favourable to businesses and consumers and showed considerable market use. This development at all levels has a common driver: digitalisation.

The digitalisation of business processes and software representation or software components of the product are part of the author's business idea's initiation, evolution and materialisation. The software programme is an integral part of the business because the business operations would be costly, slow and laborious to manage by phone, pen and paper. Software interactions with consumers and business customers can be used for collecting data. Data-driven business planning and marketing became the norm. Strategies for data analysis, management and utilisation had to be incorporated into the business idea at a very early stage because they define the nature of the business and such strategies are essential for start-up companies (Sirkiä 2020, 30).

Software development incurs inevitable costs, which can be diminished by choosing the suitable development method, using free development resources and convincing developers to work for free, for equity in the future company or for study points in case the software is developed as a project in co-operation with an educational institution. The author had the chance to use all his knowledge from his previous freelance work for digital start-ups, game companies and media enterprises and the opportunity to learn what it means to be a Product Owner in an Agile manner. Software development brings a whole range of unthinkable challenges, and some decisions can have unforeseen consequences that may

prolong the development and incur additional costs. The analysis matrix provides better insight into the software development stakeholders' perspective (Table 2).

Table 2. Software stakeholders' analysis matrix

Stakeholder	Company	Consumers	Kitchens	Suppliers	Distribution
Impact	High	Medium	Medium	Low	Medium
Influence	High	Low	Medium	High	Low
Importance	Get a working version	Get a better new service	Growing sales	Growing sales	Growing sales
Contribution	Architecture, Requirements, Feedback	User testing, Feedback	B2B testing, co-development	B2B testing, warehouse data	Network testing, Feedback
Blocking	Changing requirements	Not using the product	Not wanting to test it	Not wanting to contribute	Too difficult to implement
Strategy for engaging the stakeholder	Weekly meetings, demo sessions	Gathering users for testing	Making sure they understand the benefits	Making sure they know the benefits	Making sure they understand the benefits

The software development is carried out using the SCRUM method, and the product in question is a special case of a web application. A key characteristic of such a web application is responsiveness and cross-browser and cross-device compatibility. The software design has involved 11 developers in the course of two years. The end-consumer user interface and application views are programmed within the Node.js environment and designed by React framework. The business processes are programmed within a Microsoft .NET environment and designed by the Blazor framework.

The critical parts of software product development research are quality assurance, security testing, usability testing, data usage testing and different measurements aimed at responsiveness and compatibility. Such analysis is omitted from this thesis as the tests are technical and were not all viable because a certain number of users is needed for the tests to be verifiable.

4. Impact

4.1 Positives of digital food ordering and delivery

The consumer is the clear winner of the competition between delivery applications. Due to customer acquisition campaigns, the consumers were served with discount coupons, free delivery and sometimes even free meal. The boom of food delivery applications brought new work positions and workplaces.

From the perspective of restaurants, ordering online might subconsciously push the consumer to order more. Consumers have a better overview of the restaurant menu and special offerings. This supports upselling, unlike ordering by phone (Ungerleider 2014).

Satisfaction of convenience demand by any doubt increased. User experience design of delivery apps supports quick and easy ordering. "Appetite comes with eating", in other words an increase in availability makes convenience purchases standardised behaviour after consumers overcome the unhealthiness factor and the feeling of guilt (Lee et al. 2022, 2).

Having food delivered during the period when the consumer does not have the time to cook or cannot obtain food any other way, for instance during lockdowns, is seen as a benefit to consumers (Li et al. 2020, 13). Food has as well an entertainment function. Having meals spontaneously ordered and delivered to parties, meetings and reunions is a welcomed advantage.

Keeping restaurants operational and saving the jobs of restaurant workers during lockdowns is considered a positive influence. Providing economic activities for those who could not get a job, for example because of their language, could be seen as a beneficial impact (Asikainen 2019; Li et al. 2020, 13).

The impact of delivery apps on restaurant turnover is on the positive side, although the growth of turnover is not a predictor of business success.

4.2 Drawbacks of digital food ordering and delivery

The normalisation of fast food as something to eat daily brings socio-economic and healthcare-system impacts, mainly negative and out of the scope of this thesis. Not to mention the increase in waste and CO2 emissions, which are hard to assess precisely. The American National Center for Health Statistics suggests that the higher one's income, the more one consumes fast food. (Fryar et al. 2018, 3). On the other hand, in countries with a high standard of living, like Nordic countries, fast food is sometimes perceived as a cheap treat for teenagers and people who cannot afford to eat in à la carte restaurants.

Analysis paralysis and especially the paradox of choice are drawbacks of food delivery apps. Immediate price comparisons and multi-item complex menus from many brands simultaneously discourage quick and comfortable purchases while contra-intuitively perceived mainly as beneficial to consumers (Pareek 2021).

While international fast-food chains are based on economy of scale and quick sales, and the food delivery apps are in harmony with their business model (among other things, characteristics like cheap labour, high employee turnover, basic cooking skills, pre-cooked ingredients, semi-finished products, minimum menu variety to name a few), small family restaurants or independent local restaurant brands are suffering with increased costs of elevated production coupled with up to 30% provision (Goldstein 2019; Manning 2020).

During the Pandemic in 2020 and 2021, some cities incurred labour regulations and controversial provision caps on food delivery companies, damaging their business model (Rosner 2021). The negative effect on employment and capital investments came with artificially hyped demand caused by lockdowns and market saturation. This led some delivery companies to cease operations due to the natural market auto-correction (Lynn 2021).

There is the question of gig economy labour. Could an activity be considered entrepreneurship if the courier completes tasks only for one company, under their branding and with their operational software (Rintala 2019; Meaker 2022)?

The occurrence of so-called “unpaid work hours” is chained to food delivery (Maury 2021, 76). From a courier perspective, food delivery increases the possibility of exposure to coronavirus (Li et al. 2020, 13).

In Finland, even well-established restaurants focusing on high-added value, with increased sales in hundreds of thousands of euros, could not create profit using food delivery apps. The problem is partly caused by consumers who got used to very low delivery prices or have the delivery for free (Aaltonen 2021). Unlike big food chains, small businesses are disadvantaged in negotiating better conditions with food delivery companies (Li & Wang 2020, 34).

The author is pessimistic about the business model of food delivery companies. From a macroeconomic point of view, the whole model assumes that even if a company successfully conquers different markets through venture-based hyper-growth, it will still retain loyal and committed consumers. The local growth has been achieved by spending on marketing campaigns with unreasonable loss results. In the author’s humble opinion, the projection of noticeable loss after marketing campaign execution is a disputable strategy, especially when there is no conclusive evidence of retained consumers.

With limited exceptions, the food delivery markets were not profitable even at the peak demand in Q2 2020. That should be an ample warning for any industry. Another assumption is that investors' pockets are bottomless and can cover top management earnings thousands of times the average wage.

An obscure premise that chefs in restaurants “possess superhuman skills” or that the kitchen can significantly increase its output without adding extra staff was as well cause for quitting jobs. With a 30% deduction from sales, cooks are still forced to work more, but for the same pay, as orders are pouring in at peak times. This causes overwork and might lead to burn-out syndrome or worse.

The economy of scale leans on continuous market growth and a never-ending stream of new consumers. Right now, the opposite is happening. According to the author’s humble opinion and demographic forecasts, it will not change much in the foreseeable future.

5. Market

5.1 HoReCa in Finland

Description of a market, its history and observing relations between market factors, market players and consumers can be seen as, though only superficial, competitor analysis. “Competitor” by no means should be understood only as a rival, but as well as a protentional ally in many cases. Term HoReCa represents Hotels, Restaurants and Cafés. It is not defined accurately internationally. The definition varies amongst countries. Sometimes it is used as an umbrella concept for the hospitality industry. Sometimes it covers food production within the hospitality industry and occasionally it is used only for foodservice businesses supplying hospitality players. HoReCa operations have relatively high standards in Finland but are concentrated mainly within cities. Common denominators are exceptional safety, comparatively outstanding service and product quality (Ruokavirasto 2021, 4). The HoReCa sector in Finland is largely import-dependent, not only due to seasonality but also because of cost-control factors. The sector comprises small independent operators, micro and small enterprises, and national and international chains.

The number of professional kitchens in Finland varies among researchers, most likely for the fact that the “professional kitchen” is not a well-defined unit. The serving and distribution kitchens are not always considered. According to The Finnish Grocery Trade Association (PTY), there were 16143 professional kitchens in Finland, which prepared 749 million meals in 2020. (Päivittäistavara-kauppa ry 2022, 7). As restaurant purchases declined during the Pandemic, a new phenomenon amongst wholesalers occurred: online sales to end-consumers (Kantola 2020). Even though pandemic restrictions have been eased or lifted altogether in many cases, this trend has not entirely disappeared.

5.2 Professional kitchen management systems

Kitchen management systems have a collaborative potential with Novel kitchen. Professional kitchen management systems are often cloud-based digital information systems whose primary function is to operate large industrial kitchens. The software integrates steps in food production and sometimes contains ERP and CRM systems. Important practical features are recipe management, cost control, menu planning, inventory management, food safety, nutrition management and waste management processes. In Finland, the most spread brands are CGI Aromi, Jamix and Aivo (Talvitie 2014, 28). There are also customised, business, healthcare or municipality-limited internal solutions (Tikkanen 2013, 23). For example, in South Karelia, the Jamix is used in Kampusravintolat Oy.

All the above-mentioned kitchen management systems handle supplier, purchasing and inventory data. As a modern software product, they can send respective interface endpoints known as API. Such data can be requested and received synchronously and asynchronously (call back). In other words, such software is “equipped” to communicate with other software applications. Thus, it could be potentially integrated into Novel kitchen or vice versa.

5.3 Professional kitchens in South Karelia

According to various sources, there are about 300 professional kitchens in the South Karelia region, including distribution kitchens, cafés, hotel kitchens, catering businesses and food kiosks. About 180 kitchens are private businesses existing solely for the purpose of

producing food. Other professional kitchens are part of different companies. The number of professional kitchens is also hard to establish because restaurant businesses have a high failure rate. There is a large variety of restaurants in concept, size, and purpose. There is secondary schooling for chefs and higher education for restaurant managers. The author has found at least three restaurants where the Novel kitchen could be piloted. Negotiations with one particular restaurant led to an agreement of cooperation.

The biggest threat in 2022 for restaurant operations, which applies to the whole hospitality industry, is a lack of workforce. The restaurant industry has not always been poorly staffed. Problems began slowly to emerge in 2016. The situation continued to deteriorate until 2021 when it became a real national issue (Helsingin seudun kauppakamari 2021). One of the main reasons was that restaurant workers found different jobs during the Pandemic and did not want to return to the hospitality sector. A significant drop in the supply of workers came in 2022. With high energy costs, lack of labour became another cause of restaurant closures (Ranta, 2022). Unless the salaries and working conditions in Finland will not significantly improve, the shortage of skilled workers in the hospitality industry might be terminal for many businesses. It is damaging the entire market's reputation, leading to difficulties in acquiring new students (Viinikka 2022).

5.4 Suppliers and distribution in South Karelia

Before 2020 in Finland, the demand for locally produced food grew steadily. However, only a marginal share of local food is sold under the local food concept (Marttila 2016, 15). Suppliers experience easier sales to restaurants than end-consumers (Heikkilä 2014, 21). Different brands and enterprises use freshness as a marketing article in an extensive line of products across sales channels, but consumers have a vague understanding of freshness. In the research survey, 155 respondents described freshness and what "fresh" means. One-third understand the state of being fresh as the opposite of being frozen.

A great deal of the theses shows the following similarities in their findings (Tiesalo 2011; Shalkovskaya 2015; Kyyrö & Perko 2017; Hirs 2017; Järvinen 2018; Salonen 2018):

- suppliers favour traditional approach in sales, especially direct sales
- organic food or local food is sometimes marketed by inappropriate channels
- the suppliers and restaurants do not know about each other
- suppliers do not have leverage for better product placement in stores
- there is no widely used signature or symbol for local food recognition by consumer
- poor coordination of local producers from a logistic viewpoint
- pricing inconsistencies and sudden, unpredictable changes towards restaurants
- lack of transparency in the whole supply chain

In 2012, there were 97 food processing enterprises in South Karelia (ELY-keskus 2012). An upward trend can be seen because there were 27 enterprises more in 2020 (Aitoja makuja 2020). The pandemic and conflict in Ukraine causing economic turbulences hurt a number of farmers, producers and other suppliers. The exact number of bankruptcies and closures by the time of completing the thesis has yet to be discovered. Some bankruptcies were connected to businesses where an immediate high energy supply is needed, like natural gas-driven productions.

The tradition in Finland unveils the grouping of farmers, producers and suppliers into unofficial and official forms of organisations. Another practice is the so-called family enterprises, “perheyrytykset”. Companies and their organisations are further connecting nationally into bigger national associations. Public limited companies and co-operatives are represented across regions. In the South Karelia region, all major national food service groups and co-operatives have been present in some form for at least the last 70 years. Some companies fused with their bigger competitor because of the 90s depression in Finland. For example, Etelä-Karjalan Osuusmeijeri merged into Osuuskunta Tuottajain Maito in 1992. Their output is dedicated solely to Valio milk processing, storing, distribution and sales network. Kesko running the Kespro wholesale food service hub in Lappeenranta has a tradition going back to pre-war Savo-Karjalan Tukkuiliike (K-kauppiasliitto 2022).

The most nuclear element of the official grouping is the co-operative, “osuuskunta”, which has an exceptional role in Finland. It is part of the social process, shaping the country’s economic system and future development (Kuisma 1999, 17). A co-operative has different ownership and voting structure than a limited liability company. Regarding food co-operatives in a broader co-operative management model, we can talk about a producer co-operative or “tuottajaosuuskunta”. Members of a co-operative are connected by the same ingredient or product type (milk, potatoes, eggs, berries, fish) while sometimes based on a common geographical denominator (city, piece of land, historical region). Buyers are end-consumers or consumers’ co-operatives. Co-operatives can act as exclusive suppliers to other businesses. It is important to emphasise that food and consumers’ co-operatives are often firmly chained by special contracts. The best example of this ecosystem is S Group which gathers co-operatives and supporting services into SOK Corporation (Suomen Osuuskauppojen Keskuskuunta). Out of the scope of the cooperation model, similar contracts exist between private suppliers and wholesalers, like in the case of Kesko.

In South Karelia, Palvelutukku Kolmio is a food service wholesaler belonging to the national Suomen Palvelutukkurit (Patu) food-service network. Wihuri Oy Aarnio’s Metro wholesale was active in Lappeenranta but ceased operations after six years in the spring of 2021. Meira Nova and Valio Aimo (which obtained Heinon Tukku Oy) also have customers in South Karelia. Kespro is the most significant player as a food service wholesaler in South Karelia.

The concept of local food distribution, Ruokarengas or REKO, has been growing in popularity recently in South Karelia as well (Heikkilä 2022). A short supply chain layout, close collaboration of suppliers and self-organising of consumers in the form of REKO has been represented in the Finnish local and organic food market since 2013 (Hietakangas 2018, 4).

Local development and advisory organisations play a significant role for farmers and producers. Such an organisation is Pro Agria, which has regional branches and is vital for rural agriculture.

The author has enlisted 70 micro and small businesses growing or producing food. The author agreed with a modest number of suppliers to pilot the Novel kitchen concept. The respective raw materials were different kinds of meat, mushrooms, berries, plants, vegetables and fruits. The finished products concerned were various meat and milk-based products, canned goods and beverages.

5.5 Ordering and delivery solutions in South Karelia

Delivery schemes and solutions in South Karelia could be divided into private and public. Among the private, big enterprises with their own kitchens and eateries often provide lunch distribution on-premises. Such lunch can be subsidised by the employer. As private delivery solutions, the own delivery services of restaurants and services of so-called online food delivery companies operate. Online food delivery companies, as highly commercialised and venture capital-backed services, are usually not sharing localised data about their sales. The author dedicated chapter 4 to these services, focusing on overall positive and negative impacts.

The public services or public catering can be subsidised by the state, municipality, pension fund, trade union or special union, like the Union of Frontline Veterans or Finnish War Veterans Federation. Public catering can be divided by company type, profit allocation, location or by consumer's age and status: day-care, comprehensive schools, vocational and upper secondary schools, military conscription, higher education facilities, public sector workplace, elderly and disabled care catering services, care homes, sheltered homes, retirement and nursing homes and hospitals (Silvasti & Tikka 2016, 27). The prominent distribution model is meals on wheels (ateriapalvelu). Such services in Lappeenanta provide Lappeenrannan palvelukeskussäätiö sr, Eksote, Saimaan Tukipalvelut Oy, Lounaskahvila El´Si Ky, Hyvinvointi Saraste Oy and many other smaller providers. Similar services can be found in Imatra. There are local providers in other municipalities too.

6. Analysis

6.1 Feasibility assessment

Assessing a market, which is going through structural changes, a market without clear straight competitors and any measurable company output, like sales, is extremely difficult. There are tools, tips and manuals on how to plan business development and execute marketing research and market analysis in the case of traditional company form, classic product or service. For example, in the case of a restaurant, there are different kind of studies to perform calculations and selection criteria which are empirical in their nature, as a restaurant is an old concept which is known to the general public, have long business history and criteria for success are commonly known (Nykiel 2007, 97).

The prepared food market in Finland is developed, condensed and safe, with solid anti-monopoly control. Due to the COVID-19 pandemic, the Ukraine tragedy and uncertainties in the industry direction after 2020 caused by bizarre financing environment, uncommon weather conditions, high input cost dependence, somewhat smaller profit margins and relatively high employee fluctuations, the predictability and efficiency of the author's target market is weak.

By conceptualising the uncertainty factors within macro-level thinking and applying the theory of financial markets, past market endeavours could not be used in the analysis because past returns do not guarantee future profits and vice versa (Brealey et al. 2017, 332). On the micro level, the feasibility could be grasped by more distinctive lines. Entry of the Novel kitchen concept into the target market segment offers customers clear benefits superior to the actual supply. The size of the segment and its future growth are not apparent, but entry to the target segment might open access to other segments in the future (Mullins 2010, 28).

6.2 Product demand and consumer behaviour

One of the market analysis goals is to determine buyers' habits. How did they become aware of the product? What is the nature of their demand? How are consumers' attitudes changed by communication and advertising (Birn 2004, 84)?

When the company product is not on the market yet, the analysis could be performed in the most similar markets, comparable economic areas, with products of the same character. The nature of buying decision processes can be displayed according to certain criteria and classifications. The criteria could be set by a wide range of different methods, but the common determinant must be product demand. Classifications are descriptive and firmly set with each buyer (age, nationality, race, sex). What can be assessed is a target, the typical consumer. In normal product-market-fi conditions, the target consumer's behaviour can be studied and actions measured. In case the service is not yet on the market, we talk about the future projection of the target consumer:

- Age & Nationality: 33, Finnish
- Gender & Family: Female, with two kids, partner
- Location: Within the city, out of the city centre
- Income: Median and higher
- Occupation: Office, public sector

- Education level: Secondary

According to aggregated research on COVID-19 impact on consumer behaviour, consumers had shown less behaviour change in Finland. While half of the consumers struggled financially, about half increased bulk buying. Online shopping, convenience food and fast-food consumption increase combined with minimum change in household dining habits indicate that Finland was already high in digital food ordering consumerism; only the balance point changed on the income distribution axis (EIT 2020). Therefore, it is reasonable to conclude that consumers who could afford convenience on-demand have spent more during months affected by the pandemic.

The research survey's primary purpose is to unveil the behaviour of consumers in Finland, specifically South Karelia, in relation to their eating habits and buying behaviours. Secondary aims outline the decision-making process and the need recognition. Besides the survey results and modern approaches, helpful business analysis tools can be extracted from a range of "classical methods".

6.3 Classic methods of business analysis

One method for determining the attractiveness of industry and business possibilities is the Five Forces by M. Porter (Mullins 2010, 13). The overview of the method's affiliations in relation to the author's business idea renders an immediate red flag. From a macro-level perspective, the restaurant and food delivery industry is not profitable. Even start-ups with significant capital backing are struggling to generate profit. After a closer look at each Porter's forces from a micro-level perspective, the relative balance between supplier and buyer power, the advantage of quick digitalization and overall technological progress are in favour of suitable business conditions.

The author does not show SWOT and PESTLE analyses in the thesis, as there are vital for business and marketing plans and thus are considered a part of the business secret. The author prepared two SWOT analyses, one for the software part of the business and the second for the operational part. However, the author partially reflects these analyses' results in the thesis's conclusion.

Product analysis is the analysis of the software product enabling business operations. Local sourcing analysis examines how stakeholders, suppliers, professional kitchens, and distribution solutions interact with each other against the backdrop of business relations. Even though the author obtained limited feedback from product testers, farmers, producers and restaurant managers, there is not enough information to make complete closure.

7. Findings

The author wishes not to disclose all the results and findings. Presented are essential results for the author's thesis, selected by the best conscience. The difference is noted if a significant deviation between regions, employment status, education, gender, or age occurs.

Digital User is a respondent who has experience ordering ready-made food digitally in 2021. It is assumed that the Digital User has information technology prerequisites, such as the use of smartphones, basic computer skills and an understanding of online communication and digital payments at a standard user level.

The frequency of eating a warm meal determines the primary demand for a new service (Figure 7). Two warm meals per day is not a rare behaviour. The frequency of two hot meals per day is declining with age.

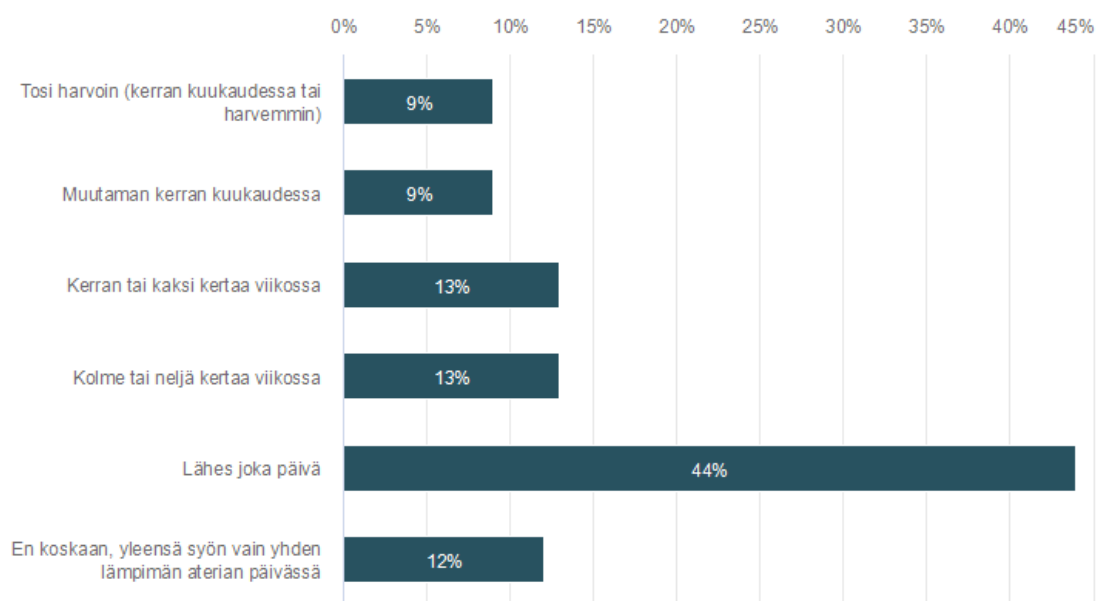


Figure 7. "I eat two hot meals a day..." (Finland n=250) Q5 [*Tosi harvoin (kerran kuukaudessa tai harvemmin) = Very rarely (once a month or less); Muutaman kerran kuukaudessa = A few times per month; Kerran tai kaksi kertaa viikossa = Once or twice per week; Kolme tai neljä kertaa viikossa = Three or four times a week; Lähes joka päivä = Almost every day; En koskaan, yleensä syön vain yhden lämpimän aterian päivässä = Never, I usually only eat one hot meal a day*]

How far into the future are consumers planning their lunch? Planning of meals verifies the basic demand for a new service. Roughly every fifth consumer does not know what is for lunch the next day (Figure 8). The certainty of knowing what is for lunch the next day is growing with age.

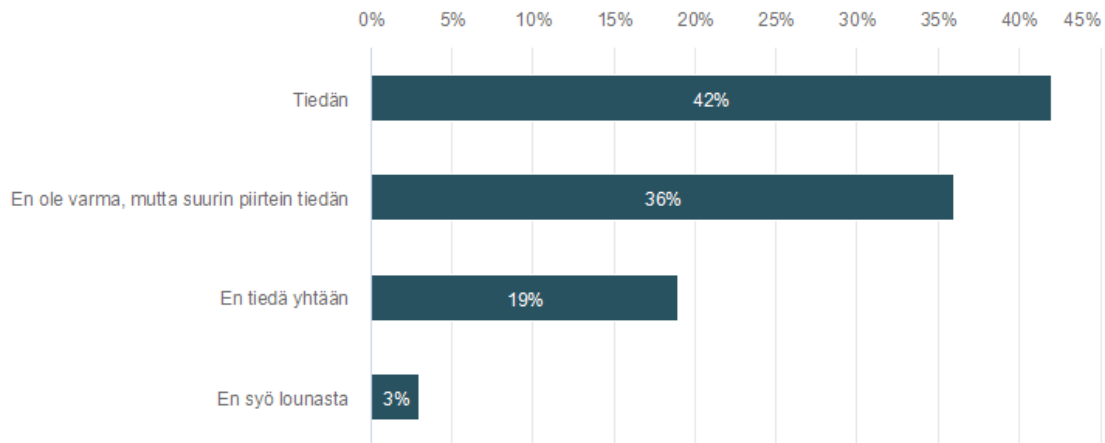


Figure 8. Do you already know what you are having for lunch tomorrow? (Finland n=250) Q7 [*Tiedän = I know; En ole varma, mutta suurin piirtein tiedän = I'm not sure, but I more or less know; En tiedä yhtään = I have no idea; En syö lounasta = I don't eat lunch*]

The following question is closely related to the previous one. Both results pose significant importance for the business idea. Roughly two-thirds of consumers know when the lunch will be served tomorrow (Figure 9). The proportion of respondents with higher education who could tell the lunch hour was noticeably higher.

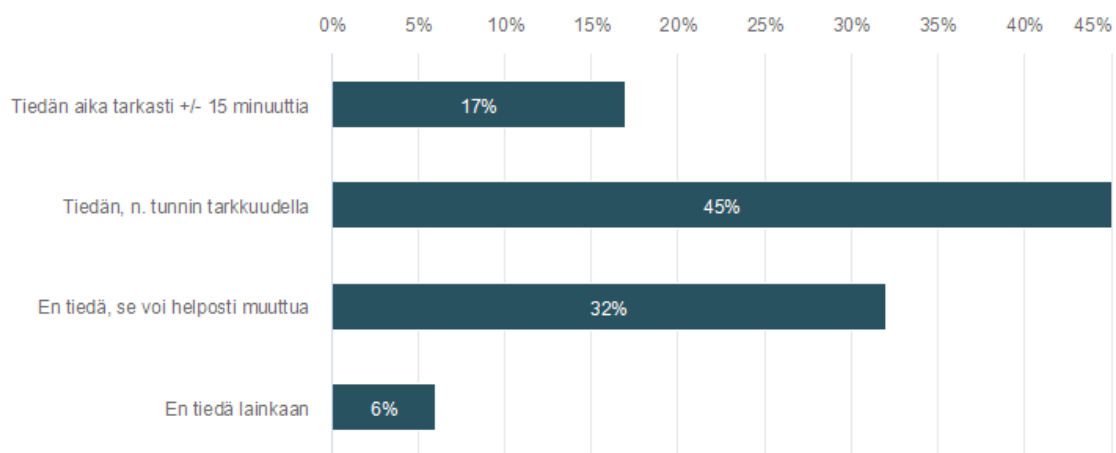


Figure 9. Do you already know what time you will have lunch tomorrow? (Finland n=250) Q8 [*Tiedän aika tarkasti +/- 15 minuuttia = I know pretty well +/- 15 minutes; Tiedän, n. tunnin tarkkuudella = I know, roughly to the nearest hour; En tiedä, se voi helposti muuttua = I don't know, it can easily change; En tiedä lainkaan = I do not know at all*]

Ordering food online during 2021, at least once tried roughly 61% of respondents (n=152). The term Digital User is reserved for them. 41% of these Digital Users had ordered online at least once grocery shopping (n=62) (Figure 7). The proportion of active Digital Users was higher amongst highly educated and considerably higher amongst Uusimaa residents. However, 16% of respondents who had not ordered a prepared meal online during 2021 had ordered groceries digitally.

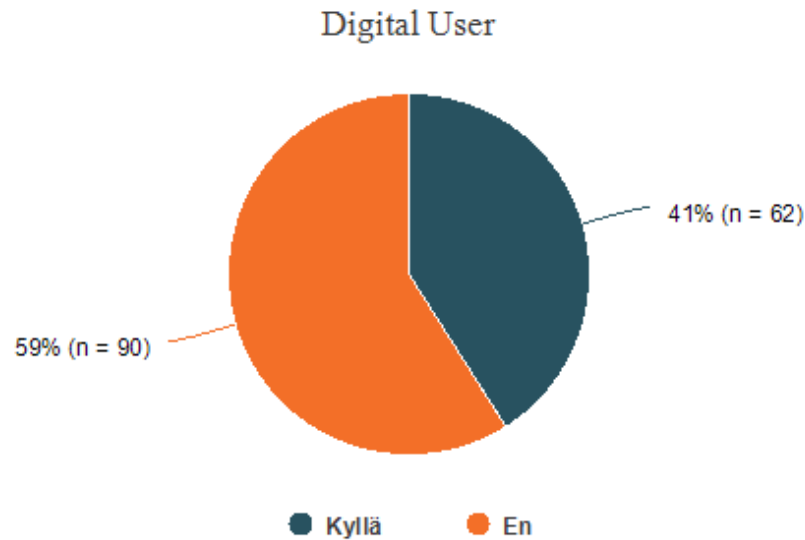


Figure 10. Have you ordered groceries digitally during 2021? (Finland, Digital User n=152) Q18 [*Kyllä = Yes; En = No*]

45% of Digital Users had tried pre-ordering at least once (n=69) (Figure 11). About 12% of respondents who never ordered food online have an experience with pre-ordering in offline form (n=12).

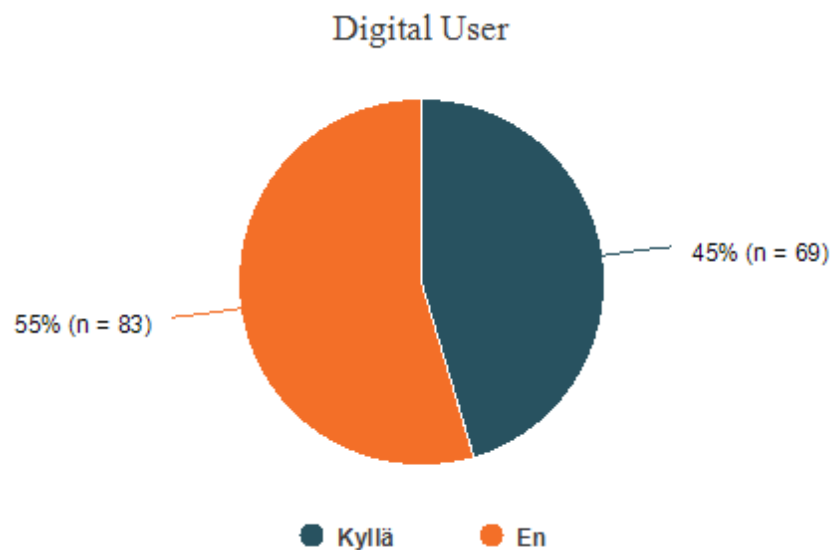


Figure 11. Have you ever used the pre-order service (ordering in advance for the date and time you want) (Finland, Digital User n=152) Q25 [*Kyllä = Yes; En = No*]

Highlights from the survey findings follow. Systems of saving unsold cooked food from restaurants like ResQ Club are mentioned in one way or another by 9% of respondents. 44% of respondents had never heard about the REKO concept (n=110). About 21% of respondents are unfamiliar with “Ateriapalvelu” (meals on wheels, lunch-to-home distribution). Ruokaboksi was tried by 9% of respondents (n=22). About 11% of the respondents work in the restaurant industry or have worked professionally as a waiter or chef at least once in their life (n=54).

Approximately 16% of respondents have not eaten in any form of eatery or restaurant during 2021 (n=39). At least once during 2021, about 61% of respondents ate in a fast-food restaurant (n=152). 49% of respondents dined in non-ethnic traditional á la carte restaurants (n=122). The conventional food ordering methods, like calling to a restaurant or simply ordering takeaway at a place, constituted a preferable method amongst almost 38% of respondents (n=94). 27% of respondents never used an app or a website for food ordering (n=68).

Only barely 3% of respondents are strict vegans and do not eat animal-based products (n=7), while little above 78% are all-eaters (n=196). Nevertheless, 16% of meat-eaters are avoiding red meat. The most prominent special diet condition is lactose intolerance amongst 22% of respondents (n=55). Experiences with variants of ketogenic or low-carb diets were represented by 9% of respondents (n=23). FODMAP (fermentable short-chain carbohydrates diet) was mentioned six times.

According to the responses obtained and the respondents' comments at the end of the questionnaire, broader conclusions regarding the pricing of ready-made food cannot be described and justified. It could be said that, in general, consumers are very price sensitive, and at the same time, they expect the price to reflect the quality and quantity. For a single high-quality ready-made meal ordered once a week, a price of 24 € could be set as “the pain threshold”.

8. Interpretation

Findings show that there is some market for the business idea, but the size of the market and share of the target market need to be calculated.

Considering individual respondents, the composite of results is transformed into the following domains: whether the respondent has a clear dining schedule, whether the respondent was a Digital User, whether the respondent possesses an experience with pre-ordering and whether local sourcing and freshness are not the least important qualities. Further, whether the respondent's top priority is not the price and whether the respondent is willing to pay more than the minimum in offered options.

By tables-filtering (funnel, inclusion and exclusion criteria) of critical results in a group of

- a. all respondents (n=250)
- b. who ordered food digitally in 2021 (n=152)
- c. has experiences with pre-orders (n=69)
- d. to whom local food is an important attribute and who would pay more than the minimum offered price (n=37)
- e. to whom freshness and local sourcing are not least important qualities, while the price is not the most critical factor (n=18)

the share of target consumers is 7,2%. For the control sums in city areas, like the Lahti group, the group of Helsinki, Vaasa and Espoo and finally the group of Lappeenranta and Imatra, the share of target consumers is higher, between 7,3% - 7,9%. Therefore, with a certain level of deviation ($\sigma = 0.245$), the author constitutes 7,5% as the final share.

The share applied to the economically active population in Lappeenranta and Imatra results in about 4350 consumers as the target market size, which is not far from the author's analytic guess of 4500 potential consumers in chapter 2.3.

67% of target consumers responded that they would welcome service that provides benefits such as quality, local, fresh meals without preservatives. They will continue using it constantly if there is discounted planning for more extended periods, like one week. The author establishes these respondents as Early Adopters (n=12). The Early Adopter embraces new service naturally and quickly. He has no issues obtaining it and is tuned towards service without being targeted by a marketing campaign. In the case of this thesis, the Early Adopter is a consumer who responds positively to all questions considering the business idea.

There are two kinds of problems with the previous process: the issues which are in favour of a more significant market share and issues which are against it:

- consumers who never ordered digitally might do so if they have a good reason to
- consumers without pre-order experience can accustom if specific parameters of the purchased service are fulfilled
- eco-thinking and sustainability-aware consumers who never ordered digitally could think about it only as a mean of obtaining fast-food
- consumers who value freshness, healthiness and local aspects of food could pay a higher price in contrast to the spending for fast food

- even though the benefits of the new service will be well marketed, there is uncertainty whether advance payments and pre-ordering model are easy to adopt

By tables-filtering (funnel inclusion and exclusion criteria), when the concept of Digital User and pre-ordering are not taken into account, within a group of

- a. respondents from Lappeenranta and Imatra (n=103)
- b. who would welcome a service which provides the Novel kitchen benefits and who would carry on using the service during busy days (n=49)
- c. for whom the freshness would not be the least important quality (n=31)

the share is about 30% of consumers, which is the available market of 14700 residents.

The available market share for the Novel kitchen concept in Lappeenranta and Imatra constitutes roughly 30% of economically active residents. The target market share is represented by approximately 7,5% of the economically active population. 5% of the economically active population aspire to become Early adopters, later loyal consumers, using the service continuously if it meets their expectations.

Among other things, the findings indicate that the more consumers are willing to invest in the quality and origin of the food, the less they are willing to spend on delivery. Instead, they would obtain the meal another way. The more a customer was willing to spend on food, the more critical the freshness was to them. Interestingly, the consumer's frequency of online food delivery orders increased in direct proportion to how often the consumer dine-in at the fast-food restaurant.

In contrast to the survey findings, the secondary data nor the empirical research findings are in direct disagreement. According to the author's opinion, the information obtained from 250 individuals responding to 46 questions, in combination with examined articles, research by other authors and official statistics, gave a solid basis for answering the research question.

The author is aware of the limitations and imperfections in his work. The author wishes to continue in the same manner with the corresponding topic in future.

9. Conclusion

An assessment of future human activity, a business, in this case, cannot be inherently accurate. Considering the survey results, there is a market for the author's business idea. Thanks to the survey and previous research, the author obtained the original dataset and can describe consumers' thinking, demand and needs to some degree. Consumers in Finland and South Karelia respectively, show interest in the benefits of Novel kitchen services and manifest behaviour in favour of adopting the service. The interest is caused by non-existent or poorly reachable service alternatives on the market. Although the market offers catering services and different distribution models of ready-made meals, the planning from a business point of view and the buying process from a consumer perspective are conservative and old-fashioned, relying on forecasting with mainly non-local and frozen raw materials.

According to the findings and the diffusion of innovation model, while consumers do not know about the new service because it was not marketed to them, the new service has all other aspects of being adopted and retained. In the author's humble opinion, while the service can be considered "innovative", it can hardly be seen as innovation.

The business's potential is not exclusively dependent on consumer behaviour and the interpretation of survey findings. Market opportunities cannot be assessed only by market analysis and development research. Business potential as a cluster of multiple analyses is missing two crucial aspects in this thesis, product analysis and local sourcing analysis.

To be precise in the concept explanation, the author described online food delivery applications' positive and negative impacts. Having aspects of such delivery applications, the author's business idea is, in fact, essentially different. The detrimental impacts, however, adequately frame the market issues of modern food ordering and delivery. The author is trying to avoid these negatives in his business planning. The research and survey results reassured the author that the adverse effects are not just realities from articles and financial reports but affect ordinary consumers, restaurant employees and delivery workers in South Karelia.

The size of the available market in Lappeenranta and Imatra is roughly 14700 residents. Target market size is about 4350 consumers.

The pricing research is inconclusive, yet it could be seen that consumers are not willing to pay for a single meal delivered by Novel kitchen method more than they would pay in an average à la carte restaurant, with an ideal price range from 16 € to 24 €, even the benefits exceed the expectations. It shows that marketing must be a clear messenger of benefits and added value of the Novel kitchen concept. The Novel kitchen concept targeting should aim at average-income and high-income households.

The author recognises that his business idea is slightly changing standard operations on all levels of the production and distribution of ready-made food. Therefore, it is difficult to explain satisfactorily to the reader, business partners, farmers, suppliers and employees of professional kitchens. The explanation is also tricky because the author cannot give all the details in a broader context, as this would reveal the business plan.

However, the Novel kitchen's potential, adoption and success depend on the experience and craftsmanship of traditional farmers, producers, chefs and other professional workers linked in the chain. Any final product or ready-made food sold through the system must be not only adequately marketed, fresh and from the quality and local ingredients, but exceptionally tasty, good looking and according to the consumer's liking.

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Appendix 1. The questionnaire



Uudet ruokailutavat, ruokatilaus- ja jakelumahdollisuudet

1. Hei!

Olen LAB-ammattikorkeakoulun ravintola-alan opiskelija. Tämä kysely on osa opinäytetyötäni. Tutkin, onko markkinoilla vielä tilaa innovatiivisille ideoille. Tutkimukseni tarkoitus on kartoittaa millaiset ovat sinun tapasi helpottaa päivittäistä ruokailuasi, oli kyse sitten lounaasta, päivällisestä tai viikonloppuruokailusta. Kysely kestää n. 12 minuuttia. Kysely tehdään täysin anonyymisti ja lopussa voit päättää, jos haluat saada kyselyn tulokset sähköpostiisi.

- Ymmärrän ja aloitan kyselyn.
- Kiitos, mutta en halua osallistua.

2. Missä kunnassa asut? *

Kunnan nimi:

3. Omasta mielestäsi paikkakuntasi suosituimman ravintolan nimi.

Suosituin ruokaravintola:

4. Viimeisin päivällinen, jonka söit eilen oli...

Kuvaile lyhyesti mitä söit:

5. Syön kaksi lämmintä ateriaa päivässä... *

- Tosi harvoin (kerran kuukaudessa tai harvemmin)
- Muutaman kerran kuukaudessa
- Kerran tai kaksi kertaa viikossa
- Kolme tai neljä kertaa viikossa
- Lähes joka päivä
- En koskaan, yleensä syön vain yhden lämpimän aterian päivässä

6. Ruoanlaitto. Valitse kaikki jotka koskevat sinua. *

- Osaan valmistaa erilaisia ruokia.
- En osaa valmistaa lähes mitään.
- Tykkään kokkaamisesta.
- Osaan tehdä ruokaa, mutta se ei ole minun juttuni. En pidä ruoanlaitosta.
- Osaan tehdä ruokaa ja pidän siitä, mutta minulla ei ole aikaa ruoanlaittoon.
- Pidän leipomisesta.
- Pidän leipomisesta, mutta kokkaaminen ei ole lähellä sydäntäni.
- Pidän kokkaamisesta, mutta en leivo, tai leivon tosi harvoin
- En tykkää kokkaamisesta enkä leipomisesta.

7. Tiedätkö jo nyt mitä syöt huomenna lounaaksi? *

- Tiedän
- En ole varma, mutta suurin piirtein tiedän
- En tiedä yhtään
- En syö lounasta

8. Tiedätkö jo mihin aikaan syöt lounasta huomenna? *

- Tiedän aika tarkasti +/- 15 minuuttia
- Tiedän, n. tunnin tarkkuudella

- En tiedä, se voi helposti muuttua
- En tiedä lainkaan

**9. Oletko syönyt vuonna 2021 ravintolassa paikan päällä?
Valitse kaikki jotka koskevat sinua.**

- En ole syönyt kertaakaan ruokaravintolassa vuoden 2021 aikana.
- Olen syönyt ainakin kerran lounasravintolassa tai ravintolassa lounasaikaan.
- Ainakin kerran pikaruokaravintolassa, kuten esimerkiksi Kotipizzassa, Raxissa, Subwayssa, Hesburgerissa, Burgerkingissä, McDonaldsissa jne.
- Perinteisessä tai À la carte -ravintolassa ilta-aikaan.
- Asemaravintolassa, taukopaikkaravintolassa, kuten ABC, Teboil jne.
- Olen syönyt ainakin kerran kahvilassa.
- Etnisessä ravintolassa (kiinalainen, thaimaalainen, vietnamilainen, intialainen, nepalilainen, turkkilainen, meksikolainen, sushi, kebab, falafel jne.)
- Kouluravintolassa, opiskelijaravintolassa tai yliopiston ravintolassa.
- Henkilöstöravintolassa tai ravintolassa, joka sijaitsee työpaikallani.

10. Ammatti...

- Olen, tai olen ollut ruokailu- tai ravintola-alan ammattilainen.
- Olen tai olen ollut tarjoilija, mutta en ole koskaan ollut ammattikokki.
- En ole, tai en koskaan ole ollut ruokailu- ja ravintola-alalla töissä.

11. Ruokavalio (valitse ne kohdat, jotka sopivat sinun vuoteesi 2021) *

- Olen kaikkiruokainen, eli syön kaikkea
- Olen kasvissyöjä, mutta syön kalaa
- Olen kasvissyöjä, mutta syön kananlihaa
- Olen kasvissyöjä, mutta syön juustoa

- Olen kasvissyöjä, mutta syön kananmunaa
- Olen tiukka vegaani, eli en syö mitään eläinperäistä
- Syön eläinperäisiä tuotteita, mutta aika harvoin ja pyrin rajoittamaan sitä

12. Valitse raaka-aineet joita et syö:

- En syö punaista lihaa (nauta, porsas, lammas...)
- En syö siipikarjaa (kana, kalkkuna, anka...)
- En syö kalaa
- En syö kananmunaa
- En syö juustoa
- En syö maitotuotteita (jogurttia, raejuustoa, piimää...)
- En syö vihanneksia
- En syö hedelmiä
- En syö tai käytä rapsi- ja rypsiöljyä

13. Kumpi on sinun mielestäsi terveellisempää?

- Luomuvoi
- Luomukasvismargariini

14. Erityisruokavalio. Valitse kaikki, jotka koskevat sinua

- Gluteeniton
- Laktoositon
- Vältän eläinrasvaa
- Vältän kaikkea rasvaa, yritän syödä vähärasvaista / rasvatonta ruokaa
- Vältän sokeria
- En syö maitotuotteita
- Vältän suolaa, yritän syödä vähäsuolaista / suolatonta ruokaa

15. Allergiat ja sairaudet:

- Minulla on keliakia
- Minulla on laktoosi-intoleranssi
- Minulla on pähkinäallergia
- Minulla on äyriäis- tai kala-allergia
- Minulla on ärtyneen suolen oireyhtymä
- Kärsin kroonisesta tulehduksellisesta suolistosairaudesta
- Muu ruoka-allergia tai sairaus: _____
- Minulla ei ole ruoka-allergiaa tai -sairautta

16. Erikoisruokavalio vuoden 2021 aikana *

- Ketogeeninen ruokavalio
- Low-carb-, Paleo- tai Atkins-dieetti
- Syön tai olen syönyt pelkästään lihaa (Carnivore-dieetti)
- Yritän syödä vain raakaa ruokaa (Raw food diet)
- Muu: _____
- Ei ollut erikoisruokavalioita

17. Oletko tilannut valmisruokaa kotiin digitaalisesti vuoden 2021 aikana? *

- Kyllä
- En

Digitaalisesti tarkoittaa sovelluksen tai sivuston kautta. Emme laske tähän puhelimella soitettuja tilauksia.

18. Oletko tilannut ostoksia ruokakaupasta digitaalisesti

vuoden 2021 aikana? *

- Kyllä
 En

19. Oletko tilannut valmisruokaa, tai ruokaostoksia puhelimitse (soitolla) vuoden 2021 aikana? *

- Kyllä
 En

20. Kun tilaan ruokaa, yleensä... *

- Soitan ravintolaan.
 Menen suoraan ravintolaan, tilaan paikan päällä.
 Käytän tilaukseen sovelluksia älypuhelimella.
 Käytän tilaukseen kuljetuspalveluiden nettisivuja.
 Käytän ruuan tilaamiseen ravintolan omaa nettisivua.
 En ole koskaan tilannut valmista ruokaa kotiin.
 Muu tapa: _____

21. Oletko tilannut ruokaa ravintolasta verkkosivujen vai sovelluksen kautta? Valitse kaikki jotka koskevat sinua. *

	Älypuhelin / Sovellus	Älypuhelin / Sivusto	Tietokone / Sivusto	Ei mikään
Valitse:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. Oletko koskaan ostanut ruokaa seuraavien palvelujen kautta? Valitse kokemuksesi mukaan. *

- Wolt
 Foodora

- Ruokaboksi
- Kotipizza Äppi/Online
- Muu sovellus tai palvelu _____
- En koskaan ostanut

23. Kun olet tilannut ruokaa vuoden 2021 aikana... *

- Yleensä kotiinkuljetuksen kanssa.
- Yleensä menen hakemaan tilauksen itse.
- En ole tilannut.

24. Kuinka useasti olet tilannut ruokaa kotiin? *

- Kerran tai kaksi kertaa viiden edellisen vuoden aikana
- Muutaman kerran vuodessa
- Noin kerran kuukaudessa
- Lähes joka viikko tai muutaman kerran kuukaudessa
- Aika usein, joka viikko ainakin kerran
- Muutaman kerran viikossa
- Lähes joka päivä
- Ei koskaan

25. Oletko koskaan käyttänyt ennakkotilauspalvelua (tilata ennakkoon haluamallesi ajankohdalle, eng.: pre-order)? *

- Kyllä
- En

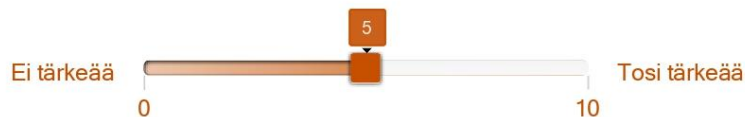
26. Ateriapalvelut kotiin

- Olen kotiateriapalvelun asiakas
- Olen ollut kotiateriapalvelun asiakas, mutta en ole enää
- En ole koskaan käyttänyt kotiateriapalvelua
- En edes tiedä, mitä "ateriapalvelu" tarkoittaa

27. Onko Ruokarenkaan (REKO) konsepti sinulle tuttu? *

- On tuttu, mutta en ole koskaan kokeillut
- On tuttu, olen ostannut REKOn kautta jotain
- En tiedä, mikä se on.

28. Kuinka tärkeää sinulle on, että syömäsi ruoan raaka-aineet on tuotettu lähellä (lähiruoka) *



29. Kuvittele, että olet kotitoimistossa töissä (home-office). Tiedät, että huomisen päivä tulee olemaan kiireinen, etkä ehdi valmistaa ruokaa huomiseksi. Olisiko sinusta järkevää tilata jo nyt kunnon lounas (ei ns. pikaruokaa) seuraavalle työpäivälle? *

- Kyllä
- Ei
- En osaa sanoa

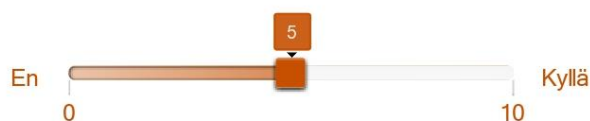
30. Olet edelleen kotona etätöissä ja kiire jatkuu. Lisää tehtäviä on tulossa ensi viikolle eli työtahti ei tule tasaantumaan. Olisiko sinusta hyödyllistä tilata lounasruokaa kotiin koko seuraavaksi viikoksi jos saisit hyvän tarjouksen? *



31. Jos voisit valita, että ruoka toimitetaan lähikauppaasi tai muuhun lähitoimipisteeseen ja säästäisit näin toimituskulut (4,90 €), olisitko mieluummin valinnut tämän vaihtoehdon ja hakenut ruoan sitten itse lähitoimipisteestä? *

- Maksaisin mieluummin kotiinkuljetuksesta
- Hakisin ruuan itse lähitoimipisteestä
- En osaa sanoa

32. Kuvittele, että olet kahden lapsen yksinhuoltaja. Olet myös osa-aikainen yrittäjä ja aikaa ruoan laittoon on, mutta ei niin paljon kuin toivoisit. Jos sinulla olisi mahdollisuus helpottaa päiväsi ja tilata terveellistä, tuoretta ja korkealaatuista ruokaa, joka on valmistettu paikallisista raaka-aineista ilman puolivalmisteita, olisitko kiinnostunut tilaamaan tällaista ruokaa? *



33. Yksi annos maksaisi 12,10 € aikuiselle ja 6,50 € lapselle. Kotiinkuljetus maksaisi 4,90 €. Lounas kahdelle lapselle ja sinulle maksaisi siten 30,00 €. Tilaisitko? *

- Tilaisin lähes joka arkipäivä, jos ruoka on tuoretta, terveellistä ja korkealaatuista
- Tilaisin silloin tällöin, jos ruoka on tuoretta, terveellistä ja korkealaatuista
- En tilaisi

34. Kuvittele, että olet ison perheen vanhempi. Teille tulee pitkästä aikaa viikonlopuksi kotiin koko väki. Tytär yliopistolta,

38. Mikä ruoan laatu tai ominaisuus on mielestäsi tärkeintä (1 = ei niin tärkeää, 5 = tärkein)

1	<input type="radio"/> Terveellisyys <input type="radio"/> Paikallisuus <input type="radio"/> Tuoreus <input type="radio"/> Hinta <input type="radio"/> Ei puolivalmisteita, ei säilöntäaineita
2	<input type="radio"/> Terveellisyys <input type="radio"/> Paikallisuus <input type="radio"/> Tuoreus <input type="radio"/> Hinta <input type="radio"/> Ei puolivalmisteita, ei säilöntäaineita
3	<input type="radio"/> Terveellisyys <input type="radio"/> Paikallisuus <input type="radio"/> Tuoreus <input type="radio"/> Hinta <input type="radio"/> Ei puolivalmisteita, ei säilöntäaineita
4	<input type="radio"/> Terveellisyys <input type="radio"/> Paikallisuus <input type="radio"/> Tuoreus <input type="radio"/> Hinta <input type="radio"/> Ei puolivalmisteita, ei säilöntäaineita
5	<input type="radio"/> Terveellisyys <input type="radio"/> Paikallisuus <input type="radio"/> Tuoreus <input type="radio"/> Hinta <input type="radio"/> Ei puolivalmisteita, ei säilöntäaineita

39. Haluatko saada kyselyn tulokset sähköpostitse? (Tulokset lähetetään kevään lopussa. Sähköpostitiedot ovat luottamuksellisia. Osoitetta ei luovuteta kolmannelle osapuolelle.)

Kyllä, sähköpostini:

40. Oletko... *

- Mies
- Nainen
- En halua sanoa / Olen muunsukupuolinen

41. Sinun ikäsi... *

- 12 - 17
- 18 - 26
- 27 - 35
- 36 - 44
- 45 - 53
- 54 - 62
- 63 - 71
- 72 tai enemmän
- En halua sanoa

42. Oletko valmistunut ammattikorkeakoulusta tai yliopistosta?

- Olen
- En ole

43. Olet...

- Työntekijä, palkansaaja
- Yrittäjä
- Työtön
- Eläkeläinen
- Opiskelija
- Vanhempainlomalla
- Varusmies, siviilipalvelussa tai asepalvelussa
- Muu / tai en halua vastata

Tämä on kyselyn viimeinen sivu. Nämä kysymykset eivät ole pakollisia. Voit vapaasti vastata tai jatkaa kyselyn loppuun.

44. Mitä on mielestäsi pikaruoka? Mikä on tunnusomaista pikaruualle?

45. Miten ymmärrät tuoreuden? Mikä on tuoretta ruokaa? Mitä "tuore" mielestäsi tarkoittaa.

46. Viimeinen kysymys. Oliko tämä kysely mielenkiintoinen?

0 1 2 3 4 5 6 7 8 9 10

