



SEINÄJOEN AMMATTIKORKEAKOULU  
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# **Analysis of market opportunities for IT support services in the intersection of three regions**

A comprehensive study of the IT needs and current infrastructure of SMEs

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SEINÄJOKI UNIVERSITY OF APPLIED SCIENCES

## Thesis abstract

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The primary aim of this thesis was to investigate the potential for new IT support businesses targeting small and medium-sized enterprises (SMEs) in the central areas of Finland. By examining the current market conditions in South Ostrobothnia, Central Ostrobothnia, and Central Finland, the study sought to determine the feasibility of establishing such businesses in these areas. The study centered around the question: "What is the current state of the market in the area comprising the three regions of Southern Ostrobothnia, Central Ostrobothnia, and Central Finland, from the perspective of viability for potential new IT support businesses focusing specifically on SMEs?"

Employing a quantitative approach, the study aimed to collect a broad sample from 1,500 participants but faced a low response rate, ultimately analyzing data from 39 responding SMEs. These SMEs frequently use information technologies and perceive their IT infrastructures as modern. However, concerns were predominantly raised about cybersecurity. Notably, only a fraction had internal IT staff, and half utilized outsourced IT support services, indicating a potential market gap. Yet, the majority's reluctance to invest in such services, primarily due to cost concerns, presents challenges to market entry.

Despite these challenges, there is a notable opportunity for new entrants capable of offering affordable, tailored IT solutions to SMEs. This thesis underscores the significance of cost in SMEs' decision-making processes and provides actionable insights for both the commissioners of this thesis and entrepreneurs aiming to penetrate the IT support market. By overcoming cost barriers and highlighting the value of outsourced services, new businesses may access a segment with notable demand for IT support. Following a structured approach, the thesis encompasses an introduction, literature review, market analysis, methodology, primary research, and concludes with discussions and implications.

<sup>1</sup> Keywords: IT support, SME, IT infrastructure, market analysis, digitalization

SEINÄJOEN AMMATTIKORKEAKOULU

## Opinnäytetyön tiivistelmä

Tutkinto-ohjelma: International Business

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Tämän opinnäytetyön päätavoitteena oli tutkia uusien, pk-yrityksiin erikoistuvien IT-tukipalveluyritysten potentiaalia Suomen keskiosassa. Tutkimalla nykyisiä markkinaolosuhteita Etelä-Pohjanmaalla, Keski-Pohjanmaalla ja Keski-Suomessa pyrittiin selvittämään tällaisten yritysten perustamisen toteutettavuutta näillä alueilla. Tutkimus keskittyi kysymykseen: "Mikä on markkinoiden nykytila näissä kolmessa maakunnassa, uusien, erityisesti pk-yrityksiin keskittyvien IT-tukipalveluyritysten kannattavuuden näkökulmasta?"

Käyttäen määrällistä lähestymistapaa tutkimuksessa pyrittiin keräämään laaja, 1 500 osallistujan otos, mutta vastausprosentti jäi odottamattoman alhaiseksi ja johti lopulta 39 vastanneen pk-yrityksen vastausten analysointiin. Nämä yritykset käyttävät informaatioteknologioita usein ja pitävät IT-infrastruktuuriaan modernina. Huolenaiheita nostettiin kuitenkin esiin pääasiassa kyberturvallisuuden suhteen. Merkille pantavaa on, että vain pienellä osalla yrityksistä oli sisäistä IT-henkilöstöä ja puolet käytti ulkoistettuja IT-tukipalveluita, mikä viittaa potentiaaliseen markkinarakoon. Enemmistön haluttomuus investoida tällaisiin palveluihin, pääasiassa kustannussyistä, asettaa kuitenkin haasteita markkinoille tulolle.

Haasteista huolimatta uusille toimijoille, jotka pystyvät tarjoamaan edullisia, räätälöityjä IT-ratkaisuja pk-yrityksille, on huomattavia mahdollisuuksia. Tämä opinnäytetyö korostaa kustannusten merkitystä pk-yritysten päätöksentekoprosesseissa ja tarjoaa konkreettisia näkemyksiä sekä tämän opinnäytetyön toimeksiantajille että yrittäjille, jotka pyrkivät osallistumaan IT-tukipalvelumarkkinoille. Ratkaisemalla kustannusesteet ja korostamalla ulkoistettujen palveluiden arvoa uudet yritykset voivat päästä käsiksi markkinasegmenttiin, jossa on tarve IT-tukipalveluille. Noudattaen jäseneltyä lähestymistapaa opinnäytetyö sisältää johdannon, kirjallisuuskatsauksen, markkina-analyysin, tutkimusmenetelmien esittelyn, tutkimuksen tulokset ja päättyy pohdintaan ja päätelmiin.

<sup>1</sup> Asiasanat: IT-tuki, Pk-yritys, IT-infrastruktuuri, markkina-analyysi, digitalisaatio

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## Terms and Abbreviations

AI	Artificial intelligence
Cloud computing	Cloud computing provides immediate access to computing resources via the internet.
Digital Literacy	The capability to safely and appropriately access, manage, comprehend, integrate, communicate, evaluate, and generate information using digital technologies.
Digital Transformation	A strategic endeavour that integrates digital technology throughout every aspect of an organization.
Digitalization	Action of leveraging digital technologies to transform a business model, creating new opportunities for revenue generation and value creation.
Digitization	Involves transforming information from analog to digital format.
ICT	Information and communication technology
IT	Information technology
ITO	Information technology outsourcing
KIBS	Knowledge intensive business services
MSP	Managed service provider
MSSP	Managed security service provider
R&D	Research and development
SLA	Service level agreement
SME	Small and medium-sized enterprises



# 1 INTRODUCTION

In today's world, whether within the walls of educational institutions or the dynamic environments of businesses, phrases such as "digitalization," "digital transformation," and "IT support" are ubiquitous. The pervasive and increasingly frequent use of these terms captures a significant trend and highlights the essence of the underlying phenomenon that defines our era: the relentless march toward a more digital society. With each moment, the world becomes more deeply entwined with digital technologies, leading to a complexity that challenges our ability to navigate daily life, especially when interacting with digital systems. This digital landscape profoundly impacts everyone's daily routines but is particularly critical for businesses. Many organizations rely heavily on these systems to maintain their operations, underscoring the vital role of digital capabilities in sustaining the contemporary business ecosystem. However, not every business is equally equipped to handle the hurdles that these vital digital systems present, thus emerging a need for professionals who can effortlessly manage such issues and help businesses to continue their operations unaffected.

## 1.1 Background and context of the topic

As highlighted in the earlier passage, the world is becoming increasingly complex due to technological advancements. From this observation, an idea emerged for a business specialized in managing these complexities, particularly for small and medium-sized businesses. However, existing only as a concept based on observations, the feasibility of such a business needed to be evaluated. Consequently, this thesis was commissioned by the inventors of the business idea. Its purpose is to "test the waters" and investigate the viability of such services in the proposed market area, which includes the Finnish regions of Central Finland, Southern Ostrobothnia, and Central Ostrobothnia. This research aims to confirm market demand and thus support the potential launch of the business with suitable intelligence, aiming to prevent the waste of time and resources.

## 1.2 Research problem, purpose and objectives of the thesis

The primary aim of this thesis is to address the challenge of assessing undefined demand within the proposed market area for a potential new IT support business. This challenge has been further refined into the main research question that forms the foundation of this thesis: "

What is the current state of the market in the area comprising the three regions of Southern Ostrobothnia, Central Ostrobothnia, and Central Finland, from the perspective of viability for potential new IT support businesses focusing specifically on SMEs?" To answer this question, the thesis employs a method of quantitative market analysis to distill actionable insights. These insights are of significant value due to their directly applicable nature in addressing real-world challenges.

### **1.3 Structure of the thesis**

The thesis starts with an introduction which sets the stage by detailing the background, research problem, purpose, and objectives. A significant part of the thesis is the detailed literature review exploring IT support services, the trend towards digital transformation in business, and the current state of IT infrastructure in SMEs. It delves into the utilization of digital tools, barriers to technology adoption, and the significance of external support for business digitalization. Additionally, it evaluates the benefits and practicalities of IT support outsourcing, investment potential for SMEs in IT support, and the role of Managed Service Providers (MSPs). The review also covers market analysis techniques and gives an overview of the IT support industry, including insights specific to Finland.

This is followed by an analysis of the potential market area, including customer segmentation, a review of IT support services available, competition, and findings from that external analysis. The following methodology section explains the research design, sampling methods, data collection, and analysis methods, along with discussions on validity, reliability, ethical considerations, and limitations. The implementation of primary research is then described, detailing the initial process, questionnaire design, distribution, and collection. This leads to the presentation of primary research data and a discussion section that interprets results, reflects on the study's objectives, and explores practical implications and suggestions for future research. Finally, the thesis concludes by summarizing the main findings.

## **2 LITERATURE REVIEW**

This literature review section serves as a foundational pillar for the thesis, introducing the reader to the concepts and theories presented in the subsequent sections of the thesis, and laying the groundwork through the discovered findings for information presented later on, thus enabling the reader to gain comprehensive understanding of the topic of the study.

Beginning with an introduction to the concept of IT support and its outsourcing, this literature review delves into the transformative role of digitalization for SMEs, examining the challenges and opportunities digital tools present for them. This review aims to clarify the current state of digital tool adoption and use within SMEs, highlighting their barriers to implementation and the consequential need for external IT support to navigate the digital terrain effectively.

Subsequently, the focus shifts to the dynamics of outsourcing IT support, examining its benefits for companies of many sizes, and particularly for SMEs. This discussion extends to the willingness of SMEs to invest in outsourced IT support and technology, followed by an examination of the role of managed service providers in this ecosystem. By examining the nuances of performing market research within this context, the literature review aims to provide insights into effective strategies for identifying market opportunities and understanding the broader market conditions for IT support services, both in Finland as well as globally.

This review aims not only to present an extensive analysis of the available literature on the covered topics but also to establish a very clear connection to the broader objectives of this thesis. As this thesis transitions into the detailed examination of each of the aforementioned sections of the review, it is good to once more highlight the overarching goal of this thesis, which is to uncover the market potential for outsourced IT support services.

### **2.1 IT support services explained briefly**

According to Yost (2017), the computer service industry, now known as Information Technology (IT) services industry, plays a crucial role in ensuring technology operates efficiently and securely. This has made it a pivotal industry in today's world. Saggau (2022, p. 7) outlines that IT services support businesses in multiple functions, categorizing the market into IT consulting, outsourcing (with further sub-categories), support and deployment, and education and training.

Ek (2020, p. 12) defines the sector as belonging to a group of knowledge-intensive business services, also known as KIBS. She adds that companies producing such services have a wider knowledge of the information customary to the field compared to individual companies outside the industry.

Sanchez (2009, pp. 26–27) observes that although technical support, a subset of IT services, is relatively new field, it is experiencing positive growth, and that growth is likely to continue due to increasing technological complexity. Tuomi and Aittoniemi (2022, p. 26) highlight that many companies in this sector are financially strong and do not need external financing for growth. This notion of the strong financial position of the companies in the field could be interpreted as a strong indicator of stable industry growth.

Sanchez (2009, p. 201) defines technical support as a blend of technical expertise and customer service. Cornell (2023) further elaborates on the concept, explaining that solving a technical issue requires a high level of skill and that the primary job of technical support, competent in these matters, is to help customers solve these types of technical issues, essentially offering technical customer service.

Sanchez (2009, p. 4) notes that for many industries, this technical support is extremely important, as it is often responsible for successfully incorporating new technologies into a part of the company. Furthermore, he adds that without technical support, customers can often become handicapped by arising technical issues. Cornell (2023) extends this view by stating that in the case of technical issues, the main role of technical support is to determine the root cause of them and solve them in the quickest yet most thorough manner so that they can be resolved at once. Simplr (2024) adds that it is also possible to outsource this technical support.

Hanafizadeh and Zareravasan (2020, pp. 1, 20) and Nguyen (2023, p. 7) discuss Information Technology Outsourcing (ITO) as an organizational strategy where a company delegates IT management to a third party. Kumbakara (2008, p. 341) explains that IT services outsourcing originally started from data center service outsourcing, with the main selling point being the achieved economies of scale. He continues by stating that subsequently, IT services outsourcing evolved to include the development and management of nearly all IT activities.

Murphy (2010, p. 4) highlights the impressive growth rate achieved by the IT outsourcing industry, which has continued for multiple decades and is still continuing, with a popularity that is unlikely to decrease anytime soon. He adds that nowadays, it is fairly common for private sector companies to adopt this process as a part of their overall business strategies. Nguyen (2023, p. 6) is on the same page, stating that the growth is due to an ever-accelerating pace of digitalization, the wider adoption of enterprise applications, and the rising popularity of home offices.

Nguyen (2023, p. 7) continues the dialogue on IT outsourcing and adds that the industry contains four distinct markets, which are based on different services, such as administration, application outsourcing, web hosting, and other IT services, which refer to aggregated revenue from various different occupations in the field of IT services like managed services. Lehtikoinen and Töyrylä (2013) describe three outsourcing types: Onshore (within the same country), Nearshore (nearby countries), and Offshore (countries usually in developing economies for cost-effectiveness). They also mention Reshoring, where previously outsourced services are brought back in-house due to diminishing financial benefits and service quality issues. Sanchez (2009, pp. 5, 244) concludes by emphasizing the ongoing need for technical support as long as technical devices and applications exist, noting it's easier for businesses to outsource this support than to maintain it internally.

In conclusion, IT support and outsourcing stand as foundational pillars within the Information Technology services industry, essential for the seamless operation and strategic management of technology in today's digital age. IT support ensures the efficient and secure functioning of technological systems, combining technical expertise with customer service to address and resolve complex technical issues. Meanwhile, outsourcing represents a strategic organizational move to leverage third-party expertise, offering a range of services from development to management, and evolving in response to digitalization and the growing trend of remote work. This sector's financial robustness signals a stable trajectory of growth, underpinned by an array of services including consulting, deployment, and education.

## **2.2 The move towards digitally transformed business**

According to Shevtsova et al. (2020, p. 2), the contemporary world is being transformed by the influence of digital technologies as we speak. When this change is discussed, you can

often hear the words "digitalization" and "digital transformation" thrown around. Gartner (n.d.-b) explains that digitalization is a term that, in short, describes the process of moving to digital business and business models in order to create new avenues for value generation.

McKinsey & Company (2023) and Westerman et al. (2011, p. 5), on the other hand, describe digital transformation as a fundamental shift in the company's operations with the main goal of gaining new competitive advantages via the ongoing deployment of new digital technologies.

Iiskola et al. (2022, p. 5) state that digitalization has changed and will change the operating environment of companies at an ever-increasing pace. Westerman et al. (2011, p. 40) add that information technology is the bedrock of the digital capabilities of a business. Kettunen et al. (2020, p. 19) positively note that almost half of the businesses, however, feel that these digital technologies fit into the operations of their company. Folkes (2020, p. 81) ends by stating that many agree that the technologies have benefitted them positively and increased the vital sustainability of their company.

According to Ek (2020, p. 47), digitalization has wide-reaching effects that touch every area of a business. This view is supported by Verhoef et al. (2021, pp. 892, 889) who state that for firms to thrive in the digital era, they must embrace digital assets and technologies, noting how new digital innovations disrupt traditional business models and competition, leading to the eclipse of conventional firms by digital newcomers.

According to Bilbault (2016), Pierre Nanterme, the CEO of Accenture, eloquently highlighted the critical importance of integrating digital technologies into company workflows as well. He encapsulated this by stating, "Digital is the main reason just over half of the companies on the Fortune 500 have disappeared since the year 2000."

Suvinen et al. (2023, p. 24) note that in the upcoming years, it is expected that digitalization will increasingly integrate into society to such an essential extent that, following this shift, the digital realm will become a component of nearly every societal activity.

Westerman et al. (2011, p. 21) highlight that technologies like email and video conferencing, which were at one point considered innovative solutions, have become standard in many companies, enabling employees to collaborate with others across distant regions without ever even meeting in person, effectively virtualizing individual work and detaching it from its

location, while also becoming potent facilitators for knowledge sharing, despite initially being adopted for cost-saving reasons. Tai-Kuei et al. (2017, p. 196) add that technology has seamlessly integrated into every aspect of our daily lives, influencing various activities and interactions.

Kumbakara (2008, p. 342) brings the organizational aspect into the discussion, stating that for the majority of businesses, information technology is becoming an essential component that keeps them running. Berisha-Namani (2009, p. 1) has a similar view as he states that the majority agree on the vital importance of using information and communication technology in SMEs. He continues by saying that the Internet and other IT tools are not only changing how SMEs work but are also crucial for their continued existence and growth, emphasizing the fact that modern businesses cannot succeed without the significant role of IT in improving the way they operate.

According to Albar and Hoque (2017, p. 4), the environment is ever-changing, and it presents a multitude of new challenges for SMEs. They continue by stating that despite this, SMEs can face them more easily via the help of technology. Tai-Kuei et al. (2017, p. 197) continue by stating that work enabled by technology has brought forward great flexibility and an array of advantages for businesses. They add that in the process, it has also embedded itself as a part of the day-to-day operations of businesses.

From this, it becomes apparent that the use of digital technologies has greatly helped businesses grow and stay competitive. However, this path to digitally transformed business may not come without its drawbacks. One such case is highlighted by Folkes (2020, p. 40) and Berisha-Namani (2009, p. 2), who explain that the adoption of these new technologies has caused a dependency on them that affects even the smallest of companies. To this, Tan et al. (2010, p. 50) add that the adoption of these technologies is no longer just a choice for SMEs but rather a must across every business sector.

Verhoef et al. (2021, p. 895) note that digital transformation consists of three separate phases that a company goes through, each setting its unique demands for the digital resources of a business. They list the phases as digitization, digitalization, and digital transformation.

According to Kääriäinen et al. (2020, p. 29), the digital transformation phase has its own subset of steps, which are positioning, current state review, roadmap, and implementation. Furthermore, they highlight that this transformation process is not to be done in one go; it is not an instant transformation. They state that it is an iterative process where a company builds their digital capabilities one piece at a time. Despite this, for many, this may still present a challenge as the development steps may sometimes occur in an overlapping manner.

Joensuu-Salo et al. (2017, p. 94) add that for smaller companies, the digitalization concept is indeed intimidating, as many have the notion that every single variable should be developed at once. These sorts of perceptions could pose potentially an extreme barrier for the process of digital transformation in individual businesses, as many might feel it is an incomprehensibly large undertaking and, due to these reasons, might possibly postpone or even outright deny the move towards this objectively brighter future.

Suvinen et al. (2023, p. 43) stress that it is important to highlight that the key to leveraging digitalization lies not in businesses blindly implementing an array of any digital systems and software, irrespective of their sector and scale. The focus should be on adopting these digital tools in a way that they serve the specific needs of the organization, particularly in areas that matter most to their business operations. Kääriäinen et al. (2020, pp. 28, 34) suggest that this transformation process could possibly be supported via the use of a digital transformation model, but even in this case, some SMEs saw the use of this tool as a challenge. A notion by Sanchez (2009, p. 244) quite accurately represents the underlying issue as he says that as technology increases in complexity, so does the learning curve to master it.

Suvinen et al. (2023, p. 13) steer the conversation to a second pressing issue as she states that looking at digitalization today, and furthermore focusing on digital risks, reveals key concerns. She notes that digital technology's widespread use also makes digital risks highly probable. She continues by saying that, however, the state of digital security and expertise in this area is worrying, highlighting the mismatch between the need for digital safety skills and the reality of existing and potential threats.

According to Westerman et al. (2011, p. 25), digital transformation requires comparatively stronger integration between business executives and digital technologies than other business changes. They explain that companies facing a history of difficult relationships between information technology and business departments are at a disadvantage when attempting to implement digital transformation.



Suvinen et al. (2023, pp. 28, 63) add that the digitalization phase in itself requires an array of skills that range from the ability to evaluate the businesses needs of digital technologies and abilities to use them, all the while being able to assess their potentials for risks and opportunities. She continues to state that since in Finland specifically, the goal towards digitalization of the business field is exceptionally high, this will in turn bring out a major need for third-party support, especially in areas where the number of SMEs is high.

This perspective gains support from a notion by Kääriäinen et al. (2020, p. 35) as they state that for many SMEs, the use of information technology tools alongside company strategy and processes can be poor as well as undocumented. To which Kumbakara (2008, p. 338) and Sanchez (2009, p. 244) add that nearly all businesses are dependent on IT services, which support them by offering a stable environment in which they can operate, especially in times when the technological environments are becoming increasingly complex to be managed.

According to Folkes (2020, p. 87), the businesses' opportunity for success and the decrease of the risk of failure are both enabled by having reliable as well as cost-effective IT solutions. Westerman et al. (2011, p. 25) add to this that companies that have a strong relationship between their IT services and business units are well-placed to start digital transformation.

It can be said that digital transformation represents a crucial shift towards integrating digital technologies into business practices, very often offering significant opportunities for growth, efficiency, and an advantage in competitiveness, especially for SMEs. Despite the clear benefits, SMEs do seem to face challenges in all this, including technological complexity, and security concerns to name a few. However, while digital transformation does pose challenges, its successful adoption is essential for SMEs aiming to thrive and many cases to even survive in the digital era.

### **2.3 General state of IT infrastructure in SMEs**

According to Albar and Hoque (2017, p. 3), SMEs have an ability to adopt new and innovative technologies that far exceeds that of large companies. Yet, as Joensuu-Salo et al. (2017, p. 12) and Westerman et al. (2011, p. 40) state, many SMEs find themselves in a position in which their information technology infrastructure is not adequate to match the needs of today. The advancement of SMEs in the field of technology implementation is remarkably slower than that of large corporations (Finnish Government, 2022, p. 44). Parthasarathy and Kumar

(2016, p. 382), along with Shevtsova et al. (2020, p. 2), also agree that SMEs face challenges in adapting to technological advancements and that they tend to lag behind larger companies in implementing digital technologies, emphasizing it as a trend that is consistent even in the world's leading countries.

From the table below, it can be observed that generally in Finland, the use of technologies in SMEs is not alarmingly low, except in the area of security software usage. However, a trend can be spotted where the smaller the company is by employee count, the smaller is the usage percentage of the different technologies (Table 1). This trend is in line with the notions of earlier authors.

Table 1. Use of information technology in enterprises (Statistics Finland, 2023).

	Website, % of enterprises	Enterprise resource planning (ERP), % of enterprises	Use cloud services, % of enterprises	Email as a cloud computing service, % of enterprises	Security software applications as a cloud computing service, % of enterprises
2023					
10 to 19 persons	97	43	73	64	49
20 to 49 persons	100	63	78	73	56
50 to 99 persons	99	78	90	84	70

According to Werber et al. (2015, p. 172), micro-enterprises share similarities with other SMEs but can be separated from them when viewed from the perspective of information technology adoption and usage problems, which are even more prevalent in them due to their small size. He states that these micro-enterprises rarely have appropriately skilled personnel available in-house and thus must rely on either third parties or the training of current staff. Furthermore, he brings to the attention the alarming rate of only 7,5 % of these businesses that have actually employed a qualified and skilled person to take care of these matters in the company. He adds that for the rest of the companies, the technology and its upkeep depended on unqualified personnel who, in the most extreme scenario, happened to be a hairdresser, or even a cook. Folkes (2020, p. 67) adds that it is usually the case that SMEs do not have the required resources to support and hire permanent IT staff.

Folkes (2020, p. 27) and Westerman et al. (2011, p. 38) note that small business owners and their managers can suffer from knowledge gaps caused by the rapid advancement of technology, especially in the case of emerging technologies. Suvinen et al. (2023, p. 43) confirm this notion by stating that for SMEs, digitalization poses a real challenge, with barriers including factors like the owner-managers' low level of skill in using digital technologies. Tiwasing et al. (2022, p. 5) also support this view of a lack of digital skills in SMEs. They further highlight the aspect of rural businesses by stating that many rural businesses are at a disadvantage when it comes to digitality, characterizing rural areas as having spotty coverage of digital service provision. In addition, these businesses often struggle to find and retain young and skilled employees and are vulnerable to cyber threats, thus facing challenging business conditions.

Harindranath et al. (2008, p. 95) note that the most important avenue for seeking help in the case of digital issues for SMEs were ICT consultants. However, this finding is not very comforting, particularly from the perspective of rural SMEs that specifically suffer from the lack of these services. Consequently, this forces them to seek assistance elsewhere. Harindranath et al. (2008, p. 95) also observe that the second most utilized source of help is friends and family. While understandable, this trend is concerning, as it is rare for every business owner to have an IT expert within their close circle, leaving these businesses quite isolated when facing truly challenging technical problems.

According to Kettunen et al. (2020, pp. 17–20), company size influences the adoption of digital tools, with businesses employing ten or more people using them more extensively and facing fewer obstacles in digitalization when compared to smaller businesses. Furthermore, they also support the notion that smaller companies have slightly lower digital competence and technical expertise. Lastly, they state that younger companies (up to ten years old) encountered fewer digitalization barriers than older ones, indicating that company age also affects digital adoption and the perceived challenges therein, with newer companies generally showing better command of digitalization aspects. This statement could be interpreted to suggest that as a business is young, it is more likely to be founded by a younger person. This, in turn, often means that younger generations, who observably are more capable when it comes to the use of digital technologies, are the reason these young companies are more likely to use digital technologies and advance in the field of digitalization due to the higher technical skills of the young owner-managers.

Westerman et al. (2011, p. 10) note that despite businesses having already sunk considerable amounts of effort and resources into the implementation of certain technologies, they rarely gain the full value out of them and the technology-enabled change, even despite internal and external pressures. They end by stating that there is much more value to be gained by businesses from these technologies.

It can be concluded that, despite the potential for quick technology adoption in SMEs, they are still faced with hurdles like limited IT resources and slower digital growth compared to larger companies. Furthermore, these challenges are even more intense for micro-enterprises, with an almost certain lack of skilled IT staff, forcing reliance on external help or untrained employees. When this is coupled with the fact that technology keeps advancing at a rapid pace, companies are left to combat a fast-changing landscape with minimal resources, from which one can only assume less than optimal outcomes.

### **2.3.1 Different levels of use of digital tools in companies**

Joensuu-Salo et al. (2017, pp. 67, 81) compiled a list outlining the four different stages of a company's utilization of digital technologies. They explain that in the first stage, the company's digital tool utilization is only at a beginner level, having adopted the most rudimentary tools, including company websites and email. In the second stage, the company utilizes some digital solutions in their production. In the third stage, digital technologies are widely used in many company functions. They state that in the last and fourth stage, the company can be considered a pioneer in the use of digital technologies, utilizing a wide array of them. They conclude by stating that over half of the companies are in the first stages.

According to Larja and Räsänen (2019, p. 9), roughly one-third of the companies in their study used only a handful of digital tools in their businesses. Furthermore, they suggest that companies using digital tools in their workflows only in a very preliminary way or not at all can be classified as non-digital companies. Conversely, just 16 % of companies in the study used what they call modern digital tools, including artificial intelligence, showcasing that the remainder of the companies were using so-called traditional digital tools, which included websites and social media.

Von Leipzig et al. (2017, p. 518) describe the companies unskilled in digital technologies and with no formal strategy towards digital transformation as belonging to a so-called unaware

level. He continues by explaining that these companies lack the organizational awareness necessary for transformation. Westerman et al. (2011, p. 60) refer to these companies as digital beginners, noting that companies can belong to this category willingly, but most often they are in the quadrant by accident and as a result of lack of awareness.

Westerman et al. (2011, pp. 30–31) also list three separate levels of digital tool use: substitution, extension, and breakthrough. They explain that substitution is where new technology replaces old for the same function, exemplified by the replacement of PCs with iPhones. Extension enhances the performance or functionality of a process, and a breakthrough is a fundamental redefinition of a process through technological innovation. They note that out of the three levels, substitution is the most common form, followed by extension.

In essence, it can be seen that there are multiple ways to classify companies based on their digital capabilities and the use of digital technologies. However, despite the multitude of differentiation conventions, the bottom line that becomes clear is that the majority of companies fall into the lower quadrant of the classification categories. A notable portion falls into the very lowest quadrant, with only a minority utilizing information technologies widely in their day-to-day business. This begs the question of what is causing this slowness in the adoption of information technology by the companies recognized. Is the lack of resources the sole reason or just the tip of the proverbial iceberg.

### **2.3.2 Identifying obstacles to technology adoption in SMEs**

SMEs are faced with a variety of limiting factors that are related to the adoption of and use of technology (Harindranath et al., 2008, p. 95). These problems can be grouped into two main categories: technology-related and business-related. Westerman et al. (2011, pp. 35, 40) bring up further obstacles to digital transformation in companies. They point out that a company's current success might affect its willingness to adopt digital changes. They suggest that if a company is doing well, its leaders might see the risks of transformation as more significant than the benefits gained, thus making them hesitant to pursue the transformation. Furthermore, they add that there are challenges present throughout the transformation process and its steps, including the initiation, execution, and coordination stages. They note that one key issue during the initiation phase is the lack of motivation from the business's senior management, who may doubt the value of new technologies. Moreover, they emphasize the

necessity of a strong, top-down approach to successfully navigate the complex journey of digital transformation, highlighting the importance of leadership commitment. Werber et al. (2015, p. 178) add that owners' and managers' personal attitudes influence their business either directly or indirectly.

The owners and managers hold crucial influence on the business's technology adoption, with their vision and innovativeness playing a significant role (Albar and Hoque, 2017, pp. 4, 14, 18; Joensuu-Salo et al., 2017, p. 102; Ramdani et al., 2013, p. 14). Additionally, factors such as top management support, organizational readiness, and the perceived benefits of technology are key determinants in its integration and effective use within SMEs. According to Albar and Hoque (2017, p. 6), CITC (2015) has stated that SMEs which deem technology to not serve any purpose for them and their business is a leading reason for the non-use of the technologies.

Kettunen et al. (2020, p. 20) add that some business owners are uncertain about what target areas they should focus on in terms of digitalization. Furthermore, other business owners have decided not to invest in digitalization at all due to their old age. Westerman et al. (2011, p. 35), alongside Joensuu-Salo et al. (2017, p. 102) and Suvinen et al. (2023, p. 43), expand their notion by explaining that a combination of lack of knowledge and awareness about the need for digital transformation and its benefits, as well as threats, can in fact be an issue in companies. Suvinen et al. (p. 63) add that this applies to micro-enterprises as well, possibly even more so. According to Westerman et al. (pp. 35–42), a company can be denied the possible benefits gained from information technology by managers who cannot think differently. They add that overly limited visions have the possibility to cause extensive losses on part of obtainable benefits from digital transformation. Furthermore, they add that many executives are also being put off by the possibility of security threats that come with digital technologies.

liskola et al. (2022, p. 31) neatly summarize that businesses face challenges with the adoption of digital services, specifically on part of skills and courage. They furthermore add that entrepreneurs specifically feel like they are required to be a jack of all trades and that there is not enough time to master all new things. They end by stating that many digital services require technical understanding, alongside with bravery.

According to Werber et al. (2015, p. 178), the personal traits of decision-makers, including their formal education, computer knowledge, and general skills, significantly impact the

adoption of technologies in SMEs. They emphasize that these characteristics are crucial for the successful implementation and operation of computerized business systems, which, in turn, affect the annual turnover. Harindranath et al. (2008, pp. 94–95) state that most owners or managers in SMEs indeed lack technical training and skills, forcing them to rely on advice from third parties. They add that this reliance possibly contributes to their cautious approach to technology investment decisions, summarizing that the limited background in technology and skills of these owners/managers plays a critical role in shaping the nature and extent of technology investments in their firms.

Albar and Hoque (2017, pp. 14, 18) as well as Joensuu-Salo et al. (2017, pp. 64, 91) confirm this viewpoint by stating that the technology knowledge, or lack thereof, had a significant impact on the intentions of its use in SMEs, sometimes even forming an adoption barrier. According to their views, this implies that the less is known about technology, the less likely a company is to utilize it in their workflows. Zahoor et al. (2023, p. 6) share a similar view, stating that managers' digital literacy (MDL) is connected to technology utilization. Management Consulted (2022) explains that digital literacy is a combination of two distinct skills: the ability to utilize technology effectively and the understanding of its impact and positive improvement potential on one's business.

It certainly seems that for an SME to be able to enter the space of digital tool utilization in its daily operations, is strongly gatekept by the top management and leadership of the company. If it happens that these decision-makers are either unwilling to broaden their views or simply oblivious to the changes happening in the environment around them, the business is quite possibly guaranteed not to enter into even the initial phases of digital transformation and technology utilization to better their business.

According to Albar and Hoque (2017, pp. 4, 14, 17), regulatory and environmental factors, such as lack of support from governments and banks, can also act as significant factors in the adoption and intention to use technology in SMEs. Albar and Hoque (p. 6) explain a notion made by CITC (2015), which has stated that companies may also lack the required facilities for information technology training. This would imply that companies could also suffer from physical size and resource limitations.

Larja and Räsänen (2019, p. 9) make an interesting statement, as they say that the age of the company does not seem to be related to the company's degree of digitalization, despite

the common stereotype of a young and heavily digitalized company. They add that the relationship between a company's size, in terms of its employee count and revenue, is significantly linked to its adoption of digital technologies. They continue to explain that larger organizations tend to have the capacity to leverage a broad range of digital tools. This viewpoint is supported by Ramdani et al. (2013, p. 14) and Joensuu-Salo et al. (2017, p. 83), who also state that the size of the business significantly affects the extent to which a company utilizes technology and digitalization in its operations, with smaller companies rarely, if at all, gaining an advantage from their utilization.

According to Harindranath et al. (2008, pp. 94–95), one of the single largest barriers for SMEs in future technology investments is cost. They continue by explaining that this perception is due to the nature of their source of funding. They state that SMEs operate in cash-poor conditions surrounded by high competition, and they usually source their funding for new technology investments from their retained profits. From this, it can be deduced that the combination of utilizing the retained profits for technology investments in cash-poor conditions will most definitely amount to being a barrier for investment. According to Ramdani et al. (2013, p. 14), the lack of financial resources, alongside technological resources, can be grouped under the factor called organizational readiness, and without it, SMEs will not be able to adopt new technologies. Larja and Räsänen (2019, p. 10) explain that the better the economic conditions and profitability the company has, the higher is the likelihood for them to adopt the use of digital tools. Such a notion is quite evident but still brings great confirmation to an inference made by using so-called professional judgment about the fact that, in the simplest terms, the more money a business has at its disposal, the more willing it will be to invest it towards beneficial targets.

According to Albar and Hoque (2017, p. 4), one cause for the sluggish adoption of technologies in SMEs can be attributed to the businesses' general lack of knowledge about technology. Harindranath et al. (2008, p. 95) expand by stating that the SMEs' capability gap in technologies is further exacerbated by a lack of internal technology specialists. They add that many SMEs are also uninformed when it comes to a variety of support mechanisms that are offered by regional and national agencies.

Kettunen et al. (2020, p. 19) support this viewpoint by stating and expanding that the primary challenges companies face in adopting digital technologies stem from the expensive nature of hiring external consultants. He continues by stating that for nearly two-thirds of those



surveyed, this is considered a significant or extremely significant hurdle. Furthermore, finding qualified experts is a major challenge, with roughly half of the respondents deeming it a significant or extremely significant difficulty. Additionally, just slightly under half report that the costs associated with maintenance and upkeep are a significant or very significant obstacle in adoption. He ends by explaining that when it comes to expenses related to training staff and acquiring new technology, the responses average out to be moderate, with about half of the respondents identifying these costs as substantial or very substantial barriers. Similar findings come from Joensuu-Salo et al. (2017, p. 64), who state that finding high-quality outside help and its expensive nature are the most major challenges for roughly half of the respondents. They also note the effect that staff expenses and upkeep expenses have on adoption.

Due to lack of inhouse skill as well as time for implementation and development, the use of digital technologies and digitalization has been experienced as a challenge in SMEs (Iiskola et al., 2022, p. 31; Joensuu-Salo et al., 2017, p. 94; Kettunen et al., 2020, p. 20; Kääriäinen et al., 2020, p. 34). In big organizations, the duties associated with various internal and external enhancement efforts are usually divided. On the other hand, in smaller organizations, the same individual may be in charge of multiple improvement tasks. In the least favorable scenarios, development tasks are carried out in an ad hoc manner alongside other responsibilities, hindering the structured progress of digital transformation (Kääriäinen et al., 2020, p. 31).

Ramdani et al. (2013, p. 13) point out that certain features a technology possesses—such as its fit for the business's purposes, ease of trial, complexity, and visibility of benefits—play significant roles in the decision to adopt technology. Moreover, they mention that businesses with limited in-house technical knowledge may find adopting these applications overly complicated. Albar and Hoque (2017, p. 4) add that insufficient technology infrastructure is also identified as a barrier to technology adoption. Harindranath et al. (2008, p. 95) note that the fear of adopted technologies becoming obsolete without frequent updates is a concern for businesses. Kettunen et al. (2020, p. 20) explain that the wide range of technologies available for investment can cause uncertainties, thus forming a barrier to technology utilization.

According to Westerman et al. (2011, pp. 38, 52), the organization's culture can also form a barrier to digital transformation. They add that the workers can be the largest factor standing in the way of successful transformation. Though Harindranath et al. (2008, p. 94) also note

that for some SMEs, it is actually the owners and managers who act as a blockade for the adoption, instead of workers, who were in fact willing to learn something new regarding technologies. But more evidence seems to indicate that such a case may be part of a minority as Albar and Hoque (2017, p. 14) once again state that the culture of the organization is a significant variable in SMEs' intention to use technology. Von Leipzig et al. (2017, p. 518) bring up a notion made by Albrecht (2015), who states that the cultural barrier of people's indifference and unwillingness to change in the face of major development actions, like digital transformation, is often underestimated and possibly even unrecognized by companies. Similar views are shared by Joensuu-Salo et al. (2017, p. 102) and Kettunen et al. (2020, p. 39), as they state that companies can face pushback from workers due to their unwillingness to change, fueled possibly by the fear of the unknown and also due to already notable work stress, which does not add to their willingness to spend time on learning something new.

Suvinen et al. (2023, pp. 39, 51) highlight various reasons for reluctance towards digital transformation in industries, including not just the previously mentioned lack of skills and time, but also the older age of staff members. They argue that older employees, in comparison to their younger counterparts, face significant challenges due to insufficient skill levels, as well as a sense of uncertainty and resistance to using digital technologies. This ongoing issue is exacerbated by the continuously increasing complexity of technology. Supporting this perspective, Kettunen et al. (2020, pp. 19–20) identify varying skill levels as a key barrier to the adoption of information technology, with nearly half of the survey participants considering it a major hindrance.

Werber et al. (2015, p. 173) and Shevtsova et al. (2020, pp. 4–5), alongside Joensuu-Salo et al. (2017, pp. 44–45) and Kettunen et al. (2020, p. 18), all have similar views about the levels of skills towards technology use in companies. Despite slight variation in their measuring techniques, all have come to the conclusion that the majority of employees have their skill level at somewhere in the middle, with only a minority being highly efficient in the use of the technologies. However, they note that around one-third of the employees fall into the category of low skill level, and this is especially true when it comes to digital security. Kettunen et al. (p. 22) add that only a fifth of companies are confident that they have the required capabilities and resources to utilize the newest technologies in their workflows.

Kettunen et al. (2020, pp. 37–38) continue to explain that if the usability is low for technologies, they have a high probability of not getting used. They continue by stating that different

factors, such as the efficiency provided by the technology, ease of use, and impact coming from the social surroundings, affect the adoption of technologies from the perspective of the employee. They explain that if the technology is not effortless and easy to use, it will become just one more burden for the worker to work with, and this is one of the largest hindrances for technology adoption. Tai-Kuei et al. (2017, pp. 198–204) also note that people prefer technologies that are not complex to use. They add that the complexity of technology, coupled with the employees' feelings of being overloaded and stressed, form major barriers to technology adoption. They also add that an individual's experience with media in the past and their digital tool skills significantly affect their willingness to try new technologies.

In essence, it does seem that the employees also have a highly influential role in businesses when it comes to the adoption of new technologies. And this matter is being made even more pressing by the fact that there is a notable number of employees that lack a sufficient skill level when it comes to technology. This, coupled with the willingness to learn new technologies—a view that these employees with low skill levels usually possess—may, in fact, be a more prevalent cause for the non-adoption of technologies than one might first assume.

In summary, as stated by Iiskola et al. (2022, p. 5), SMEs are often unable to adopt new technologies into their workflows due to limitations in skills, resources, and vision. Harindranath et al. (2008, p. 94) furthermore argue that technology itself is not a barrier in most cases. Westerman et al. (2011, p. 39) highlight that the largest gaps in organizations for digital transformation stem from missing skills, coupled with cultural issues and ineffective IT; they also add that a business can face multiple of these blockades at once. Iiskola et al. (2022, p. 5) argue that the majority of SMEs, which possess limited resources, are in dire need of outside help regarding digitalization. Tan et al. (2010, p. 51) remind us that SMEs are often unaware of the help and assistance offered by governments and the private sector, which in turn hinders the adoption of technology. Hasu (2021, p. 77) also notes that the profitability of technology investments is often judged by simple means, sometimes even by just intuition. Based on the earlier information, it can be said that this is most likely insufficient at the very least, as judging something about which one might have very limited knowledge by simply making so-called educated guesses, which in this case could be called uneducated, does not give exactly a full picture of the benefits that could be gained from that investment.

According to Larja and Räsänen (2019, p. 11), the success of a company seems to correlate with its level of digitalization: businesses that employ contemporary digital technologies tend

to view their economic status more positively, and they also perceive their profitability to be higher than their less digital counterparts. Albar and Hoque (2017, p. 18) furthermore add that perhaps one of the key motivations for adopting ICT by SMEs was the benefits they gained from its use.

### **2.3.3 Assessing technology utilization across industries**

Suvinen et al. (2023, p. 52) note that, specifically in Finland, businesses in the industrial sector are facing a need for skilled experts who can keep their systems up and running in a secure way. According to Ek (2020, p. 52), the construction, agriculture, and manufacturing industries have seen slower digitalization than others. Larja and Räsänen (2019, p. 9) add that from various industries, transportation, warehousing, and construction are ones that specifically stand out from others by their limited use of technology. They explain this by stating that this is possibly due to their typically smaller company size compared to other industries. Harindranath et al. (2008, p. 93) note that for transportation and food industries, digitalization is more prevalent in the management functions of the companies. They explain that this is due to European legislation with which companies must comply. Lastly, they note that the adoption of technologies such as email was near universal. According to Larja and Räsänen (2019, p. 10), sectors which use modern digital tools extensively are the information, communication, finance, and insurance industries.

It seems that technology adoption does indeed vary widely across industries and regions, reflecting diverse priorities and, as noted earlier, this adoption has a plethora of barriers. But Suvinen et al. (2023, p. 63) remind us of the important nature of technology adoption in different industries, explaining that as the activities of crucial partners of businesses transition to digital platforms, failing to leverage digitalization itself poses a business operation risk. She continues by stating that there is a real concern that this might lead to the complete elimination of some companies.

### **2.3.4 Key drivers of technology adoption in businesses**

Westerman et al. (2011, p. 9) detail that companies feel pressure to start digital transformation from multiple directions, inside as well as outside. Hasu (2021, pp. 71–72) states that businesses operating in the primary manufacturing sector invest in information technologies

primarily for financial gain and improved competitiveness. She compares this to the service and consultancy sector, where the most valuable resource is commonly time, and with investments towards digital technologies, they aim to increase efficiency and thus promote the conservation of resources. Shevtsova et al. (2020, p. 5) have a similar view, stating that businesses in the service sector believe that information technology can improve their business's efficiency.

According to Shevtsova et al. (2020, p. 5), the majority of Ukrainian SMEs were in a situation in which they had to adopt digital technologies as a response to their widespread diffusion in the external environment. A similar view is held by Suvinen et al. (2023, p. 43) and Joensuu-Salo et al. (2017, pp. 83–84), who state that the industry and central players in the business circle may set a qualification for the rest of the players connected to them to adopt digital technologies as part of their businesses. They continue to state that if any of the businesses fail to comply, they may face the reality of falling out of a business agreement, and in the most extreme cases, it may even lead to the full ending of the business operations for certain businesses. Suvinen et al. (2023, p. 43) end by stating that for businesses dealing in the industry of primary production, this has been a major reason for digitalizing their businesses.

Joensuu-Salo et al. (2017, p. 94) explain that customers may also be a forcing factor for a business to digitalize its processes. They add that there is a high probability that such requirements from customers will become even more commonplace in the future, and if businesses are not able to respond, they may end up losing to competition. According to Ramdani et al. (2013, p. 14), the environmental context, such as competitive pressure, also significantly affects technology adoption in SMEs positively.

With the backdrop of different drivers for technology investment comes the question of what technologies do these businesses that do, in fact, willingly adopt technology, invest in. In 2023, companies allocated 18 % of their information technology hardware budget to laptops, making it the top expenditure, with desktops coming in second, receiving 13 % of the hardware budget (Statista, 2023c, p. 12). According to Werber et al. (2015, p. 173), above all, companies seem to procure computers, and even in a microenterprise, the average amount of computers an organization had was nearly roughly five for a business. They also state that when it comes to computers, there is a split between laptops and desktop computers, out of which businesses favor laptops more. From these findings, it would appear that companies

are increasingly transforming to become more mobile and are striving to enable employee mobility. This trend can be observed from the companies' willingness to invest in laptops.

According to Westerman et al. (2011, p. 37), businesses invest in collaboration tools alongside internal knowledge bases, as they are seen as a low-cost and low-risk infrastructure investment with the benefit of smoothing the cooperation of geographically dispersed workforces. Similarly, Harindranath et al. (2008, pp. 93–94) highlight that the primary motivation behind information technology investments in businesses is operational, driven by the imperative to enhance operational efficiency. Other reasons listed include improvements in customer service, the need to keep up with competitors, to increase staff satisfaction, and, as also mentioned earlier, to enhance joint working and collaboration. They continue to explain that the primary reason, of an operational nature, is motivated by the highly competitive, low-margin business landscape many SMEs find themselves in, which necessitates a relentless focus on cost reduction.

### **2.3.5 The crucial role of adopting new technologies in business workflows**

Hasu (2021, p. 70) mentions that the advantages of digital investments can include both the specific benefits that were targeted as well as unexpected, additional benefits that arise by chance. According to Suvinen et al. (2023, p. 44), some benefits gained from the digitalization of a business include paperlessness, alongside cost savings, improved information flow, enhanced monitoring of operations, remote work and management, occupational safety, and increased job satisfaction due to the elimination of the simplest routine tasks. Berisha-Namani (2009, pp. 2–4) highlights that new technologies not only enable increased interactivity, flexibility, and cheaper business transactions but also enhance interconnectivity with business partners and customers. Moreover, their greater use improves information availability, work quality, and effectiveness and efficiency in task completion. Werber et al. (2015, p. 178) note the imperativeness of using digital technologies in businesses, stating that even the smallest companies will gain efficiency improvements from computerization. Findings from Harindranath et al. (2008, p. 94) support this view as they state that the primary benefits of technology adoption are operational improvements, with technology also enhancing productivity in three out of four sectors.

According to Harindranath et al (2008, p. 94), majority of businesses feel that technology helps them to stay on par with their competition. Berisha-Namani (2009, pp. 3–6) adds that in today's world, technology plays a crucial role in driving changes across various sectors, from improving the flow of information to impacting trade and the competitive advantage of companies in different industries. They emphasize that businesses of all sizes must adapt to these changes by investing in technology. They stress that this is particularly vital for SMEs to foster competitive growth. They add that information technology can facilitate value creation for SMEs by enabling innovative business models. These models in turn can help them compete effectively against the larger players.

According to Hasu (2021, pp. 72, 73, 95), not immediately apparent and latent side benefits gained from digital investments include factors which often increase the quality of life for workers, specifically in the service sector. She adds that these benefits include achieved time savings, added flexibility of the work, as well as the work becoming easier in general. Ek (2020, p. 52) details further benefits, arguing that companies which have digitalized their operations more heavily are in an objectively better position to innovate, grow, and face the challenges brought forward by the environment, compared to companies that have implemented digital technologies only in a preliminary manner.

Joensuu-Salo et al. (2017, pp. 25, 59, 83, 101, 102) state that companies which have digitalized their businesses have felt that it has benefited them, and this has also been linked to a statistical growth of their business, especially in the manufacturing sector. They add that every business utilizing digital technologies has felt the direct benefits of them, but they say that customers are the ones benefiting the most. They finish off by explaining that businesses have benefited from digitalization tremendously in terms of bettering their business, leading to succeeding better also financially, and therefore, they emphasize how important it is to support SMEs in this journey of digitalization even in the future. Werber et al. (2015, pp. 174–179) share a similar viewpoint, stating that a business's annual turnover is positively correlated with the degree of its technology investment. They continue by arguing that companies with more workstations in use have higher turnover than their counterparts. Additionally, they note an interesting fact: if the company's owner is knowledgeable about digital technologies, the company tends to have somewhat higher turnover. They conclude by highlighting the significance of digital technologies for businesses and their success.

On the contrary however Westerman et al. (2011, p. 36) remind that not every digital project aimed at enhancing a business is suitable for every business. This is true, and based on this observation, it can be noted that certain businesses, for one reason or another, do not in fact require much digital technology in their day-to-day work and can get by with simple email and websites to contact potential customers. However, even in this case, having these rudimentary applications in use can cause problems for some with the lowest level of skill in digital technology.

Kääriäinen et al. (2020, pp. 35–36) argue that, despite the new and unknown applications lying ahead to be implemented in the digital transformation process, businesses should not be scared away from going through with the process. Therefore, they suggest creating a roadmap to be followed in that journey and to give the staff of the businesses ample time to get used to the systems implemented before the process moves to the next step and implements the next new technology. Harindranath et al. (2008, p. 94) note that the majority of SMEs that were surveyed were satisfied with the technology acquisitions they had made and that they offered great value for their business.

Looking back, it becomes quite evident that, although technology adoption levels vary among businesses, investments in technology can significantly improve performance, especially for SMEs. As the digital landscape continues to evolve, prioritizing digitalization becomes crucial for businesses to maintain relevance and achieve sustainable growth. Therefore, embracing technological advancements is not simply beneficial, but essential for the success of modern businesses. However, as seen, businesses face the challenge of tailoring their specific digital transformation journey to their specific needs and goals. Since no two businesses are identical, finding the perfect fit can be difficult, but partnering with a third party could alleviate this struggle.

### **2.3.6 The importance of external support in business digitalization**

According to Joensuu-Salo et al. (2017, pp. 82, 94, 103), and Ek (2020, p. 47), companies tend to need outside help when it comes to digitalization and digital transformation, as it is a challenge for many, especially for the smallest of companies lacking the required expertise and resources to utilize the transformation in advancing their business. Kääriäinen et al. (2020, p. 34) share a similar view, stating that micro-enterprises require support, especially



when it comes to identifying opportunities for digitalization. Kettunen et al. (2020, p. 21) also share this notion, explaining that business owners need concrete help with training their staff to better interact with technologies. They also note that help is needed with the use of digital tools, such as different media channels used for marketing purposes, and help to gain a better understanding of the opportunities offered by digital technologies in general.

Kettunen et al. (2020, pp. 68–69) highlight the potential benefits of expanding businesses' networking efforts beyond one's own industry when it comes to digital ecosystems. They argue that partnering with companies in the technology sectors could potentially offer fresh insights into business operations and facilitate advancement in the utilization of digital services and tools. They end by stating that such collaborations could lead to the creation of a cohesive and effective digital infrastructure, enabling each business to concentrate on their core competencies. Folkes (2020, pp. 28, 87) supports this view by stating that with the help of technology, the owners of SMEs can differentiate themselves from the competition. However, he notes that successful implementation, as well as support of these technologies, needs to be done by a knowledgeable information technology specialist, which also offers a chance for a business to outsource their technology support altogether. He ends by stating that businesses partnering with IT companies can increase their chances of surviving in the contemporary world.

So far, it has been established that the world is going through a change—a digital one—and it is affecting quite literally everything and everyone, businesses included. Regardless of their size, businesses are faced with a reality that, quite bluntly put, forces them to take the leap towards digitalizing their operations, either fully or partially. For some, this change is not embraced willingly for a multitude of reasons, the most significant being the costs and uncertainties that technology brings, especially for those not highly skilled in technology use. However, as has been pointed out, the transformation can and will offer more pros than cons for businesses, as it facilitates more efficient workflows and savings in the often-precious resources businesses possess. Furthermore, it will provide a better foothold in the markets, helping businesses to better compete against their peers, as well as larger players that possibly dominate the markets. However, despite every pro and con taken into consideration, succeeding in the process of transforming one's business to utilize more digital technologies and to take advantage of the benefits they offer can often be challenging, especially for smaller businesses. Luckily, they do not have to be alone in this journey, as help can be almost just

around the corner, or at least one call away, as is the case with outsourced IT support services.

## **2.4 Benefits and practicalities of IT support outsourcing for SMEs.**

According to Nguyen (2023, p. 6), IT outsourcing has become increasingly popular among businesses of various sizes in different industry sectors. Typically, these companies seek to outsource services related to IT support and infrastructure management, among other business applications. Westerman et al. (2011, p. 23) add that many businesses opt to seek assistance from outside the organization with technical matters. They continue to say that over three-quarters of the surveyed companies employ third parties for significant projects or ones that necessitate cutting-edge technologies. They end by stating that these vendor partnerships can be highly effective for businesses. Werber et al. (2015, p. 172) note that out of all micro-enterprises, six percent outsource their information technology services. Lehtikoinen and Töyrylä (2013) add that the degree of outsourcing does, however, vary depending on the size and the age of the business. They note that approximately 50 % of businesses with over ten employees have either partially or fully outsourced their workstation services. Furthermore, around 80 % of similarly sized companies have utilized external service providers for at least one IT task.

According to Kumbakara (2008, p. 341), outsourcing can offer benefits such as reduced capital investment, alongside scalability and flexibility, ability to focus on core business, economies of scale, and cost savings. Murphy (2010, pp. 3, 51) has a similar view from a customer's perspective, supporting the earlier statement. He states that businesses have different reasons to outsource, which can be divided into roughly five main categories: financial, namely cost savings, access to the latest technologies and skills, focus on core competencies, improved service quality, and lastly, a lack of skills present in the business. He adds that different managers may have different reasoning for outsourcing, giving an example of a senior manager who may outsource for reasons related to financial matters, whereas others may outsource for strategic reasons. These mostly same reasons are echoed also by a variety of others as Lacity et al. (2010, pp. 404, 417), alongside Lehtikoinen and Töyrylä (2013), and Lacity et al. (2009, pp. 130–134), all agree that the main reasons why businesses end up outsourcing are to reduce costs, to be able to focus better on their core capabilities, gain access to experts alongside other technical reasons, and lastly, to improve their business

processes. Stubin (2022) adds a regional perspective by stating, that in Finland businesses that choose to outsource do so for the main reasons of being able to concentrate on their core businesses and gain benefits from the scalability of outsourcing, with half of the companies considering the achieved cost savings as a significant positive factor.

According to Lacity et al. (2010, pp. 407–408), the achieved cost reductions via outsourcing are, and have been, the most significant factor in the outsourcing decisions made by companies, especially in the case of information technology functions that are not linked to the core business and are thus provided more efficiently by IT experts. Lacity et al. (2009, pp. 132–133) argue further that the financial condition of a business impacts greatly its decisions to outsource IT services, with firms in financial distress often choosing to outsource these functions. They continue to explain that this trend is especially noticeable in instances involving extensive IT outsourcing, adding that the driving force behind such decisions is the desire to reduce expenses. They note that although there are discussions about the strategic advantages of IT outsourcing, the imperative to decrease costs stands out as the dominant factor for most companies engaging in these practices. Murphy (2010, p. 51), however, brings in an interesting statement as he argues that despite cost being a major factor for outsourcing, it is that way mostly only in the beginning stages of a business. He continues by explaining that as a business grows, the quality of the outsourcing service becomes a much more significant factor for decision makers.

Westerman et al. (2011, p. 38) note that companies with gaps in their business skill repertoire fill them by hiring external experts, adding that skills which may be in short supply in the business's own industry sector may often be found in others. Nguyen (2023, p. 6) adds that such a reason for the lack of skilled IT experts is, in fact, one of the main factors affecting the decision to outsource. She further notes that the shortages of skilled experts are caused by high demand and also demographic issues. Lacity et al. (2010, pp. 408–409) have a similar view as they state that the outsourcing decision of a business was significantly motivated by the ability to acquire skills and expertise alongside cutting-edge technologies unavailable in-house from third parties. They furthermore add that when the management of the company viewed that the business or the technology department had low performance, it prompted them to outsource these activities more frequently.

According to Oh (2008, pp. 106, 111, 112), businesses that carry out more research and development, as well as companies that tend to have operational inefficiencies, are more

inclined to outsource IT resources. Conversely, increased levels of uncertainty deter firms from outsourcing. Interestingly, the firm's IT intensity—that is, the degree to which a company invests in information technology—does not influence its outsourcing propensity. Lacity et al. (2010, p. 409) and Hanafizadeh and Zareravasan (2020, p. 19) mention the influence of a company's perception about its peers' successfulness and competition on the decision to outsource, as firms that feel more threatened are more likely to end up in a decision to outsource to maintain their competitiveness. Hanafizadeh and Zareravasan (p. 20) add that for many, the social effects factor significantly influences the decision-making process in outsourcing. They explain that this factor is known as social influence, and it relates to an individual's perception of the importance of others' expectations regarding their use of new systems. In the context of outsourcing, social influence shapes the willingness of employees and managers to embrace it, driven by the impacts of their peers or other companies, which is positively linked to decisions regarding outsourcing.

According to Oh (2008, p. 112), Harris and Katz (1991) argue that small, yet growing companies tend to spend a notable portion of their revenues on information technology. They add that many of them run into the problem of not having enough internal resources to develop and implement these technology systems themselves. Thus, despite being familiar with investing in technology, due to its rapidly complexifying nature, they have to resort to different types of outsourcing arrangements. Murphy (2010, pp. 52–53) furthermore highlights several factors that influence outsourcing decisions made by businesses, including the earlier mentioned absence of internal capabilities, alongside prior outsourcing experiences, and access to skilled personnel and new technologies. He continues by adding that this would suggest SMEs' IT systems might be so basic that they do not require a dedicated internal IT department. He furthermore notes that despite cost reduction being the primary motivation for outsourcing among businesses, there's a clear emphasis on maintaining quality. He writes that when questioned about the possibility of obtaining services at a lower cost, businesses uniformly stated they would only consider it if the quality of the offered service remained unaffected, underscoring a willingness to invest more for superior service quality. Hanafizadeh and Zareravasan (2020, p. 21) interestingly noted that a company's willingness to invest in outsourcing increased with its perceived benefits. Additionally, top management support consistently emerged as a key factor encouraging the outsourcing decisions.

According to Nguyen (2023, p. 7), for a company, outsourcing can be an effective cost resilience strategy as it offers the business a multitude of benefits, such as the ability to focus their resources towards concentrating on the business's core functions, alongside the ability to save on costs and resources. Building on this concept, it could be argued that small businesses might find this an exceptionally effective method to acquire support services, helping them advance their operations. A notion by Hasu (2021, p. 23) supports this insight, as she states that, compared to larger companies, SMEs have significantly fewer resources at their disposal as well as more limited access to them. A viewpoint from Murphy (2010, p. 29) also strengthens the earlier notion, as he states that businesses often do not have the resources and time that complicated in-house information technology infrastructure management requires. Westerman et al. (2011, p. 51) note that when it comes to investing in new technologies, it is usually a simpler option to hire outside help in the form of a vendor than to employ new personnel.

Lehikoinen and Töyrylä (2013) state that the savings gained from outsourcing can be categorized into two primary groups. They elaborate that the first category is financial, highlighting that service providers, due to their specialization, can deliver the required services at a lower cost. This specialization allows them to leverage their expertise, making the production cost of the service significantly less than if their clients were to provide these services internally. They add that the second category is the benefit gained from the economies of scale. Folkes (2020, pp. 67–86) writes that as the technical products businesses had, were maintained by third-party professionals, this benefited the businesses by providing them financial overhead. He continues to explain that thus, the outsourcing benefited the business also by adding to their sustainability and growth. For this reason, he strongly emphasizes the fact that it should be a top priority for SMEs to invest in technology upgrades and outsourcing as this combination will lead them to a successful future.

Oh (2008, p. 113) notes the prominent advantage of outsourcing, which is the ability to access the cutting-edge technologies provided by the service provider. He explains that this is especially beneficial for businesses that are inclined towards research and development, as they can gain technological flexibility from leveraging these provided technologies. Folkes (2020, p. 10) ends by stating that leaders in businesses who choose IT services that are effective have the possibility to also improve their ability to better respond to the changing needs of the customers.

Put shortly, outsourcing offers businesses a plethora of benefits, out of which the most notable is the financial gain that companies can achieve. Moreover, as a business decides to invest in IT outsourcing, they gain the ability to focus more on their core business, which in turn will facilitate the strengthening of the business itself, often leading to a more sustainable future. These benefits are especially important for SMEs, often struggling with their low abundance of resources. They can possibly incur notable savings that can then be better spent on growing the business itself, all the while having some of their strategically important assets taken care of by a set of professionals with high efficiency. The nature of the benefits gained from outsourcing, therefore, should be considered an extremely valuable strategic resource that no business should avoid, especially SMEs. Positively, though, outsourcing is being adopted more and more in the contemporary world, but with such a powerful asset, it should be utilized even more widely in the ever-complexifying world in which competitors are mere steps away from each other.

## **2.5 Investment potential of SMEs in IT support**

Suomen Yrittäjät (2023a) conducted a comprehensive study focusing on various aspects of SMEs, including their development, growth, investments, and allocation plans for external financing. The study revealed varied interests among SMEs in different regions of Finland regarding the planned use of external financing, particularly towards information technology investments. In Southern Ostrobothnia, the responses indicated a diversity of interests in allocating financing for IT (Suomen Yrittäjät, 2023b). Notably, the Seinäjoen seutu subregion showed a significant inclination towards investing in IT, contrasting with other subregions of the region where such investment plans were nonexistent.

Conversely, in Central Ostrobothnia, out of the two subregions, SMEs in the Kaustisen seutu subregion exhibited a somewhat more positive attitude towards allocating financing towards IT investments compared to the Kokkolan seutu subregion, where there were no plans to allocate any financing toward IT (Suomen Yrittäjät, 2023c). The most positive outlook for allocating financing towards IT was observed in Central Finland, where SMEs in three of the four subregions had plans to dedicate a portion of their planned financing to IT investments, with SMEs of Pohjoinen Keski-Suomi leading the charts (Suomen Yrittäjät, 2023d). This trend suggests a regional difference in the prioritization of IT investments, which could be attributed to many reasons. Possibly the most pressing is the fact that the economic outlook for the

whole country, from the perspective of SMEs, is currently on the negative side. This may be hindering the willingness to invest in IT, a notion that becomes apparent when viewing the materials of the study (Suomen Yrittäjät, 2023b).

According to Werber et al. (2015, p. 173), the combined average investment a microenterprise makes towards information technology hardware and software in a year is roughly € 2 400,00. Murphy (2010, p. 50) writes that companies with fewer than ten employees invested anywhere from four to six thousand euros towards information technology yearly. Oh (2008, p. 110) notes that companies included in his study's sample spent 17 percent of their information technology budget on outsourcing. He furthermore adds that there was a noticeable difference in the intensity of outsourcing between companies; some outsourced only a very small fraction of their tasks, while others outsourced nearly everything. Inspecting these findings in light of the former information about regional willingness to make information technology investments, it could be argued that the reality of the size of the investments towards outsourcing lies somewhere in the middle of the reported spending numbers, at least for the time being.

Sanchez (2009, p. 203) notes, however, that consumers of these technical support services are, in fact, inclined to pay a premium for vendors who hold a better reputation in customer service. According to Folkes (2020, p. 36), Mankasingh and Ramsoomair (2017, pp. 1–6) also support this view, though from a slightly different perspective, as they allegedly found that business owners tend to prefer hiring small IT consulting firms over larger ones when the education and experience of the consultants are identical but the fees are lower, thereby also providing a competitive edge to smaller firms. They add that despite the abundance of IT consulting services, small IT consulting firms gain an advantage with small business owners against larger companies. Drawing from subjective experiences, it can be said that small businesses have often been much better equipped to offer this great customer service experience compared to the largest corporations.

According to Tuomi and Aittoniemi (2022, p. 10), regular engagement with clients is crucial for maintaining existing customer relationships. They continue by explaining that the absence of ongoing communication endangers the stability of the customer relationship. They add that sufficient and varied communication further enriches and fortifies the pre-existing relationship with customers. Furthermore, the management of fault situations has been considered very important. They explain that serious errors and other complaints can serve as pivotal

moments in the relationship with customers, adding that effectively resolved issues can enhance the relationship, while mishandled ones might put the relationship at risk. One might interpret this to be a key factor when viewed from the point of view of future investments towards outsourcing, as unhappy customers unwilling to continue the partnership are the enemy of future investments.

Sanchez (2009, pp. 201–202) adds that customer service is a concept that goes beyond simply pleasing customers. He explains that it is about delivering measurable value that earns their loyalty in a competitive landscape. He continues to explain that customers tend to gravitate towards support organizations that offer additional value beyond the standard terms that have been agreed upon in the support agreement. Additionally, he points out that for the service providers, customer service serves as the unique element that sets companies apart in a market saturated with generic and similar products and services.

However, despite these findings, after an extensive review of the literature, one can say that it surely seems that businesses have more reasons not to invest in outsourcing in their minds than they have reasons to invest, despite the multiple times proven benefits of outsourcing. Tuomi and Aittoniemi (2022, pp. 15–19) highlight one reason for this, which is the fact that if the benefits of the offered service have not been brought out well enough, it can have an effect on the possible customers' willingness to invest in the service. Murphy (2010, p. 6) adds that reasons such as resistance coming from the employee side and managements loss of control can also have a negative effect on the willingness of businesses to outsource. Interestingly one can point out that these variables are largely similar as to those met in the adoption of new technologies to a business.

According to Mole et al. (2017, pp. 485–487), the business's willingness to seek formal assistance was affected by multiple variables. They add that among these variables are factors such as the size of the company, with businesses that have above ten employees being more inclined to seek this assistance, whereas micro-enterprises with less than ten employees were less likely to do the same. They write that SMEs operating in certain consumer service industry sectors were also possibly less inclined to seek help from outsiders. Businesses were also unlikely to seek outside help if they believed in their own capabilities in handling the issue. They note that the business's objective for growth contributed to their willingness to seek assistance. Nevertheless, they add that interestingly, there were also owner-managers who could have used formal assistance, as they did not have the internal capacity in their



own business to handle the issues they faced, yet they were unwilling to seek such help. This kind of response is interesting, at the very least, and one can only try to guess why such behavior is being depicted by the business owners, as, at least from an objective point of view, a business would always be inclined to do everything it can to better its current situation and strive towards at least some kind of improvement, even if it ends up being only marginal.

Another roadblock that can affect a business's rate of adopting outsourcing can come from the simple fact that a business may not be able to find the right vendor for itself (Joensuu-Salo et al., 2017, p. 103; Kääriäinen et al., 2020, p. 36; Mole et al., 2017, p. 490; Murphy, 2010, p. 62). According to Mole et al. (2017, p. 490), some businesses believe there is no correct type of assistance out there for them. Furthermore, they note that other issues acting as barriers to seeking external assistance include doubts regarding the cost of the service, as well as the benefits and value of the assistance. They also write that businesses may have concerns regarding the ability to trust the external advisor and their skills. Lacity et al. (2010, pp. 408–411) add that if the firm fears it would somehow lose control, this will lessen the likelihood of the business investing in outsourcing. Furthermore, if a business is uncertain about the future of its information technology needs, this will discourage them from outsourcing. Oh (2008, p. 112) has a similar view regarding uncertainty, writing that it will have a negative impact on firms' propensity to outsource their information technology resources. He adds that when uncertainty can be detected, a company is more inclined to develop in-house information technology systems and minimize the use of outsourcing arrangements. He concludes by stating that despite the tangible benefits gained from outsourcing, businesses tend to still prefer internal systems when uncertainties are present.

Mole et al. (2017, pp. 489–492) note that businesses not utilizing external help, called non-users, with concerns towards external help, often include the youngest companies in their first years of practicing their craft, alongside the smallest of the companies consisting of businesses that have no more than five to nine employees. They continue to explain that the majority of these non-users, alongside survival-oriented businesses, were specifically sensitive towards price, as the majority were unwilling to pay for such services, or at the very least, not willing to pay the asked rates. They also note that the owners of businesses that are not familiar with external assistance and have not used such services before are also reluctant to pay the asked rates for them. Lehtikoinen and Töyrylä (2013) remind us that it is often the case in situations like these that price becomes the focal point of the issue when a business

is thinking about outsourcing, and the often more important factor of quality gets much less attention.

According to Mole et al. (2017, p. 492), this suggests that it is not enough to merely inform SME owner-managers about the availability of services; there is also a need to more effectively persuade them that these private service providers can contribute positively and offer substantial value for their investment. Despite all the roadblocks that potential customers might set between themselves and the benefits gained from outsourcing, Sanchez (2009, pp. 27–28) notes that once clients are aware of your presence, they prefer to contact you directly for inquiries instead of searching for the answers on their own, as it saves them time, considering you can provide the answers more quickly than they could find them themselves.

In essence, businesses exhibit varied behaviors regarding the amounts invested and decisions made towards outsourcing. This variability is especially evident in the regions of Finland mentioned earlier. Furthermore, it appears that businesses have ample reasons to hesitate in adopting outsourcing, despite its numerous benefits. Among these reasons, cost is the most significant, sometimes occupying an unduly large portion of the businesses' focus. Fortunately, there is a form of outsourcing accessible even to the smallest and most price-sensitive businesses, which will be discussed in the next section. Moreover, once businesses have had the opportunity to familiarize themselves with the outsourcing provider and recognize the benefits they offer, this understanding becomes a key factor encouraging them to adopt such services and, at times, to pay quite reasonable amounts for them.

## **2.6 Managed IT services as a form of IT support outsourcing**

According to Red Hat (2022), and Moore and Rosin (n.d.), Managed IT services is a service provided by a third party to help businesses manage their information technology tasks. Tran (2022) adds that a Managed Service Provider, or MSP, in short, is a business offering tailored outsourcing services for other businesses. He adds that an MSP usually manages a portion of the business, such as the business's information technologies, from afar, usually by remote means. He continues to explain that MSPs, which have specialized in information technology, are able to provide an extensive array of different types of services for businesses of all sizes. He ends by noting that these services are usually provided over the internet as remote support services. It can be stated that such services would fit extremely well

into the more remote areas where businesses may be situated sparsely and at long distances from physical IT support service hubs.

Wattal (2020, p. 1) explains that Managed IT services comprise a number of information technology activities that are performed by the service provider for other businesses. Kumbakara (2008, p. 338) adds that these services include integral services, such as infrastructure management, which IT systems require to continue their operation. He adds that a growing number of businesses are reaching out to MSPs to help them manage their complex information technology infrastructures. Tran (2022) adds that MSPs can offer greatly beneficial help in everyday functions, especially for SMEs. According to Wattal (2020, p. 1), the fundamental purpose of opting for a managed service is to shift the responsibility of handling IT assets to the MSP in exchange for financial compensation. Red Hat (2022) furthermore explains that the managed services framework allows businesses to delegate routine tasks to experts with the goals of cutting expenses, enhancing the quality of services, or allowing in-house teams to focus on work that forms the core of their operation.

According to Kumbakara (2008, p. 340), and Tran (2022), MSPs operate proactively, ensuring that every facet of a business's technical infrastructure functions optimally and without interruption. Rather than addressing issues post-occurrence, MSPs aim to preempt technical difficulties, thereby conserving the time and financial resources businesses would otherwise expend on resolving these daily challenges. Wattal (2020, pp. 1–2) adds that the services provided by MSPs are detailed extensively in so-called service level agreements, also known as SLAs. He adds that service providers may also provide these services upon request, but nevertheless, they are liable to ensure that the systems work flawlessly, as this is what the customer is paying for. Red Hat (2022) writes that the services provided can range from general to very specific or anything in between, but the most common services are related to the management and maintenance of the information technology infrastructure. Tran (2022) categorizes these services into three groups: pure-play, staffing legacy, and high-level, with high-level MSPs providing comprehensive IT solutions that fulfill all business needs.

### **2.6.1 Where can MSPs be utilized**

According to Tran (2022), MSPs play a crucial role in managing aspects of IT infrastructure and adding value to an organization by enhancing its functionalities. They provide a broad

spectrum of IT and software services. Furthermore, while some MSPs customize their offerings to meet the unique needs of each client, others focus on delivering specialized services. Kumbakara (2008, p. 340) and Wattal (2020, p. 1) add that they can provide only one basic service or a group of multiple and complex services aimed towards solving problems and supporting the IT operations of the client business. Wattal (p. 1) furthermore explains that the list of provided services is defined in a commercial agreement. Kumbakara (2008, p. 339) adds that clients also have the possibility to enter into an outsourcing contract with not just one but multiple service providers.

According to Gartner (n.d.-a), the list of services that an MSP can offer includes network, application, infrastructure, and security services which are maintained and actively administered through continuous and regular support by an MSP, who may also offer their proprietary services along with those from other providers. Kumbakara (2008, p. 340) has a similar view as he states that the provided services include management and administration services, which are implemented via ongoing systems monitoring, status reporting, problem management, and root cause analysis methods. He adds that other services provided by MSPs may include asset procurement services, which encompass tasks related to the pricing, ordering, procurement, upgrading, and compliance assurance of IT standards for hardware and software, alongside services for network monitoring and management that involve overseeing network performance, and user access administration services. Moore and Rosin (n.d.) add that managing computers and mobile devices alongside servers is one of the common services a service provider can offer.

Wattal (2020, p. 1) states that the predominant approach in Managed Services involves remote management. Kumbakara (2008, pp. 339–340) adds that so-called helpdesk services also play a pivotal role in managed services. He explains that they act as a centralized relay between different MSP technicians and the end-users, analyzing problems and notifying field workers as problems arise. Furthermore, he adds that service providers may also offer on-the-spot support for end-users, which includes supporting services for both software and hardware. According to Red Hat (2022), some service providers have centralized their focus toward offering purely security services. Tran (2022) adds that these types of service providers are called Managed Security Services Providers, or MSSPs, in short, and they offer a holistic approach to securing the customer's business IT infrastructure. Kumbakara (2008, p. 340) adds that these services may include tasks such as safeguarding the network against

unauthorized access and breaches. It covers antivirus deployment, setting up user accounts, resetting passwords, implementing encryption, and maintaining user account details. Moore and Rosin (n.d.) add that assistance with IT security is becoming an increasingly popular request among customers. They add that some managed IT services providers have also pivoted towards offering cloud services.

### **2.6.2 What benefits can an MSP offer**

According to Red Hat (2022), nearly every company, from new and small to large and well-established, can benefit from the services that managed IT services can offer. Tran (2022) writes that businesses use MSPs because they have the ability to replace the company's internal IT department via the niche service they offer. He furthermore notes that MSPs alleviate the burden of a business by offering professional IT services for a fraction of what one would spend on an internal IT department. He adds that the services MSP offers fit especially well for SMEs. They can offer a tailored set of only the most critically required services, thus cutting costs down even more for the customer businesses and helping them be more successful in a very cost-effective manner.

Red Hat (2022) holds a similar view, stating that instead of using resources to develop a costly internal IT infrastructure support network, a business can contact an MSP for help. They add that this will be a much more cost-effective solution, as well as with this strategy, the accumulated costs will also be much more predictable, which in turn helps with budgeting. They furthermore explain that the services that MSPs provide are especially fitting for businesses that do not have enough time, skill, or experience to manage their certain business functions internally. Moreover, a business that relies on the expertise that MSPs provide can more effectively focus on more important matters like innovation, instead of having to spend resources on more mundane yet complex tasks. They add that a company can have fewer concerns about disruptions since the MSP takes on the duty of ensuring constant service availability. They explain that unlike an in-house IT team, which typically handles a variety of tasks, an MSP dedicates its efforts to refining the provision of their particular service.

According to Tran (2022), MSPs can do even more for a business, as the best ones ensure that the customers' information technology capabilities grow holistically. He adds that they offer strategic advice, based on data insights, in order to better the customers' business.

However, he recommends using caution in the first stage of choosing an MSP and ensuring that your future partner will have a knowledgeable workforce in order to provide the best possible support for the business's IT infrastructure. He adds that the best MSPs have a variety of licenses and certifications that support their legitimacy.

According to Wattal (2020, p. 1), there is typically a predefined monetary charge agreed upon for the services offered by an MSP. Kumbakara (2008, p. 342) and Moore and Rosin (n.d.) elaborate that MSPs employ multiple methods for charging their services. They explain that the most common approaches include per-device and per-user fees, along with a popular all-inclusive pricing strategy. In this model, a flat fee is charged for all provided services, contrasting with the value-based pricing that was predominant in earlier times. Red Hat (2022) and Moore and Rosin (n.d.) describe that these services are typically billed through fixed flat fees, scheduled on a monthly basis, offering customers a predictable pricing scheme. Folkes (2020, pp. 67, 81, 85, 88) argues that many businesses lacking the resources to support an internal information technology infrastructure and previously utilizing support services billed hourly have transitioned to MSPs offering monthly flat fee services. He explains that this shift is considered more reliable and financially advantageous compared to hourly billed services.

Kumbakara (2008, p. 341) summarizes the benefits gained from managed as follows; services as enhanced support and greater system uptime, opportunity to utilize the newest technology with minimal investment and risk, stable and predictable IT spending, simplified integration of new business processes, providing flexibility and scalability, allows the internal IT of the business to concentrate on the primary business objectives, and lowered overall cost of ownership, alongside with the availability of a higher level of expertise.

It is clear that managed service providers represent a specific form of outsourcing, particularly beneficial for SMEs. One could even argue based on the earlier that, for SMEs, leveraging managed IT services stands out as one of the most effective outsourcing strategies. The key advantages include stable cost savings and access to specialized expertise for handling complex IT tasks. This furthermore enables SMEs to concentrate on their core business activities, which in turn leads to more stable and sustainable development. Therefore, MSPs are not just a form of outsourcing but an optimal solution that offers tangible benefits to SMEs.

## **2.7 Assessing market opportunities in the IT support sector**

In researching effective methods for evaluating new business ventures, via the means of market analysis, it's clear that terms like "market research" and "marketing analytics" amongst others are often used interchangeably, though they have similar but distinct meanings. Coursera (2023) acknowledges this prevalence, while Peek (2019) points out the potential for confusion. Peek further explains that "market analysis" is a broader concept than "market research," covering not just research activities but also in-depth insights into markets and competition. Additionally, "marketing analytics," as Coursera (2023) describes, focuses on the study of metrics like website engagement. Given this variety of terms, this thesis will use "market analysis" as it most effectively encompasses the concepts discussed in the following sections.

### **2.7.1 What is Market Analysis**

Market analysis, according to Aaker and McLoughlin (2010, pp. 60–61), serves two main purposes. It assesses market attractiveness and understands market dynamics. Northup (2023) emphasizes that it involves collecting detailed information about an industry, such as its size and value. Twin (2023) views it as evaluating a new service's viability through customer research. Murray (2019) suggests that market analysis is crucial for understanding opportunities in current markets and is an essential part of a business plan. Peek (2019) agrees, noting its universal importance for businesses to understand their potential. Northup (2023) adds that it's useful both for starting new ventures and analyzing past business performance. The goal, as Symaps.io (2022) states, is to minimize resource waste when establishing a new business. In essence, market analysis is a tool and a method for a business to determine the attractiveness of the market it is considering entering. Furthermore, this description is predominantly used in this thesis when discussing the concept.

### **2.7.2 The importance of market analysis for businesses**

Freedman (2023) observes that market analysis is valuable throughout a company's lifecycle, helping identify promising markets. D'Sa-Wilson (2021) emphasizes its importance in pinpointing strong market opportunities. Aaker and McLoughlin (2010, pp. 60–64) caution that merely entering an attractive market doesn't guarantee success. They argue that a company's unique qualities often determine its competitive edge. They also warn against

overlooking smaller markets, which can be unexpectedly profitable. In essence, these small markets could be compared to hidden gems.

Based on the earlier it can be said that this analysis is vital to avoid common pitfalls in business. According to Symaps.io (2022), understanding a market through thorough research can significantly affect a company's operations and strategy. Cote (2022) notes that such analysis provides crucial data for decision-making, especially in determining if a service aligns with target markets. Northup (2023) adds that it aids in identifying ideal customers and understanding industry conditions, which is essential to protect a company's strategic assets and minimize losses.

### **2.7.3 Qualities of a great market analysis**

Peek (2019) emphasizes the importance of understanding why a market analysis is conducted. Northup (2023) highlights that quality insights come from factual, relevant, and unbiased data. The more comprehensive this data is, the more robust the analysis. Twin (2023) suggests that the initial step is to define the study's objectives to address specific issues. Aaker and McLoughlin (2010, p. 21) agree, stressing that focused and purposeful analysis is crucial for success. They warn against the risk of a directionless analysis, which could lead to excessive detail without substance.

Aaker and McLoughlin (2010, p. 25) also point out the balance needed between broad and narrow scopes in analysis. Too narrow, and you might miss opportunities; too broad, and depth may suffer. From this thesis' writers' point of view striking a balance between the two, though challenging, is essential for effective analysis.

Peek (2019) recommends using specific concerns to guide the analysis's objectives. He notes that this prevents aimless data gathering. Aaker and McLoughlin (2010, p. 61) remind us that the analysis should be tailored to the context. As an example, this context could comprise of the company's needs. D'Sa-Wilson (2021) brings attention to the financial aspect of the analysis noting the importance of budgeting. In the case of this thesis, although a financial budget has not been explicitly set, there is a time budget in place, which will be gone through in more detail in the later sections of this thesis. Thus, D'Sa-Wilson (2021) advises clearly defining the analysis's goals and planning accordingly.



#### **2.7.4 Different forms of market analysis**

Twin (2023) explains that there are various ways to conduct market analysis, and D'Sa-Wilson (2021) adds that companies don't need to use all available methods. Cote (2022) suggests using specific questions to form hypotheses that guide the analysis. These questions help determine the type of research to be conducted. Twin (2023) categorizes the research into two types: primary and secondary, conducted in parallel. Cote (2022) continues saying that data for the analysis in primary research is collected directly from the market. Twin (2023) adds that secondary data is sourced from external sources, such as government reports and trade association studies.

Peek (2019) differentiates between internal and external market analysis. Aaker and McLoughlin (2010, pp. 11–12) expand on this, noting that internal analysis focuses on an organization's internal strategic factors, such as sales and brand image. External analysis, on the other hand, examines factors like competition and market conditions. Freedman (2023) highlights the key elements of market analysis, including industry size, growth rate, and market share projections. He adds that an important part of the analysis is forecasting market potential, including future target markets and estimated profits. Abou-Moghli and Al-Abdallah (2012, p. 110) emphasize the significance of location and demand analysis in establishing a successful business with sustainable growth.

#### **2.7.5 The completion process of full-fledged market analysis**

Freedman (2023) outlines the steps for conducting a market analysis. He states that after the purpose is clear, it starts with evaluating the industry, focusing on aspects like size and growth potential. Next is understanding the customer base, including their characteristics and factors influencing their purchasing decisions. Finally, analyzing the competition is crucial, beginning with identifying major competitors. Peek (2019) concurs, emphasizing the focus on customers and competitors. He states that understanding customer numbers and spending habits, as well as competitor profiles, is key. The market analysis completion process steps have been illustrated in Table 2 below.

Table 2. Interpretation of the steps of the market analysis process (Freedman, 2023; Northup, 2023; Peek, 2019).

1. Before starting, clarify the purpose of the analysis.
2. Evaluate the general state of the industry.
3. Understand the customer base: define physical market boundaries, customer segmentation, analyze customer needs.
4. Analyze the competition: identify competitors, understand the intensity of competition.
5. Review the findings.

This section primarily explains customer base analysis through segmentation. Aaker and McLoughlin (2010, p. 25) and Murray (2019) both stress the importance of analyzing the customer base. This includes studying who is likely to purchase your services. Northup (2023) mentions that market segmentation helps in this identification, categorizing customers based on various traits, including location and occupation.

Segmentation, as explained by Aaker and McLoughlin (2010, pp. 26–27), involves grouping customers based on characteristics like their response to competitive offerings. However, they caution that segmentation can be complex due to the numerous ways to divide a market. They recommend using a manageable number of variables for segmentation. Two segmentation strategies are highlighted by Aaker and McLoughlin (pp. 30–31). The focusing strategy targets a single segment, while a broader approach covers multiple segments but requires more resources.

Murray (2019) advises considering the geographical extent of the market based on factors like the nature of your service and the competition. Aaker and McLoughlin (2010, pp. 24–25) and Cote (2022) agree on the importance of defining market boundaries and understanding target demographics for effective analysis. Using the aforementioned strategies to segment and analyze markets will guarantee a holistic view of the target market in a specific area, which is crucial for determining the possible size of your company's initial markets.

Following the earlier suggested structure by Freedman (2023) the next step to focus on after the analysis of the customer base is the analysis of the competition. According to also Aaker and McLoughlin (2010, p. 42), the analysis of the competition is the next phase of the market analysis process. Abou-Moghli and Al-Abdallah (2012, pp. 110–111) emphasize the importance of this analysis, aiming to understand competitors' strengths for a viable business strategy. Aaker and McLoughlin (2010, p. 42) suggest beginning by identifying both current and potential competitors. They outline two approaches to distinguish current competition:

one from the customer's perspective and the other by grouping competitors into strategic categories based on their competitive strategies.

Aaker and McLoughlin (2010, p. 46) explain that grouping competitors strategically can simplify the analysis by categorizing a large number of competitors into manageable groups with similar strategies. They continue saying that this method is useful given the sometimes-overwhelming number of competitors in a market. Northup (2023) recommends assessing competitors by their strengths and weaknesses, researching attributes like location and services, and then compiling this information.

Aaker and McLoughlin (2010, p. 69) state that the intensity of competition in a market depends on several factors, including the number of competitors. They note that a market with more competition tends to be more intense. Aaker and McLoughlin (pp. 43–44) add that although identifying primary competitors is usually straightforward, they advise also considering indirect competition, which can provide strategic insights as customer priorities evolve. The U.S. Small Business Administration (2023) adds that players from various industries may target the same customers in your market.

Regarding substitutes, Aaker and McLoughlin (2010, p. 69) observe that they typically compete less intensely than primary competitors. Nonetheless Aaker and McLoughlin (pp. 43–44) note that understanding indirect competition can offer strategic benefits as customer preferences change. They suggest categorizing competitors by their relevance. U.S. Small Business Administration (2023) recommends assessing the competitive landscape through variables like market share, strengths, and weaknesses.

Aaker and McLoughlin (2010, p. 48) mention that insights into competitors' image and positioning can be inferred from their products, advertising, and websites. Aaker and McLoughlin (p. 58) note that websites are often rich information sources about competitors. They note that additional information can be obtained from online financial reports and other resources. Northup (2023) concludes by stating that after completing market analysis, a review of the gathered information should lead to actionable strategies based on the valuable insights obtained.

It can be said from the covered material that market analysis is crucial in any sector of business, including the IT support sector, for informed decision-making, uncovering market

opportunities, gaining a competitive advantage, and understanding customer needs. While invaluable, it does present challenges such as being resource-intensive and potentially resulting in data overload, without overlooking potential biases. Despite these hurdles, its strategic importance outweighs the drawbacks, making it recommendable for anyone, particularly valuable for those establishing new businesses. A balanced approach is key, emphasizing agility, adaptability, and the critical evaluation of data. In essence, while market analysis has its limitations, its role in driving informed, strategic business decisions is indisputable, making it an essential tool for business growth and innovation in the ever-evolving IT landscape.

## **2.8 Overview of IT support industry in general and in Finland**

In the year 2021, revenues gained from IT accumulated to nearly five trillion U.S. dollars (Saggau, 2022, p. 6). Out of this sum, more than 20 percent came from IT services spending. According to Ek (2020, pp. 12, 32, 55), in Finland, the software sector, which is a part of the broader industry sector of business service, has been growing strongly in recent years and is expected to continue on this path despite the downturn in the global economy. She adds that its growth has been much stronger than that of other service sectors, and this is most likely due to digitalization and the development of technology alongside the service outsourcing happening in other industries. Tuomi and Aittoniemi (2022, p. 6) support this view, stating that both the ICT and software sectors are especially well-growing industries.

It is projected that spending on information technology services will approach nearly \$ 1.6 trillion U.S. globally in 2024 (Statista, 2023b, p. 3). This represents a growth of nearly 200 billion U.S. dollars compared to the previous year's prediction of \$ 1.42 trillion U.S., which itself marked an increase of almost 100 billion from 2022. Based on these numbers, it can be stated that such a growth trend can be classified as extremely promising for the future of the industry. Furthermore, the IT services industry has been forecasted to grow by \$ 150 billion U.S. globally from the year 2023 to 2024 (Statista, 2023c, p. 5).

According to Nguyen (2023, pp. 6–11), the forces of digital transformation and increasing utilization of digital technologies have also contributed to the positive and steady growth of the IT outsourcing industry. She further adds that this industry is likely to undergo a phase of significant growth in the coming years. She explains that the market is expected to grow to

nearly eight hundred billion U.S. dollars by the year 2028, exhibiting an annual growth rate of 11.07 percent globally and 10.8 percent in Europe.

The IT outsourcing sector within the Finnish IT services market is projected to experience a steady rise in revenue from 2024 to 2028, with an overall increase of \$ 1.8 billion U.S., marking nearly 50 percent growth (Statista, 2023a). Furthermore, following nine years of consistent growth, it is anticipated that the revenue will hit a record high of \$ 5.4 billion U.S. by 2028. This trend can be observed in Figure 1 below.

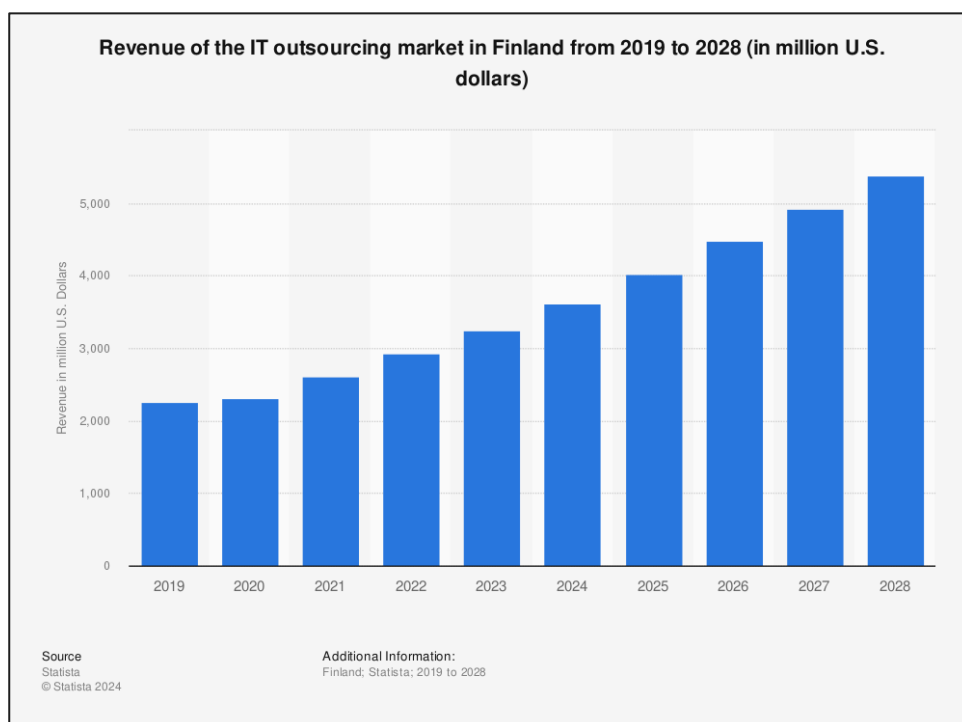


Figure 1. Revenue of the IT outsourcing market in Finland from 2019 to 2028 (in million U.S. dollars) (Statista, 2023a).

This growth trend can only be described as positive. Furthermore, the earlier years in the revenue prediction chart in Figure 1 seem to correlate with the recorded information about the cumulative growth of turnover in the Finnish information technology field, as depicted in Figure 2 below. This correlation grounds the prediction in reality and brings even more validity to it.

	Turnover	
	Original index series	
	J Information and communication	62 Computer programming, consultancy and related activities
2017	106.9	116.1
2018	111.0	129.2
2019	117.1	141.7
2020	120.0	148.9
2021	128.4	163.8
2022	141.5	186.2

Figure 2. Turnover of service industries (2015=100) by Year, Variable, Information and Industry (Statistics Finland, 2024a).

A similar forecasted growth trend is depicted by the global managed services market, as indicated in Figure 3 below, alongside other IT outsourcing revenue predictions depicted in Figure 4. Other IT outsourcing encompasses the collective income from varieties of IT outsourcing services not explicitly covered in distinct IT Outsourcing segments, like infrastructure outsourcing, network outsourcing, and managed services (Statista Market Insights, 2023).

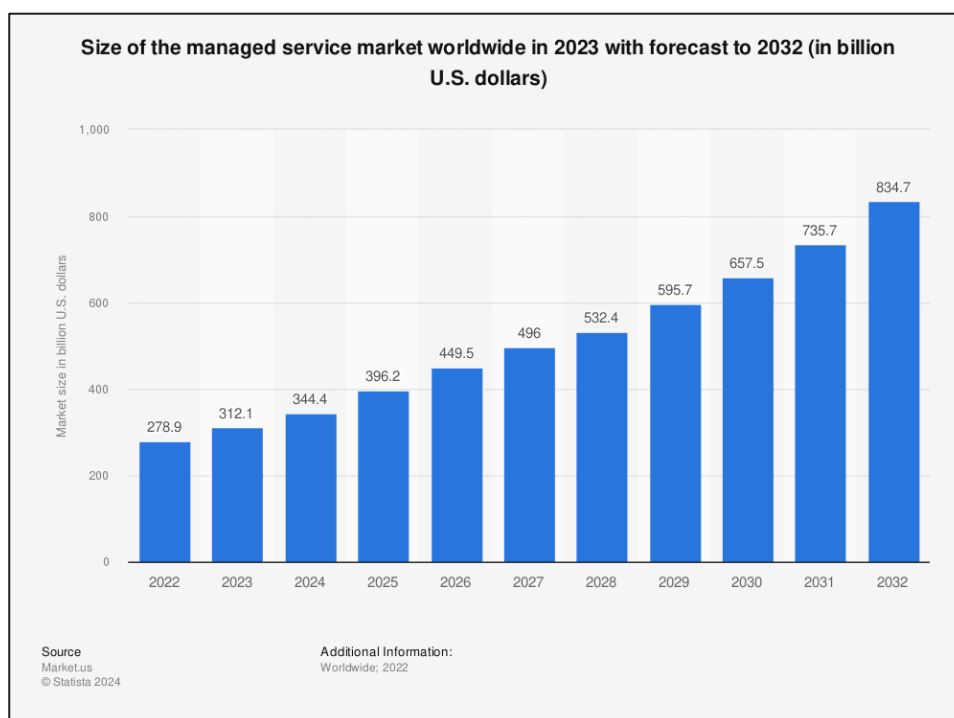


Figure 3. Forecast size of the managed services market worldwide from 2022 to 2032 (in billion U.S. dollars) (Market.us., 2023).

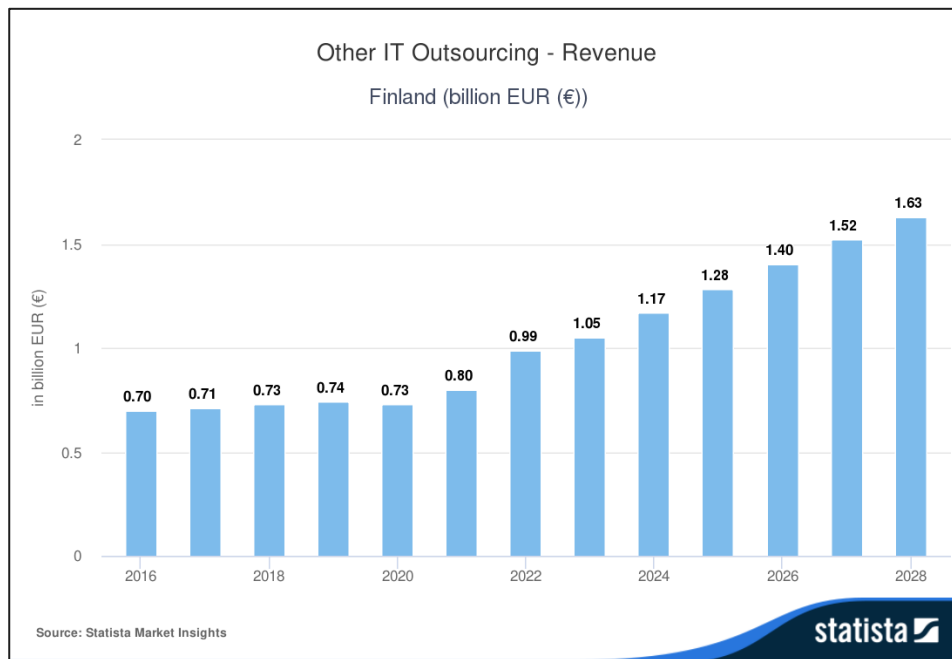


Figure 4. Other IT Outsourcing - Finland. (Statista Market Insights, n.d.).

What becomes instantly clear from these growth predictions across different regions and sub-sectors of the same industry is that it is indeed predicted to grow extremely strongly and in a predictable manner in the near future. One could even argue that this seems like just a prelude to the quadratic growth that could be seen in the longer term.

During 2023, the budget distribution in businesses for managed services in Europe and North America was allocated as follows: Security services, 11 %; hardware support & maintenance, 10 %; IT help desk, 9 % (Statista, 2023c, p. 19). It is observable from the information that security services have been slightly more favored by businesses compared to the others. This observation is confirmed by Statista (p. 33), as they note in their report that from the year 2020 to 2023, there has been a notable shift in the IT priorities of businesses, with cybersecurity emerging as the most critical initiative, climbing from being a priority for 49 % to 76 %. It becomes clear from the same report that businesses' migration to utilizing cloud computing has also been on the rise, with its prioritization rising from 40 % to 75 %. Lastly, digital transformation initiatives consistently garnered attention, indicating a steady focus on leveraging digital technologies to enhance business processes, evidenced by an increase from 54 % to 74 %, as indicated by the report. It could be said that these trends showcase the fact that businesses are somewhat advancing towards a more digital future, as indicated by the increase in the prioritization of digital transformation. However, the trend of digital security becoming the highest priority also showcases the reality that more technologies equal more threats, hence the need to prioritize protecting oneself against them.

On the same note it is predicted that small and medium-sized enterprises will allocate nearly thirty billion U.S. dollars globally to managed security services in 2025 (Statista, 2023b, p. 29). This is more than what is being forecasted for any other type of security services taking over even forecasted spending on networks security. Furthermore, the size of the information security technology market is forecasted to grow from \$ 125.2 billion U.S. in the year 2020 to \$ 174.7 billion U.S. in the year 2024 (Statista, p. 14). Reviewing this alongside with the earlier information, both notions reflect well the rising importance of digital security amongst businesses.

According to Ek (2020, pp. 18, 55), the growth of the software sector in Finland has been and will continue to be supported by the digitalization of every field, alongside the rapid advancement of technology. He adds that the sector plays a pivotal role in digital transformation, developing tools that enable the digitization of processes within various other industries. Shifting the focus towards the location of the companies in the industry, he states that the majority are situated in the region of Uusimaa. Furthermore, he explains that the reason for the concentration of companies in this industry segment in growth centers is due to the close proximity to client companies. He adds that cities with universities also provide a richer pool of skilled labor, which further contributes to this concentration. From this, it can be assumed that the coverage of services provided by the companies in the industry is presumably much sparser in areas outside of these centers. This notion is indeed confirmed by Lehtikoinen and Töyrylä (2013), who state that as we move from the larger cities to smaller towns and municipalities, the coverage of such services can be extremely thin, and there are not many options for businesses to choose from. They further add that the outsourcing markets in Finland are very underdeveloped in these areas.

According to Stubin (2022) a persistent scarcity of qualified IT experts is prevalent everywhere. Ek (2020, pp. 24, 50) confirms that the Finnish IT sector is facing a notable shortfall in its workforce, adding that it has been a known issue for several years. He Furthermore adds that growth centers are the primary location into which open positions in the industry are created and that in the industry the skills of the professionals tend to become outdated in a rapid manner as the technology keeps advancing in such a rapid phase. Same views are being echoed by Nieminen and Tolonen (2023, p. 140) as they write that in Finland, Southern Ostrobothnia seems to face a persistent demand for skilled workers in the technology sector.



According to Ek (2020, p. 55), a considerable portion of the business within the IT sector takes place in Business-to-Business (B2B) markets. Saggau (2022, pp. 5, 12) shares this view as he points out that a considerable amount of IT expenditure is dedicated to business-to-business transactions, especially in the IT services sector, which is solely concentrated on B2B dealings. He also observes that the IT services sector stands out as the strongest segment of B2B IT in all the markets examined, with predictions indicating its continued significance in various sectors. He argues that this significance is credited to its capacity to enable and hasten digital transformation, highlighting its long-term importance.

Saggau (2022, p. 11) notes that in the countries of the UK, Germany, France, Italy, Spain, and the USA, B2B IT service revenues have been the largest IT spending category in which businesses have invested. This notion could possibly be generalized to Finland, as the majority of the earlier listed countries are located in Europe. From the report, it can also be observed that across these countries, the retail and manufacturing sectors are consistently the largest spenders on IT services, with significant growth expected (Saggau, 2022, pp. 13–36). Further inspection reveals that, from the listed countries, the industry sectors of professional services, alongside real estate and manufacturing, seem to invest the most towards IT services, with the construction and mining industries falling into the category of lowest spenders towards the same IT services.

The bottom line about the general state of the information technology services industry development can be succinctly summarized in one word: positive. The industry appears to be headed towards a very bright future, fueled by the ever-growing digitalization of society alongside rapidly complexifying technology. This prompts businesses to start seeking partners to whom they can transfer the responsibility of system upkeep, as it seems that soon, no one will be able to do without them. This, in turn, suggests that there is indeed a spot for a new entering business to flourish, as long as it can find itself a fruitful location where to ground itself and start its operations.

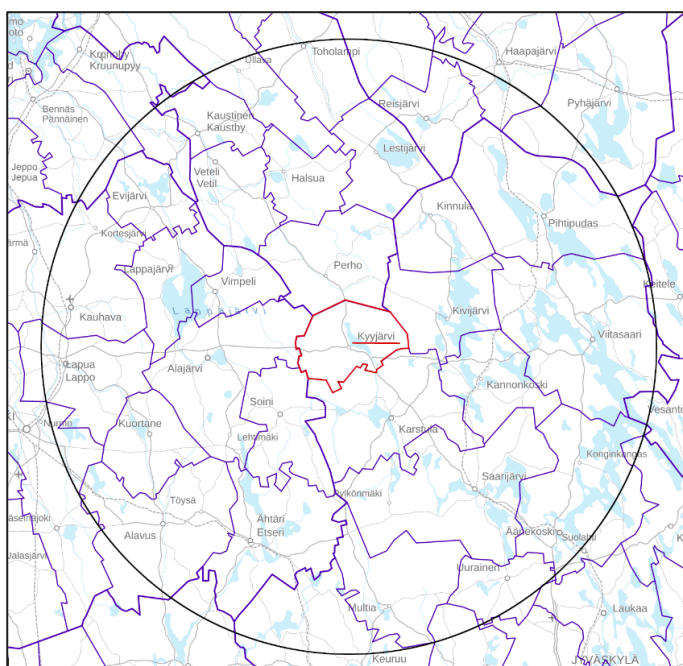
Now that a strong foundation of background information has been established, the thesis is prepared to delve into the core by addressing the central research questions. However, a critical step before proceeding involves analyzing the specific market area where the planned commissioning company could be established. As outlined in the preceding sections, this market analysis process is crucial not only for aligning the research with real-world applications but also for serving as a bridge between the theoretical insights from the literature

review and the empirical exploration that follows. By integrating these insights with a comprehensive external market analysis, the thesis aims to develop a thorough understanding of the proposed location.

### 3 ANALYSIS OF THE POTENTIAL MARKET AREA

As has already been established in the earlier chapter on market opportunity assessment, completing a market analysis for a company is a crucial strategic step towards sustainable business. Following the general assessment of the industry, performed as part of the review of the existing literature, in the earlier chapter, this chapter will examine the external local markets more thoroughly by the means of secondary market research, reviewing the gatherable insights that have been found about it and analyzing them.

The planned company, operating on the field of information technology support services, has been suggested to be located at the intersection of three regions in Finland: Southern Ostrobothnia, Central Ostrobothnia, and Central Finland, which would in turn also act as the physical and primary market area. Furthermore, as recommended earlier, in this analysis the market area has been delimited to be 140 kilometers in diameter, as this can be seen to be the effective range where the services could be offered efficiently. The Finnish town of Kyyjärvi, which is located at the heart of the intersection of these three regions highlighted with red in the Picture 1 below, has been used as the anchor point from which the market area, also observable as a black circle in the Picture 1, has been determined. Municipalities located within the circle are considered to be a part of the market area. Those on the border, where the majority of their area falls inside the circle, are also included. However, municipalities with only a small portion inside are excluded and not considered part of the area.



Picture 1. Graphical presentation of the market area (Turpeinen, 2024, CC BY-NC-ND 4.0).

Now, as all the necessary context has been laid out about the potential market area, it becomes possible to move to the latter phases of the external market analysis, in which the potential customer base alongside its characteristics, will be reviewed.

### **3.1 Customer segment analysis**

Following the suggested structure for completing a market analysis in the earlier chapter, as the suggested geographical market area has now been successfully determined, the potential customer base located within it can now be analyzed and segmented. To streamline the segmentation process, conserve resources, and to keep the size of the scope of the analysis manageable, a focus strategy has been adopted to avoid over-complicating the process. Therefore, this analysis will focus solely on the segment of business size, and more specifically, on SMEs. The SME size description used in this analysis has been adopted from a description given by the European Commission.

According to European Commission (2020, pp. 3–11), enterprises classified as micro, small, and medium-sized (SMEs) are those with a workforce of fewer than 250 individuals, and either an annual turnover not exceeding € 50 million or a balance sheet total not over € 43 million. Furthermore, the classification into micro, small, or medium-sized enterprises is based on specific benchmarks: micro-enterprises are those with less than 10 employees and either an annual turnover or a balance sheet total not greater than € 2 million; small enterprises have under 50 employees and a turnover or balance sheet less than €10 million; and medium-sized enterprises employ fewer than 250 people, with a turnover and balance sheet figures equaling to same numbers mentioned at the start of this passage. In the report of the commission, it is stated that these SMEs are crucial to the economic fabric of Europe, making up 90 % of all enterprises and being responsible for creating two-thirds of the employment opportunities, thus playing a central role in EU policies.

When observing the data showcasing the sizes and number of businesses in the municipalities included as a part of the market area, as presented in Appendix 1, even a quick glance allows it to be concluded that the great majority of businesses located in this area are micro-enterprises. Alongside these, there are small businesses, although in fewer numbers. Furthermore, there is only a handful of businesses which reach the upper echelon of the SME description. These findings indicate that the region is largely dominated by SMEs and

furthermore micro and small businesses. A notion supported by the earlier statements from European Commission.

As has been comprehensively established in earlier chapters, and also described by Murphy (2010, p. 5), SMEs often face a lack of resources in various areas, such as finances, IT expertise, planning capabilities, and time. Furthermore, as discussed earlier, to keep their businesses running and relevant, they are often confronted with the necessity to operate the various types of information technologies they have adopted. Alongside this, there is a pressing need to adopt more of these technologies to keep up with the digitalization process of society.

A conclusion that could be drawn from the combination of these findings is that, due to the large number of small businesses in the area, there is most likely a significant number of businesses that, in one way or another, may struggle with the technologies they own and are forced to adopt. However, as has been confirmed earlier, with adequate help, they can overcome the struggles that they might face. But the pressing question is whether there is enough help and the correct kind of help available in the market area. This information can be explored by conducting an analysis on the offered services in conjunction with competitor analysis, which is one of the last parts of the secondary market analysis process suggested earlier.

### **3.2 Assessing the offered IT support services and competition in the market area**

As has already been pointed out, the importance of thoroughly assessing the potential competition for any business—whether it is just a plan sketched on the corner of a napkin, a new enterprise, or a well-established one—cannot be overstated. The vitality of a business is directly affected by its competitive environment. This section aims to assess the competition from the customer's perspective, enabling a comprehensive understanding of all of the area's potential competitors.

To clarify the analysis of potential competition and coverage of Information Technology support services in the area, a detailed map has been created. This map, shown in Picture 2, features clear indicators of various recognized aspects within the market area. The information on the potentially competing businesses, which forms the basis of this map, has been sourced from Finder.fi. According to Fonecta (2023), Finder.fi is a public search platform that

provides details about Finnish companies, including their location, size, turnover, and other relevant contact information.

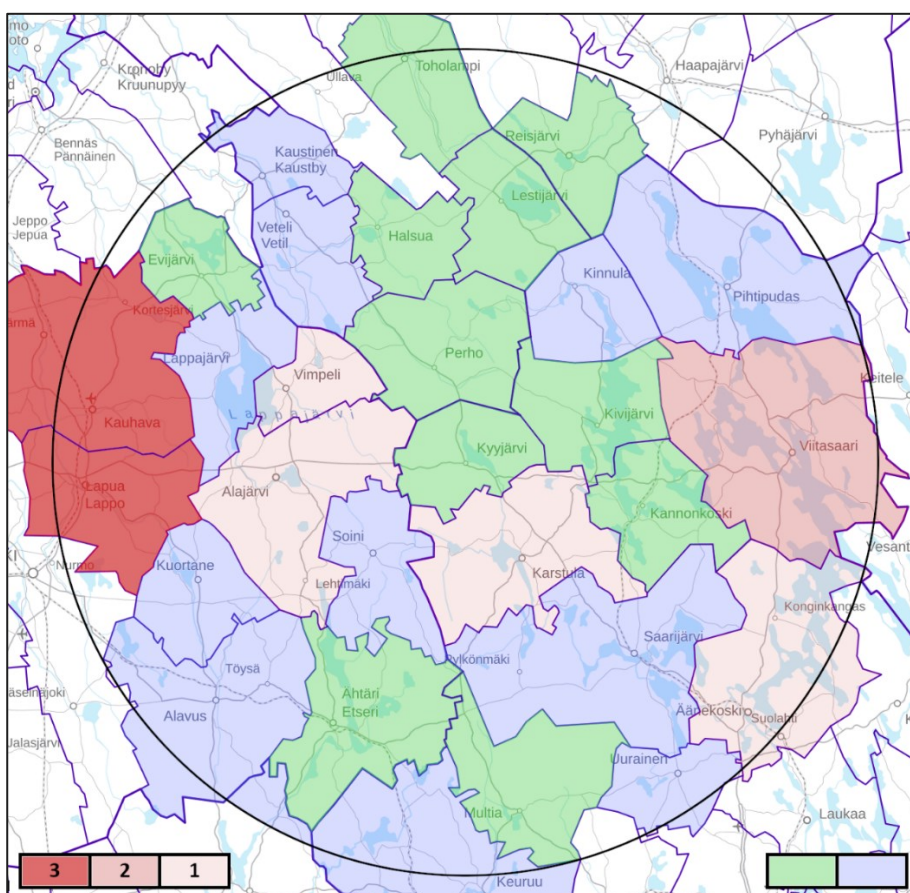
Identifying businesses within the specific industry segment of IT support services required a unique approach. A combination of search terms was used, linking the word “IT” with the name of the municipality being investigated, separated by a plus sign. This method effectively filtered the search results, allowing for the compilation of a list of businesses categorized under IT support services. This manual process was repeated for each municipality within the market area. Businesses identified through the search were reviewed first by analyzing the information available on Finder.fi. Subsequently, direct links to the businesses' own websites were followed, where a thorough analysis of the services offered was conducted to gauge the level of competition each business might present.

This meticulous process resulted in a list of municipalities harboring possible competitors, which are highlighted in different hues of red on the map in Picture 2. The intensity of the competition is indicated by the hue, with three levels of severity. Municipalities highlighted in the lightest red are considered to have only mild potential for competition, mainly acting as remote substitutes as discussed in earlier chapters. Although not deemed significant, this competition should not be overlooked as it could evolve. Municipalities with a slightly darker shade of red, classified as level 2, contain businesses that pose a high level of potential direct competition, albeit with certain limitations such as size or location. These businesses, if expanded, could become formidable competitors. The darkest red shade on the map signifies businesses that could in theory offer the highest level of direct competition. These businesses are large and would operate within the same field. Notably, these competitors are situated at the market area's edges. Interestingly, two businesses in adjacent municipalities are thriving, suggesting ample market space for multiple competitors to coexist comfortably, even in close proximity. This is a positive indicator and bodes well for new entrants into the IT support service industry.

Analyzing the map in Picture 2 further reveals that municipalities colored blue host businesses linked to information technology but do not offer IT support services. These areas essentially lack local IT support for infrastructures that businesses have, unless services are contracted from outside the municipality, which is of course a very possible scenario. Green-highlighted municipalities lack any business even remotely related to information technology,

leaving local businesses without support for their IT needs, an issue that is especially troublesome when the help is concretely needed—a situation bound to arise at some point.

In conclusion, from the customer's perspective, the options for IT support are limited, particularly towards the market area's center or northern parts, as depicted in Picture 2. This observation aligns with literature review findings that suggest outsourcing service coverage is thin in regions distant from growth centers. Given the substantial number of small businesses in the area, it is likely there are too many small businesses facing technological issues with insufficient available support, leading to situations where these businesses must fend for themselves against faced IT challenges.



Picture 2. Detailed presentation of the market area (Turpeinen, 2024, CC BY-NC-ND 4.0).

The notion of the fact that there may not be enough help to go around is supported also by the information discussed earlier in the review of the literature. Moreover Suvinen et al. (2023, pp. 27, 54), also support the notion as they state that there is a scarcity of IT experts in Southern Ostrobothnia. They add that the shares of jobs in the information sector, generally, are remarkably small in all South Ostrobothnia subregions, especially when compared to the national average. They note that this is a concerning feature, as the workforce of this

sector is a central knowledge resource both for the utilization of digitalization and the management of digital risks. They add that the number of these experts should be significantly increased to meet the demand for expertise related to digitalization.

### **3.3 Review of the external analysis findings**

Based on the conducted analysis, there seems to be a possible opportunity for anyone establishing a new business in the market area, particularly in offering IT support services. Furthermore, based on the collected data, two hypotheses can be drawn. Firstly, the area's large number of SMEs indicates a highly potential market for IT support services. As has been covered earlier, these businesses often struggle with managing their IT infrastructure, which in turn would indicate a clear need for specialized support services. This situation presents a ripe opportunity for new IT support businesses, as the demand for such services could potentially be high. Secondly, the current market analysis reveals a possible lack of companies providing these IT support services, suggesting that the market is not yet oversaturated. Furthermore, this gap in the market could mean that there is more demand for such services than there are providers, potentially leaving many businesses in search of a reliable IT support provider, assuming they recognize this need.

If these hypotheses turn out to be accurate, it would be highly beneficial for the proposed commissioning business, offering a wealth of potential clients right from the beginning and thus aiding in the business's growth, if such service were to be established. Furthermore, by addressing the IT support needs of local businesses, the venture would not only assist in solving immediate technological challenges that these businesses face, but also contribute to the broader digital transformation of the region, that has been deemed to be lacking.

However, it's crucial to approach these findings with a degree of caution. As previously covered information has advised, basing decisions solely on optimistic predictions is not advisable. A solid foundation of factual evidence is essential to support these optimistic views. Thus, while secondary market research provides valuable insights, it is not sufficient on its own. Conducting primary market research is essential to gain a full understanding of the market's realities, involving direct data collection from potential customers within the market area. This approach ensures a more accurate and comprehensive assessment of the market's potential opportunities and challenges.



## 4 RESEARCH METHODS AND METHODOLOGY

According to Greener (2015, pp. 17–19), researchers aim to find evidence that either supports or refutes a hypothesis, a process commonly identified as deductive research. She describes the deductive approach as starting with theoretical examination, generating hypotheses related to the research focus from the theory, and then moving forward to test the theory itself. The purpose of this chapter in the thesis is twofold. Its main purpose is to introduce and explain the research methods used in the thesis, which are employed solely for testing out the proposed theory and thus bringing answers to the main research question of the thesis. Before delving further into the methods, it is appropriate to once more verbalize the main idea behind the research question, which is to find out the market potential for a possibly founded IT support company. The secondary purpose is to provide the reader with a solid understanding necessary to better interpret the gained results and to add more weight to these results.

Greener (2015, p. 12) reminds us that when it comes to academic research, the research must have a purpose that is clear, and objective, with information gathered in a fair and systematic manner. She adds that it is also crucial to gather data in an equitable and organized manner. She emphasizes that consideration should be given to whom we are querying for information and their comprehension of our questions. Lastly, she adds that should it be impossible to question every relevant individual for the study, then there must be a solid rationale for limiting our inquiries to a specific segment of the population. Keeping these notions in mind, this thesis has tried to follow the given suggestions as closely as possible in order to produce high-quality research, which results can then be translated into a possibly actionable insights in real-world scenarios.

### 4.1 Research design and approach

For completing research, there are multiple methods, such as quantitative and qualitative, to choose from, which can be used in order to find answers to the proposed research questions. According to Twin (2023), qualitative research provides understanding into customer emotions and thoughts, while quantitative research employs numerical data and statistics. Greener (2015, p. 71) shares a similar view as she explains that quantitative methods involve the collection and analysis of numerical data. She contrasts this with qualitative methods, stating that they focus on subjective descriptions and interpretations, providing depth and context without specific metrics. She adds that statistical methods are used to process and

analyze the numerical data collected through quantitative methods, helping to identify trends, patterns, and inform decision-making in a business context.

According to Aaker and McLoughlin (2010, p. 34), qualitative research serves as an effective method for grasping the underlying motivations of customers. They continue by explaining that it employs techniques such as focus group discussions, detailed interviews, and case studies of customers. They add that the goal is to uncover genuine motivations that structured questionnaires may fail to reveal. Creswell (2009) notes that quantitative research, on the other hand, can be employed to formulate concepts and theories that are objective. Bhat (n.d.) adds by asserting that quantitative methods excel in gathering and analyzing extensive numerical data, providing clear and precise outcomes. Greener (2015, pp. 23, 44) notes that accurate and valid research results can be achieved especially well by the utilization of both methods in conjunction. She, in fact, highlights the fact that it is a growingly popular practice to mix these two methods in data collection as they have the potential to give a more thorough picture of the topic you are researching.

For the primary research of this specific study, a quantitative method was chosen. The major factors influencing this decision to favor only one method, instead of employing a mix of quantitative and qualitative methods, are primarily due to the considerable size of the sample. Despite the advantages that a mixed methods approach can offer to the research, as illustrated above, implementing such methods in this thesis study would have proven inefficient due to the nature of their execution. Whereas using purely quantitative methods and collecting numerical data, which can be distributed extremely efficiently in the form of a questionnaire, for example, and subsequently analyzed using software such as Excel, incorporating qualitative processes to gain a deeper understanding of the perceptions of companies by conducting interviews with entrepreneurs themselves would have required an incredibly large amount of time. Given the severe time constraints typical of a thesis, this would have been an impossible feat. Thus, partly forced by the large sample size, this thesis opted to use purely quantitative methods despite the potential drawbacks of not being able to capture every sentiment expressed by the SMEs in the sample regarding their views on the topics presented to them.

## 4.2 Sampling method

Tuovila (2024) discusses the concept of sampling, explaining that it enables researchers to study a broad population group through the examination of a smaller segment. He adds that the choice of sampling method varies based on the analytical approach required and can range from simple random sampling to systematic sampling to anything in between. Greener (2015, pp. 61–62) brings further ideas to the table about sampling, writing that in order for the findings of the research to be applicable to a larger population, the sample has to be representative of this population. She opens up the concepts of “sample” and “population” as she states that “population” refers to the complete set of individuals or items from which a sample is drawn, and “sample”, in turn, denotes the subset of the population that is selected for analysis.

During the research process a pressing question when trying to determine the size of the sample for the study was how large the sample should be to achieve a satisfying amount of feedback. For this, notions from Greener (2015, pp. 63–64) were consulted. However, Greener states that there is no single answer to describe the sufficient number of participants in a sample. However, she emphasizes that the significance of a sample's absolute size surpasses that of its size relative to the overall population. She explains that as the sample size increases, it is more probable that the sample accurately reflects the population, and the potential for sampling error diminishes, attributing this to the principle known as the law of large numbers.

According to Greener (2015, p. 65), Bryman and Bell (2011) suggest that the principle of diminishing returns applies when a sample size reaches approximately 1 000. They state that this means that while the accuracy of data improves up to a sample size of 1 000, it starts to decline beyond this point, rendering further data collection through interviews or surveys less beneficial. They end by stating that if a smaller sample size is selected, it is imperative to justify this choice and consider the potential decrease in the data's generalizability and representativeness.

The sampling method in this study is exceptional as it differs significantly from well-known methods, such as random sampling, which have been proven time and again to produce very comprehensive samples for studies. However, the method used in this particular thesis could be argued to be extremely effective in producing an adequate sample for the study's needs,

although not the most efficient, as the final sample consisting of 1 500 participants was gathered purely by hand. Despite suggestions that collecting a sample larger than 1 000 participants may produce diminishing returns, the underlying thought for collecting a slightly larger sample was done to account for and counter the potential non-responders.

The rationale behind choosing an unorthodox method for sample selection once again partially lends itself to the unique characteristics of the thesis topic's approach towards establishing the viability of an IT support company through market research, in an area that is somewhat sparsely populated. The considerable sample size suggestions discussed earlier can also be counted as a factor, alongside with the suggestion of the need to obtain a sample that is representative of the larger population in the area. Performing the type of market research presented in this thesis has shown that there is no one perfect source from which a population for this particular study could have been simply obtained. Instead, a significant amount of creativity had to be applied in order to achieve this outcome of getting a defined population out of the proposed market area, from which it was then possible to assemble the adequately sized and representative sample.

After an extensive search for public databases from which the number of businesses located in the proposed market area, alongside other information such as size, turnover, and employee amounts, could be assessed to determine the rough population and subsequently the sample, only one database was found fitting for this purpose. Due to its ability to showcase the majority of this information in an easily accessible manner, this database, Finder.fi, was selected. It has also been discussed earlier, as it was pivotal in the assessment of potential competition in the suggested market area. This database was seen as the most efficient tool for gauging the population of the suggested market area, as it presented the amounts of businesses a municipality currently had, from which all the municipalities could be browsed through to gain a number of the market area's population. With the proper database located for the study's needs, combined with data filtering process, discussed more in depth in a later chapter, the sample was formed.

### **4.3 Data collection methods**

Greener (2015, pp. 83, 88) notes that the foundation of any solid research study is formed by carefully crafted questions. She explains further that when starting to design a questionnaire

one has to have a clear image of its purpose. For the effective collection of primary research data, this particular study employed the technique of utilizing a questionnaire in online format. This decision is supported by Greener (2015, pp. 90–91), who suggests that online questionnaires can enhance the efficiency of survey research. However, she notes that these online tools come with certain constraints concerning the variety and design of the questionnaire. Nevertheless, she writes that ultimately, the decision to employ web-based surveys or some other form of survey hinges on the specific demographic being studied and the particular circumstances of the research.

To achieve further efficiency and objectivity, this questionnaire employed the questions in a close-ended format. According to Holm (2021), a close-ended question requires the respondent to select from a finite set of predefined answers. The notion of achievable efficiency is also confirmed by Evans (2022), who states that the use of close-ended questions enables the rapid gathering of data. The questionnaire employed multiple different forms of close-ended question formats to gauge multiple aspects deemed important for gaining confirmation for the earlier proposed hypotheses about the market area. A list of these used question types is shown in Table 3 below.

Table 3. Question types used in the study questionnaire (Greener, 2015, pp. 85–86).

<b>List:</b> This question type allows respondents to select one or more options from a predefined list of answers.
<b>Category:</b> Requires respondents to select only one answer from a list of predefined options.
<b>Rating:</b> Asks respondents to score or assign a value to a statement or item.
<b>Likert rating scale:</b> This question format captures the strength of a respondent's agreement or disagreement with a statement.
<b>Dichotomous choice:</b> This simple question type presents respondents with two opposing options, such as yes/no, requiring them to select one.

The questions belonging to these above-mentioned types were meticulously designed to ensure that participants could comprehend them with the highest degree of clarity. This approach of concentrating on formulating clear questions was adopted due to the recommendations of Greener (2015, pp. 83–89), who emphasizes the importance of such a strategy, writing that avoiding pitfalls in questionnaire design can be achieved by examining questions for ambiguous terms, as they can be interpreted differently by respondents, potentially leading to answers that do not align with the intended meaning. She explains that additionally, it is crucial to verify the spelling and grammar of the questionnaire to ensure the precise conveyance

of meaning. She also reminds us that it is important to factor in the length of the survey in order to avoid respondents experiencing so-called "survey fatigue," which can result in the participant either not completing the survey or hurriedly answering the questions without much thought. This factor was also taken into consideration when trying to delimit the length of the questionnaire to include only the most essential questions needed in order to achieve actionable insights.

#### **4.4 Data analysis methods**

Greener (2015, p. 12) emphasizes the importance of conducting our data analysis meticulously and systematically. She adds that the thoroughness of our analysis significantly impacts the validity of our research findings. Following these suggestions, after the answering period of two weeks was surpassed and the online questionnaire was closed, it became possible to start the data analysis. The main tool utilized to handle the data, in order to obtain as much information and insights from it as possible, was the integrated analysis tool, which was part of the used Microsoft Forms online questionnaire platform. Use of the tool involved looking at the responses to see what common themes or answers emerged from the data. The tool helped highlight the central tendencies of the participants' responses by translating the answer data into a graphical format. The automated insights from the survey tool allowed for the drawing of significant conclusions about the survey participants' preferences, behaviors, and opinions towards outsourced IT support services that emerged from the numerical data.

This approach of employing the automated analysis technique to extract meaningful insights from the survey data proved to be extremely efficient, meanwhile providing the ability to get guaranteedly accurate insights from which valuable conclusions were able to be drawn. This method ensured there were no miscalculations, a possibility present when data would be tabulated for insights by hand, using software such as Excel. This issue is also noted by Greener (2015, pp. 74, 78) as she highlights the advantage of employing SPSS, or any statistical software, that allows researchers to concentrate on comprehending and interpreting statistics instead of computing them, with a strong emphasis on the downside of the need for meticulous data planning and input. She states that the software ensures accuracy in computations, provided that the data entry is error-free. This was an unnecessary risk, and to obtain more accurate and valid results from the study, it was knowingly avoided by utilizing the automatically assembled results.

#### 4.5 Validity, reliability and limitations of the chosen method

Greener (2015, pp. 44–45) defines reliability as the consistency or the ability to replicate outcomes over time. She writes that the research should be conducted in a manner that is both transparent and straightforward, which in turn allows others to replicate the method and achieve identical results, or at the very least, to provide enough clarity to assure readers that the findings were not manipulated in any manner. Greener also describes validity by explaining it as the preciseness of a measurement or observation.

Mander (2022) highlights specific shortcomings of quantitative research, focusing on the constraints posed by its reliance on numerical data collection. He argues that the predominance of numeric responses can obstruct a comprehensive grasp of the participants' viewpoints and emotions, potentially reducing intricate opinions to overly simplistic terms. Furthermore, he critiques the employment of predetermined answer options, a notion also presented earlier in this chapter, noting that these may not always capture the authentic feelings of the participants, forcing them to choose an answer that does not truly represent their perspectives. Greener (2015, pp. 86) adds by stating that devising thoughtful and meaningful options for answers is a crucial aspect of the survey design process. She notes that the phrasing of survey questions presents a considerable challenge in crafting effective questionnaires.

In light of the insights presented above, the reliability and validity of the findings were attempted to be ensured through the adoption of a quantitative research method and the use of an online questionnaire. This approach, predominantly selected to facilitate efficiency, also has the benefit of ease of replication, which lends to the inherent advantages of the quantitative method in terms of standardization and the ease with which the questionnaire could be duplicated. A comprehensive, translated list of the questions used in the questionnaire is made available in Appendix 2, highlighting also the commitment to transparency.

Additionally, the inclusion of these questions in the appendix, along with explanations provided to participants regarding the purpose and usage of the questionnaire and the handling and disposal of the data it subsequently produced, reflects an effort towards ensuring transparency. To further bolster the validity of the research, both the response rate and non-responses were taken into account when the data were analysed in order to put the gained results into perspective about how well they actually would be representative of the larger population.

However, as previously mentioned, the research method adopted comes with some inherent limitations. As also explained above, the structured nature of the questions and the predetermined answers may not have captured every significant sentiment of the participants, potentially impacting the validity of the study to a certain extent. Nevertheless, this problem may not be as severe, due to the fact that, at least from a subjective point of view, the questionnaire incorporates a variety of different types of questions with a plethora of answer choices. This diversity in question types may have helped to mitigate some of the limitations associated with the methodological approach.

#### **4.6 Ethical considerations**

A researcher who tampers with the results of their research to better their personal agenda can be considered highly unethical. This sort of practice is fortunately rare, as according to Greener (2015, pp. 17–21), researchers exert considerable effort to maintain objectivity and balance in their investigations. However, she notes that completely detached and unbiased research is unattainable. Thus, she explains that, since it is impossible to make research completely unbiased, a notion about the lenses through which we look at the research problem, coloring our insights, must be kept in mind. She asserts that we must be explicit about this in order to give readers the benefit of being able to interpret the results not as an objective truth but as a version of truth. She also emphasizes the importance for researchers to refrain from prematurely reaching conclusions.

In order to ensure that the research conducted for this thesis met the ethical standards of good research practices, this research followed the recommendations of Greener in order to guarantee that all possible variables that might hinder the study's validity through ethical misconduct were mitigated by taking active steps to counter them. Greener (2015, p. 53) writes that the cornerstone of comprehending ethics within research hinges on the principle that research involving human participants must adhere to exemplary ethical standards and comply with the relevant laws safeguarding personal data. She continues by writing that in conducting primary research, it is crucial to uphold fundamental ethical practices, including non-maleficence.

Greener (2015, pp. 56–57) also stresses the importance of preserving the anonymity of participants in research as a measure to safeguard their privacy and ensure honest feedback.



She points out that this involves more than just refraining from identifying individuals in reports; it also requires a thorough assessment of the need to gather demographic details, questioning whether this information is essential for the results of the study, or if the research design could be modified to eliminate the collection of such data. Lastly, she highlights that obtaining informed consent involves preparing documents for all research participants. These documents should explain the nature and purpose of the research, their involvement, what will be done with the data collected from them, and to what they are consenting. Typically, this documentation will also detail the methods for storing and discarding the data afterwards.

Taking note of these good ethical practices, the research completed in this thesis tried to uphold them by, first and foremost, making the questionnaire anonymous, thus ensuring that no personal data was gathered. Additionally, data that could lead to the recognition of any company were not collected. As suggested, the questionnaire was also designed in such a way that no demographic details needed to be submitted. Although analyzing demographic details alongside IT skill levels could have provided interesting insights, it was decided to exclude such questions. This decision not only kept the study within its scope but also maintained participant anonymity and aligned the research with ethical standards. Furthermore, the ethical commitment was reinforced through an invitation email, detailed in Appendix 3, which served as an informational letter. This email informed participants about the questionnaire's purpose, its use of data, and other important details, such as how long the survey was open. This assured participants they could complete the questionnaire at their convenience, without feeling pressured. Based on the taken steps it could be argued that these measures collectively upheld the research's ethical integrity, safeguarded participant data, and also enhanced the study's professionalism.

Now, as the bases have been covered regarding the methods used and the attempted efforts taken to ensure these methods produced valid results without breaching any ethical standards—thereby offering the reader a better understanding of the so-called machinery with which the study achieved its results—it is possible to progress to a highly detailed explanation of the study's concrete execution process. This enables the reader to gain a comprehensive understanding necessary to analyze the results produced.

## 5 IMPLEMENTATION OF THE PRIMARY RESEARCH

This section of the thesis aims to detail out the concrete process of completing the primary research for this study from start to finish, in order to give the reader a detailed and complete picture of the process and, thus, the ability to better interpret the results explained in the latter sections, alongside with the possibility to repeat the study. An overview of the process can be observed from the Table 4 below.

Table 4. The implementation process of the primary research

1. Initial review of the market area
2. Identification of businesses
3. Selection of SMEs for the sample
4. Design and distribution of the questionnaire
5. Collection and analysis of responses

### 5.1 Description of the initial process

The primary research of the thesis began with an initial and thorough review of the map of the proposed market area, as depicted in Picture 1. Due to the multifaceted nature of the market area, it was very clear from the very beginning that, in order for the primary research to be comprehensive, this research would require information collected from a vast array of different businesses that are located within the proposed market area. Furthermore, it became apparent that insights from companies across numerous fields within the market area were crucial for the depth and validity of the research, to ensure its applicability in a real-world scenario. With this in mind, the research process advanced with a tedious effort of gathering a list of these businesses that were located in the proposed market area. This process took form by going through one municipality at a time for the businesses. This was done to better control the progress.

The cornerstone of the thesis's sample collection effort was Finder.fi, which has been introduced earlier in the text. This database proved invaluable, offering detailed public data on businesses including turnover, number of employees, and contact information in the form of email addresses. The approach used in the thesis was methodical: for each municipality within the market area, the process necessitated delving into the database, exploring every listed industry and the businesses classified under them. This thorough search process allowed for the compilation of an exhaustive list of businesses, meticulously recorded into an

Excel file. This file soon became a pivotal tool in the research, facilitating a systematic analysis of the business landscape across the municipalities.

Following the phase of collecting a list of businesses in the area, the next step in the research process involved going through this gathered list to identify SMEs, based on the description provided by the European Commission earlier. This selection process involved a very detailed review and filtering of the data in the list in Excel, ensuring that only businesses meeting the SME criteria were retained and, thereafter, became part of the sample. However, a significant challenge emerged as not all businesses had their email contact information readily available in the Finder.fi database. This necessitated a search on another public database, Asiakastieto.fi, to find each business's email address individually. When found, these email addresses were appended to the respective businesses in the Excel file, enriching the list with essential contact information.

Despite these efforts, it became evident that a notable number of businesses would be excluded from the sample due to the absence of email contact information, resulting in an issue where the businesses could not be contacted and thus had to be left out of the sample. However, this was not seen as a major hindrance as the already gathered list was extensive, making the sample of the study fairly massive, consisting of 1 500 businesses. Despite this limitation, the final list of SMEs, now complete, became the sample for the thesis and served as the foundation for the subsequent phase of the research.

## **5.2 Crafting, distributing, and collecting the designed questionnaire**

A significant aspect of the research process was the creation and distribution of the questionnaire aimed at understanding different companies' perceptions towards IT support. The process for this effort was methodically planned and executed, as detailed in the following. The initial step involved utilizing the Microsoft Forms platform to design the questionnaire. This platform was chosen for its comprehensive features that allowed for the precise and extremely efficient gathering of the necessary data, given the large sample size. Furthermore, since the suggested market area is located in Finland, Finnish was the primary language used in the questionnaire to ensure ease of understanding for participants.

The content of the questionnaire, elaborated in detail in Appendix 2, tried to gather essential information about the state of the suggested market area's potential based on the

perceptions and experiences that the SMEs in the area had about outsourced IT support, informing about the market potential. The questionnaire began by clearly stating its purpose, data usage, and confidentiality measures, including post-thesis data deletion. A major focus was on maintaining respondent anonymity, which was also very specifically disclosed in the introduction messages, despite necessary inquiries about their role inside the company and the company's geographical location, to ensure relevant responses. Initial questions identified the respondent's role and business location, validating response relevance. Further questions delved into details about businesses' industry, employee count, and last year's turnover, as this information was seen to pose high importance in order to compare the gained data with the findings in the literature review.

A significant section of the questionnaire explored companies' digital tool usage, IT infrastructure, and competency levels, alongside major IT concerns. It examined internal and external IT support usage, reasons for not outsourcing, and attitudes towards such services, offering insights into IT support decision-making processes. Furthermore, the questionnaire aimed to provide a detailed view of the IT landscape among the area's SMEs, contributing valuable insights for potential new business establishments in this area.

Upon completion of the questionnaire design, the next phase was to set a specific answering period, which was determined to be from March 8<sup>th</sup> to March 22<sup>nd</sup>. This two-week window was selected to give participants ample time to respond and ensure that they would not feel pressured to give their answers immediately, while also keeping the strict project timeline on track. Following the establishment of the answering period, an Excel list containing the sample and contact information of the businesses was utilized to create a recipient list for an email invitation. The invitation crafted was detailed, highlighting key information about the questionnaire, such as the anonymity of responses and the duration for which the questionnaire would remain open. These details were meticulously outlined to ensure participants were well-informed, as also noted in Appendix 3.

Once the invitation was finalized and all preparatory steps were confirmed to be in order, the questionnaire was distributed to the participants. This marked the start of the response collection period, during which participants had the opportunity to contribute their insights to the research, and their responses were automatically collected and recorded in the Microsoft Forms platform for further analysis. After the answering period was over, the survey was

closed, and the gathered data became analyzable. This analysis of the data is gone through in detail in the following chapter.

## 6 PRESENTATION OF PRIMARY RESEARCH DATA

The main function of this chapter is to present the findings of the conducted primary research. The analysis in the subsequent sections examines the data collected, presenting it in the order of the questions presented to the research participants. This approach aims to present the findings as coherently for the reader as possible. However, before moving to the presentation of the study's findings, a discussion about the general facts of the study, such as response rate and non-responders, should be briefly covered. It can be stated that the response rate for the questionnaire was abysmally small. Only 39 participants responded to the questionnaire out of a sample of 1 500 participants, making the response rate approximately 2,6 %. This means that the non-responses clearly dwarfed the number of respondents, for which there could be multiple causes. These will be discussed more in detail soon after the findings of the questionnaire have been presented.

Starting the presentation of the findings from the very first inquired topic of the current position of the participant, the gained data shows that a majority of the answers, 76 %, came from founders or CEOs of the companies. The remaining 22 % came from managers and employees. Out of the 29 municipalities included in the proposed market area, 10 had no companies responding to the questionnaire. One third of the responses, equating as the majority, came from the manufacturing industry sector. The fewest answers were obtained from the retail sector, with only a total of four responses originating from there.

Quite predictably, a large majority of the businesses that participated in the questionnaire categorized themselves as having anywhere from zero to four employees, as indicated by Figure 5 below. Companies with five to nine workers were interestingly few, with only four respondents, and companies with a larger number of workers were extremely rare among the participants.

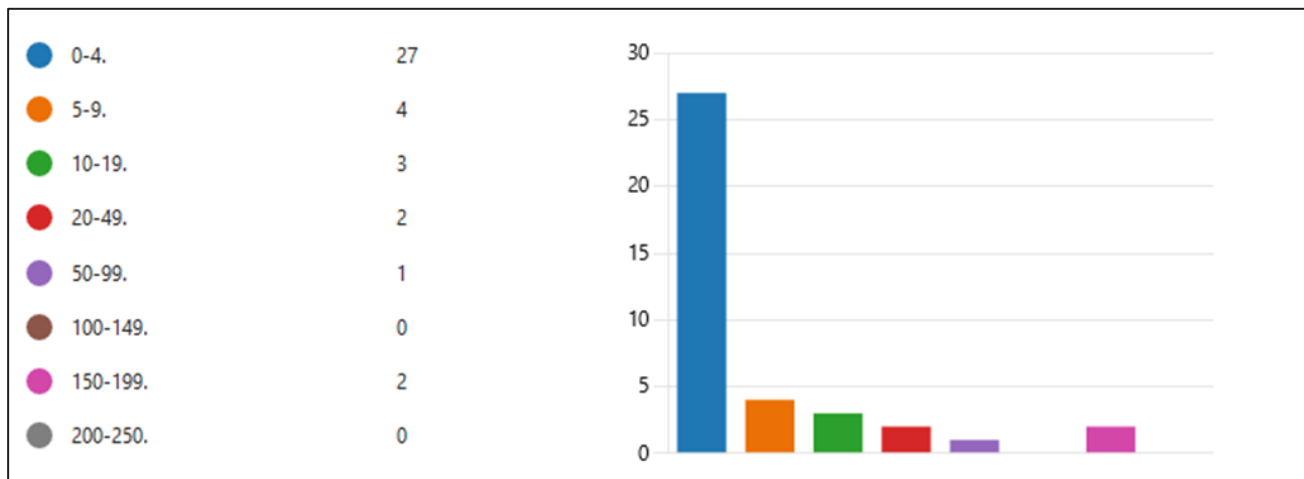


Figure 5. How many employees (including the entrepreneur) does your company currently have, in the year 2024? (Turpeinen, 2024, CC BY-NC-ND 4.0).

As could be expected, given that the majority of the companies participating in the study can be classified as microenterprises, this characteristic was also reflected in their reported turnover numbers. Once again, a majority, 61 %, of the businesses stated that their turnover ranges from € 100 000 to € 500 000. Furthermore, 20 % reported their turnover numbers to fall between € 500 000 and € 2 000 000. Only a handful of companies reported turnover numbers larger than two million euros.

In question number six, when participants were asked to rate a set of statements—with 1 indicating disagreement and 5 indicating strong agreement with the given statement—92 % responded that they strongly agreed with the statement regarding the daily use of digital devices in their workflows, as depicted in Figure 6. Furthermore, there was not a single response indicating disagreement with this statement. Regarding perceptions of their company's information technology's functionality as being at an excellent level, only 5 % of participants disagreed, and approximately 70 % agreed. This suggests that the majority view their information technology as adequate for today's needs. Additionally, 56 % strongly agreed that their company's current IT infrastructure is adequate for the company's current needs.

The statement aiming to gauge the emphasis companies place on information technology in terms of its ability to help the business grow received a varied range of responses. 12 % of participants strongly agreed with the statement, whereas 23 % agreed somewhat, and 33 % were neutral towards it. Interestingly, 26 % somewhat disagreed, and a small group, consisting of 5 %, strongly disagreed with the statement.

When inquired about whether the companies face significant challenges in the use of information technologies, approximately 25 % strongly disagreed with this statement, and nearly 49 % disagreed somewhat, totaling nearly 75 % of all participants indicating some level of disagreement. However, 10 % agreed, while 5 % strongly agreed with the same statement. Regarding challenges in the upkeep of their information technology systems, the distribution of answers was fairly similar to the earlier question: 33 % strongly disagreed, 30 % disagreed somewhat, 23 % agreed somewhat, and a small percentage of 2.5 % agreed strongly.

When participants were asked to weigh in on statements regarding their skill levels, and the skill levels of their employees, in the use of information technologies, these two statements also received quite a similar distribution of answers. Approximately one third of the participants had a neutral stance on both the skill levels of their employees and their own skill levels. However, a majority agreed that both their company and they themselves generally possess a good level of skill in terms of information technology use, with 5 to 7 % disagreeing strongly with the statement.

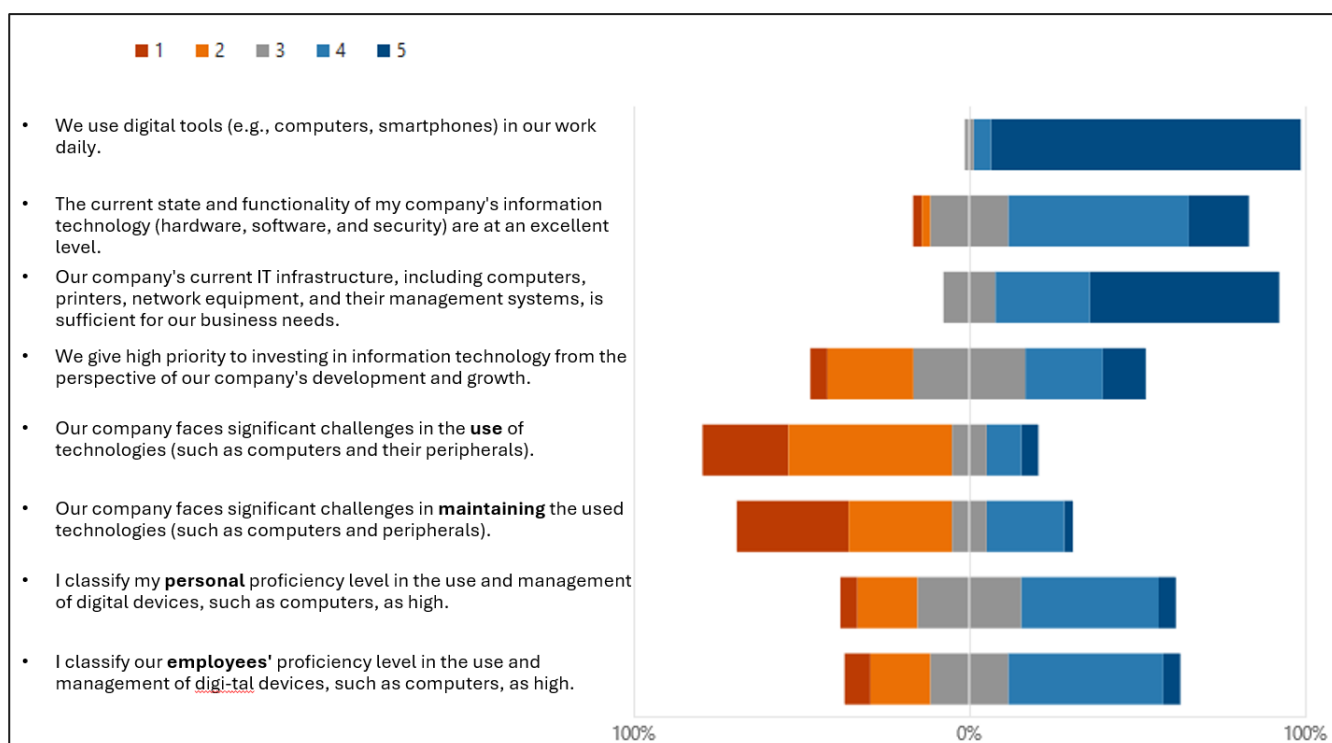


Figure 6. Answer distribution to the statements of question number 6 (Turpeinen, 2024, CC BY-NC-ND 4.0).

Once the participants were given the opportunity to state their largest concerns regarding their company's information technology, an absolute majority identified cyber threats as their



primary concern. This was followed by concerns over the management of company files and their backup, as well as limitations related to costs and budget constraints. Additionally, nine respondents noted that compatibility issues arising from different systems were a source of worry, as illustrated in Figure 7.

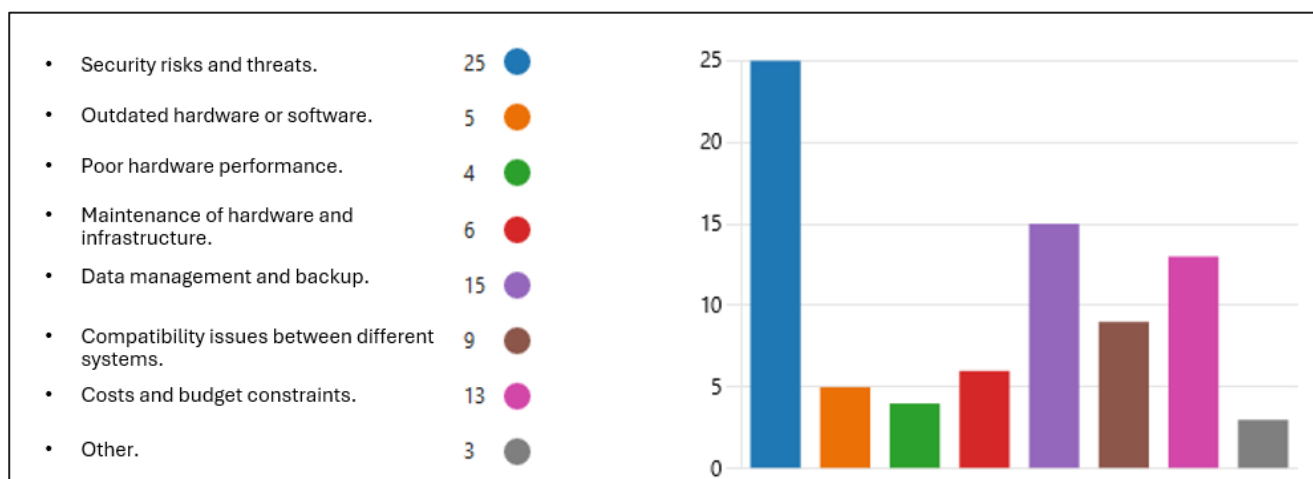


Figure 7. Different factors causing concern for companies regarding their information technology systems (Turpeinen, 2024, CC BY-NC-ND 4.0).

The participants were also asked if they had an internal IT support staff, to which 9 participants, or 23%, answered that they did. However, the remaining majority of 30 participants stated that they did not have one. Subsequently, they were inquired about their current use of outsourced IT support services. Interestingly, 46% of the participants indicated that they were utilizing these types of services, and another 46% said that they were not. One participant mentioned having used such services previously but was not using them anymore, and two participants answered that they were considering the use of such services. This question was followed in the survey by an optional inquiry regarding the reasons for no longer using such services. Five participants responded that they found utilizing internal resources instead of outsourcing to be more cost-effective in the long run, and three participants believed that their internal IT support could respond more quickly and effectively to daily challenges and problems.

Another question presented multiple statements, with which participants were once again asked to either strongly disagree or agree. This question inquired about the participants' views toward outsourced IT support, as indicated by Figure 8 below.

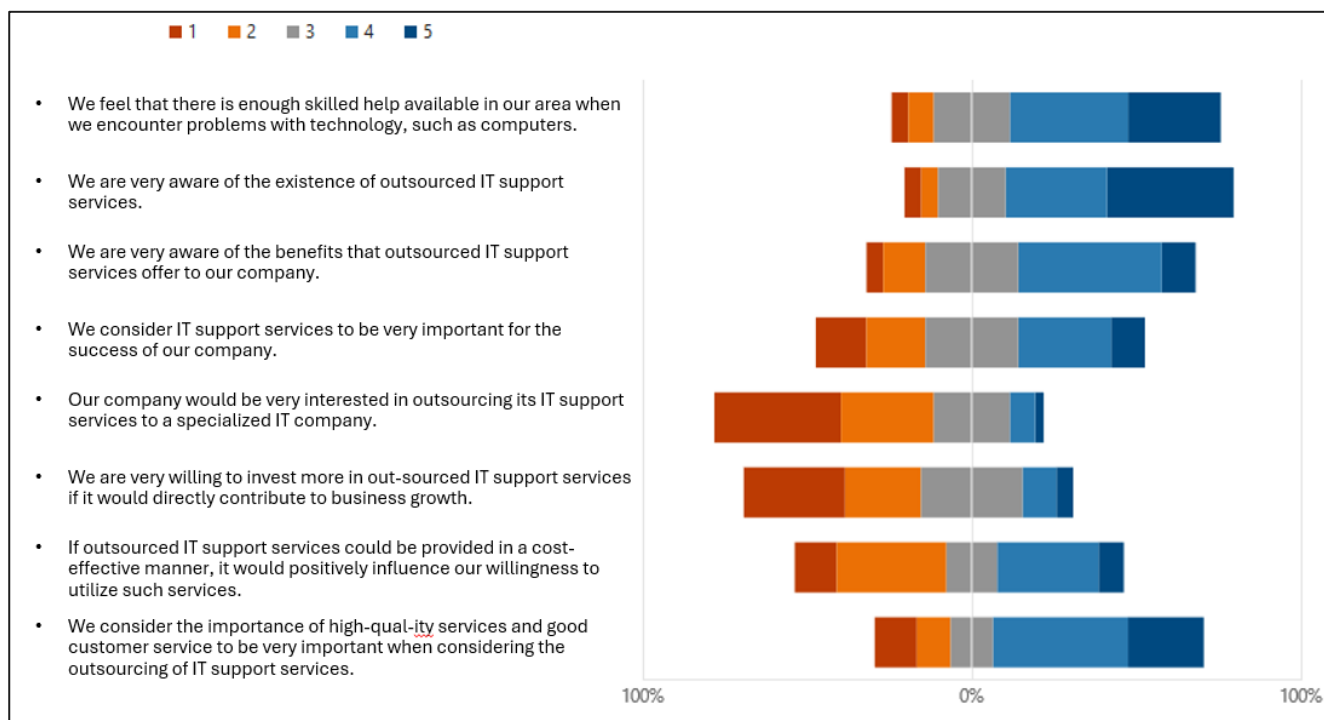


Figure 8. Answer distribution to the statements of question number 11 (Turpeinen, 2024, CC BY-NC-ND 4.0).

The first statement asked participants to express their agreement or disagreement with the statement that their area had enough skilled help available to them should they ever encounter any issues with their information technologies. Approximately 28 % strongly agreed, and nearly 36 % agreed somewhat, indicating that their area indeed had plenty of help available. A combined minority of roughly 13 % disagreed with the statement to various degrees. When asked about how aware the participants were of the existence and benefits of outsourced IT support services, the distribution for awareness was as follows: 5 % strongly disagreed, another 5 % disagreed somewhat, roughly 20 % were neutral towards the statement, while nearly 31 % somewhat agreed, and 38 % strongly agreed. Moreover, regarding their awareness of the attainable benefits of such services, 5 % strongly disagreed, and 12.8 % disagreed somewhat. For this, 28 % were neutral, and a large majority of 43 % somewhat agreed to it, while a small number of 10 % agreed strongly.

Right after these statements, the following question revealed a broadly distributed spread of answers, where only 10% strongly agreed that considering IT support services is very important for the success of their company. Twenty-eight percent agreed somewhat to this statement, and interestingly, an equal number of 28% were neutral towards it. However, 18% somewhat disagreed, while 15% strongly disagreed. A significant portion, consisting of 38%, strongly disagreed, and 28% disagreed somewhat with the statement regarding a high

interest in outsourcing their IT support. Moreover, only a combined percentage of 10% agreed with this statement, of which only a minimal number of 2.6% agreed strongly.

Even when asked if companies would be willing to invest in outsourced IT support services if it would directly contribute to their business growth, nearly 31% of participants strongly disagreed with this perspective. Furthermore, 23% disagreed somewhat, with only 10% agreeing somewhat, and 5% agreeing strongly.

The statement “If outsourced IT support services could be provided in a cost-effective manner, it would positively influence our willingness to utilize such services” received a slightly more even distribution of answers, with 8% stating that they strongly agree, and 30% agreeing somewhat. Meanwhile, 33% disagreed somewhat, and 13% disagreed strongly with the statement. A majority of respondents, with 23% strongly agreeing and 41% somewhat agreeing, responded to the statement emphasizing the importance of high quality in services offered. Only 10% disagreed somewhat, and 13% disagreed strongly with the statement.

When participants were asked about factors that may act as potential barriers when considering outsourcing IT support services, one reason stood out above all others: costs. This is clearly illustrated in Figure 9 below, where the prominence of cost as a barrier can be effortlessly observed.

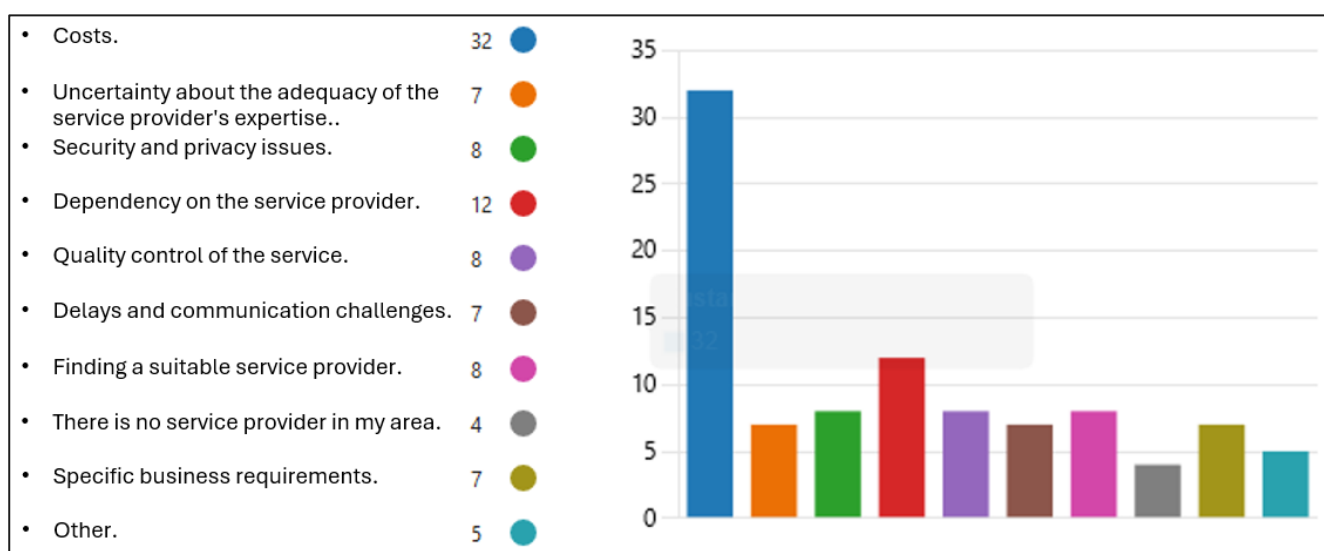


Figure 9. Barriers for outsourced IT support services (Turpeinen, 2024, CC BY-NC-ND 4.0).

Another barrier, from a list where participants could select all applicable options, that garnered notable attention, as observable from Figure 9 above, is dependency on the service provider. Interestingly, the rest of the barriers received a relatively similar amount of attention, but the barrier of not being able to find a service provider in their area was chosen the least out of all the options.

In the final question of the survey, participants were asked to select any applicable options that acted as attractive factors towards IT support outsourcing. The submitted responses are showcased in Figure 10 below.

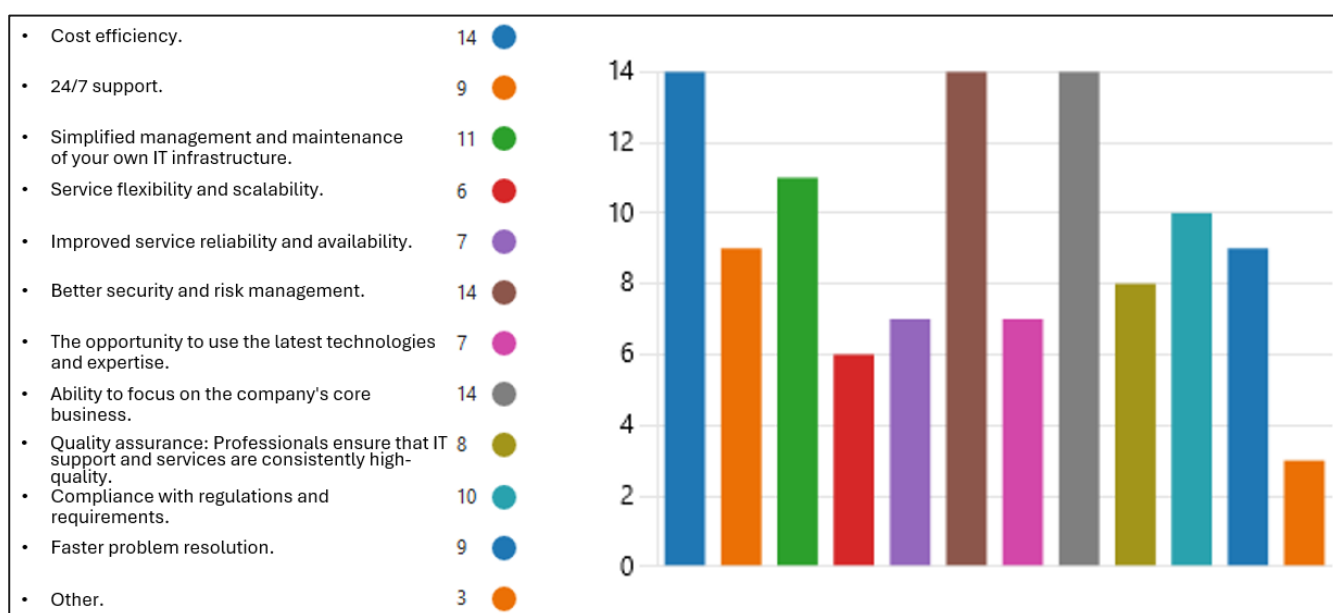


Figure 10. Attracting factors towards IT support outsourcing (Turpeinen, 2024, CC BY-NC-ND 4.0).

Here, once again, costs have garnered significant attention. However, interestingly, they do not dominate the charts alone. Variables such as improved ability to handle security threats and manage risks, alongside the ability for the company to focus on their core business operations, are exactly on par with costs. Overall, every option, except for the “other” category, was frequently chosen by the participants. The least selected option, besides “other,” was flexibility and scalability. The simplicity of IT infrastructure management also received considerable attention, with a total of 11 votes, making it the fourth most chosen attractive factor from the participants' perspective. Now that all the gathered data has been presented, the upcoming chapter will appropriately highlight the main findings of the study that have been deemed most important from the research question's point of view, and also address the issue of the low response rate.

## 7 DISCUSSION

This section summarizes the main outcomes of the primary research, underscoring its value and reflecting on these outcomes in light of the theory uncovered in the literature review.

Through active discussion, the main purpose of this section is to highlight what was learned throughout the process, as well as to examine how well the findings about the localized area align with the earlier information about the topic.

### 7.1 Interpretation of results and main findings of the study

The initial findings indicated that the population within the proposed market area, as determined by questionnaire responses, predominantly consists of microenterprises. These businesses are characterized by their small size and, according to the information gained from the questionnaire answers, correspondingly modest turnover rates. This observation aligns with earlier analyses presented in Chapter 3, which concluded that the majority of businesses in the area are, in fact, microenterprises.

Interesting findings regarding the usage of digital tools differ partially from the information presented in the theoretical framework. It was stated that many businesses tend to fall into the lower quadrants of technology usage, especially as their size decreases. However, the data collected suggest that this may not necessarily be the case, as nearly every business that responded to the questionnaire reported that they indeed utilize information technologies in their workflows daily. This result, however, may be skewed. It is highly plausible that those who use technologies daily were also the ones most willing to participate in the online questionnaire, thus potentially omitting a significant segment of businesses that do not utilize technology as extensively. Therefore, this finding should be interpreted with caution, even though it was also stated in the theory that, in general, in Finland, the usage percentages in the utilization of technology are fairly high.

Another central finding was that the majority of the participants viewed cyber security threats as a significant concern. This finding partially aligns with and explains the statements made in the literature review regarding the growing trend of businesses investing more in cyber security, as well as the strong forecasts for steady growth in the information technology security markets.

Staying on the topic of central findings, the majority of the businesses that participated in the study reported that their information technology infrastructure is, in fact, very modern, capable, and sufficient for their needs. Many also reported having sufficient skills to handle the equipment, although one-fourth reported disagreement with the statement of having good IT skills. Additionally, between 15 to 20 percent faced challenges regarding the use and upkeep of their information technology systems. The lack of skills, extensively covered in the theory section, appears not to be as prominent according to this study, at least in the covered region. However, there are still some who were not as proficient in the use of digital tools compared to others. It seems that, as discussed, many will probably fall somewhere in the middle when it comes to usage skills.

Furthermore, findings regarding the adequacy level of companies' information technology to meet today's needs varied somewhat. Many seem to have the impression that their infrastructures are in good and adequate shape, contrary to the theory suggesting that numerous SMEs find themselves in situations where their infrastructures would not be adequate. However, what can be considered an adequate and good level for the technology a business owns may be very subjective, especially if the person evaluating the systems is not a professional, they may end up overvaluing the systems they have, thus potentially unintentionally falsely reporting the perceived level. This possibility arises predominantly because the majority of the participants were either owners or CEOs of the companies, and as highlighted multiple times in the theory, they may not possess the best technical skills, thus not qualifying as professionals in the field and potentially giving overly optimistic answers.

However, a secondary outlet for grounded answers on the topic of the companies' information technology's adequacy levels could have been the employees. This study included a few respondents identifying as such, but retrospectively, this segment could have been targeted to be, in fact, larger. Although potentially not as well-versed about the company's overall strategic picture and goals compared to the CEOs, this small segment reporting on the adequacy levels might have had the advantage of reporting on them more objectively. This is due to the fact that they are the ones directly linked to using the technology in the workflows, potentially much more than the CEOs and owners. Furthermore, they could be theorized not to be as overly optimistic about the adequacy levels of the technology, as they could be argued to have a much smaller personal stake in play since they are only working for the company instead of owning it. Therefore, at least for this question, the study could have

generated potentially much more accurate information about the true current state of adequacy of the companies' information technology levels. However, this is only speculation and would need to be proven through actual comparative research conducted to find out if this was actually the case.

Transitioning from the discussion on the potential influence of the different roles held by participants within the company on the study's outcomes, attention is now redirected towards the core findings of the research. It was discovered that the majority of participants reported lacking internal IT support to manage the businesses' information technology issues. Additionally, half of the respondents did not utilize outsourced IT support, leaving them entirely on their own when facing technical problems. These findings about the level of businesses' utilization of IT experts, in any form, seem to align with the theory that microenterprises rarely have a skilled IT professional in-house and that many seek assistance from third parties, even though, in this case, only half reported doing so. However, half was more than expected, as the theory section suggested that the availability of such outsourced services was purportedly much sparser outside the growth centers of cities.

It could very well be that, due to the potential for handling technical issues remotely, these outsourcing businesses are able to operate over a much wider area, thus explaining the surprisingly larger number of businesses utilizing such services. This, in turn, somewhat refutes the hypothesis that the market area would have many businesses struggling with their IT infrastructures and that there might be more businesses facing issues than there is available help in the form of outsourced support. Instead, the markets may be more competitive than forecasted. Nevertheless, the fact that half of the businesses utilize outsourced services indicates that not every business does so, meaning that there is still significant potential.

The final findings of significant importance revealed that many participants demonstrated a good level of awareness regarding the existence of outsourced IT support services and the advantages they offer. However, concerningly, very few were willing to invest in these services. Despite this, the cost efficiency, alongside the high quality of the outsourced services, the ability to better control risks, and the opportunity to focus on core business activities, were factors that businesses value. These factors could potentially be highly influential in positively affecting businesses' outsourcing consideration processes. Furthermore, as discussed in the theory section of the thesis, the distribution of businesses' reasons to outsource—splitting into the main categories of cost saving, access to the latest technologies

and skills, focus on core competencies of the company, improved service quality, and lack of internal skill present in the business—also aligns with these findings.

Moreover, based on these findings, it appears that the concern regarding rural businesses experiencing spotty coverage of service provision, a lack of knowledge about the variety of support mechanisms, and an inability to find such help due to its limited availability in the area, might not be as severe as previously thought, based on the facts covered in the literature review. Many are evidently aware of the available support and also able to acquire it. However, there are still companies within this mix that genuinely face these issues, so it cannot be fully stated that the covered information in the theory section was inaccurate. However, this population belongs to a minority, at least in this study's results.

## **7.2 Achievement of objectives and critical reflection**

To assess the effectiveness of the primary research, insights from the literature review, and market analysis in understanding the core research question: “What is the current state of the market in the area comprising the three regions of Southern Ostrobothnia, Central Ostrobothnia, and Central Finland, from the perspective of viability for potential new IT support businesses focusing specifically on SMEs?”—it can be concluded that, although the methods were far from perfect, they yielded valuable results. However, these may only be considered indicative due to the extremely low response rate of 2.6% in the primary research. Nevertheless, these results can be considered satisfying since 39 companies did reply to the questionnaire. Even though this is far from the 1 500 targeted, it is still a meaningful number, producing useful insights as it could very well have been zero. This low response rate could have possibly been mitigated by taking measures such as sending reminder emails to the participants about the questionnaire, alongside other methods. However, these will be discussed more in depth shortly.

Breaking the analysis of the methods from the point of view of how well the objectives of the thesis were achieved into their own sections for more detailed discussion, first discussing how well the review of the literature helped from the perspective of the whole process, it can be stated that without an extremely extensive and thorough review, many of the review findings could not have been taken into consideration when designing the questionnaire. Thus, making it pivotal groundwork without which this thesis could not have been able to gain



answers as closely aligned with the needs of the research problem as it now did. Furthermore, the initial analysis of the potential competition and customer base, based on the sourced data about the suggested market area, helped develop insights about the area's business composition, as well as create a mental picture of the adversaries' locations through their visualization on a map. This process assisted in distilling a theoretical picture of the proposed market landscape.

Lastly, it can be stated that the questionnaire was partially a success in addressing the objectives it set out to explore. All questions were more or less aligned with the topics covered in the literature review, thereby being crucial for investigating the main research problem. However, the low response rate, briefly discussed in this section and the previous chapter, is a point worth discussing now. Due to the extremely low answer rate from the sample, the results obtained from the survey cannot be confidently applied to the entire population, thus limiting the practical application of this thesis to a degree. There could be countless reasons for this low response rate. The first might be that participants were so fully occupied by their business needs that they did not have time to participate, despite the two-week period provided. A second reason could be a lack of interest. The sample might also have been adversely affected by excessive exposure to various spam emails, leading to the survey invitation being disregarded as more spam. Most likely, many of these reasons, among others, contributed to the low response rate.

Some measures could, of course, have been taken beforehand to ensure a higher response rate. For example, a certain portion of the sample could have been contacted in advance by phone to inform and request their participation before sending the invitation letter. However, applying this approach to the entire sample would have been inefficient due to its sheer size and the time constraints of the thesis. Furthermore, participants could have been sent a reminder email about the questionnaire, politely asking them to seize this valuable opportunity to contribute to the study, potentially but not guaranteeing an increase in the participation rate.

Finally, offering incentives, such as entry into a lottery for a prize upon survey completion, could have been used to potentially increased participation rates. However, this approach was ultimately not adopted due to significant concerns. Primarily, it was feared that such incentives would attract participants interested solely in the lottery, potentially leading them to rush through the survey. This rush could result in the collection of low-quality, meaningless

responses, thereby skewing the overall results. Moreover, identifying and removing these unreliable responses would necessitate additional efforts to clean the data, particularly by filtering out responses from participants who completed the questionnaire unusually quickly or through other criteria. Consequently, to avoid these issues and ensure the collection of high-quality data, the decision was made to distribute the questionnaire without any incentives. This approach aimed to attract participants genuinely interested in the survey's subject matter, thereby enhancing the integrity and value of the collected data.

Nonetheless, as has already been accomplished, some conclusions have still been drawn by comparing the results to the information presented in the theory section. But, given the unexpectedly low number of responses, it cannot be stated with a high degree of confidence whether these results are representative of the entire population of the area, or if the participants who took part in the study were simply extraordinary in some way, making them more inclined to participate and, as a result, providing data that might be extraordinary. Nevertheless, while bearing in mind that the results must be taken with a grain of salt, they were compared to the theory and meaningfully discussed, allowing for the establishment of some foundational theory as confirmed based on the findings of the primary research. This makes the conducted research not in vain.

### **7.3 Implications and practical application**

As recently mentioned, interpreting the results of the completed research with caution may somewhat diminish the potential value of the ensuing practical insights, but is necessary. Given that a significant majority of the survey respondents are microenterprises with fewer than five employees, this could indicate a potentially large market segment for IT support services tailored to small businesses. Moreover, the low adoption of internal IT support among these companies suggests a gap in the market that external IT service providers could exploit, as not all businesses have outsourced their IT support either. However, determining the exact number of businesses in need of such services is challenging, as a number of businesses expressed unwillingness to invest in such services.

Furthermore, cybersecurity has emerged as the most significant concern for SMEs regarding their IT infrastructure, underscoring a specific service need within the IT support market. This suggests that providers offering robust cybersecurity solutions could find a receptive

audience in this segment. However, costs were identified as a major barrier to adopting outsourced IT support services and a significant factor influencing SMEs' decision-making regarding IT support, but turning this barrier into a positive indicates a market opportunity for cost-effective, flexible IT support solutions catering specifically to budget-conscious SMEs.

Additionally, while nearly half of the respondents are currently utilizing outsourced IT support services, a significant portion has not yet embraced outsourcing. This dichotomy reflects a market potentially ripe for growth but requiring targeted efforts to address concerns and barriers related to outsourcing, such as cost and dependency on service providers. Despite cost concerns, there is a clear emphasis on the importance of high-quality services among the participants that submitted responses to the questionnaire. This indicates a market opportunity for IT support services that can balance cost-effectiveness with high service quality, particularly in areas such as cybersecurity, data management, and system compatibility. Reflecting back on the gathered data, a portion of respondents indicated a lack of awareness about the benefits of outsourced IT support services, which could be especially notable if there are more businesses like them out there. This suggests significant room for market education and targeted marketing efforts to highlight the advantages and potential return on investment in professional IT support, and more specifically managed service providers.

Overall, these findings suggest a market opportunity for IT support services in the studied region, particularly for providers who can offer cost-effective, high-quality services with a strong emphasis on cybersecurity, description to which a managed service provider fits perfectly. Furthermore, based on the primary research and the information covered about the inevitable growth that the IT service sector has been forecasted to have, it presents an opportunity worth acting upon. However, efforts to educate SMEs about the benefits of outsourced IT support and to address common barriers, such as cost concerns and fear of dependency, should be undertaken to further expand the market potential for these services.

#### **7.4 Suggestions for future research**

Based on the findings covered in this study, future research could potentially focus on the following topic areas. There is potential to conduct a comparative analysis of IT adoption, challenges, and support needs between microenterprises and larger SMEs. This research could investigate how company size might influence IT infrastructure decisions, alongside the

perceived value of IT support services, and the specific challenges which differently sized businesses may encounter. Furthermore, there are also avenues to conduct research on the topics of cybersecurity needs and solutions for SMEs, evaluating the cost-effectiveness of IT support models, and understanding the impact of remote work trends on IT infrastructure.

Out of these mentioned avenues, the first could potentially explore the cybersecurity topic further, given the identified concern over cybersecurity. A deeper investigation into the specific cybersecurity threats which SMEs in the region face on a daily basis, alongside their preparedness to tackle these threats, and the effectiveness of current cybersecurity solutions, could provide valuable and very practical insights directly implementable by the SMEs. The methodology of such a study could possibly include case studies of businesses that have successfully implemented cybersecurity measures. For the second mentioned avenue, an economic analysis comparing the long-term cost-effectiveness of internal versus outsourced IT support for SMEs could be conducted. This study could, for example, use cost-benefit analysis to assess the financial implications of each model. The last topic, concentrating on the remote work aspect, could study how this trend affects SMEs' IT infrastructure needs, including the adoption of cloud services, collaboration tools, and cybersecurity measures, which could provide timely insights in this perpetually more digitalizing society.

## 8 CONCLUSION

The main purpose of this thesis was to lay the groundwork for a potentially new IT support company at the junction point of three regions in the central region of Finland, commissioned by the potential company's founders. The thesis aimed to achieve this through conducting a market analysis of the area by utilizing quantitative methods and an online questionnaire. The process began by defining the research problem as "What is the current state of the market in the area comprising the three regions of Southern Ostrobothnia, Central Ostrobothnia, and Central Finland, from the perspective of viability for potential new IT support businesses focusing specifically on SMEs?" The initial literature review unveiled substantial information about the topic, revealing that many SMEs globally and regionally struggle with their current IT infrastructures due to a lack of resources and skills to manage these issues.

Moreover, through the process of initial market analysis—based on secondary information from a multitude of sources, combined with insights from the theoretical review—a hypothesis was generated. It posited that the area had a significant number of SMEs but very few support service providers, thus potentially creating a gap between demand and available help.

Furthermore, during the primary research process, it was discovered that the majority of participants consisted of microenterprises with modest turnover rates, actively utilizing digital tools in their daily workflows. This finding confirms the initial analysis's insight about the area hosting numerous microenterprises. However, it slightly diverges from expectations gained during the literature review, which revealed that the level of information technology utilization was generally low in SMEs.

Additionally, many regarded their company's IT infrastructure as adequate for current and future needs, possessing a good level of skill in using the technologies they owned. However, cybersecurity threats were viewed as a significant concern. A large majority of participants were found to be also very cost-averse, unwilling to invest in outsourced IT support services primarily for this reason. In addition, many also expressed concerns about becoming too dependent on a service provider, which also hindered their willingness to adopt such services. Nonetheless, the perceived benefits of outsourced IT services—such as cost-efficiency, better risk management, and the ability to focus on core business activities—were attractive to many.

However, despite its shortcomings in attaining a sufficient response rate, which slightly hinders the generalizability of the gained results, the primary research revealed that the situation theorized in the earlier hypothesis might not be as dire as initially thought, although the potential for a new IT support service provider, and even more so for a managed services provider capable of offering cost-effective and flexible high-quality services in the area, based on key findings, remains. This underscores the critical importance of the conducted research in uncovering the potential for such services in the area, which can be turned into actionable steps towards the establishment of such services in the proposed market, thus supporting the areas digital growth.

## BIBLIOGRAPHY

- Aaker, D. A., & McLoughlin, D. (2010). *Strategic market management: Global perspectives*. Wiley.
- Abou-Moghli, A. A., & Al-Abdallah, G. M., (2012). Market analysis and the feasibility of establishing small businesses. *European Scientific Journal*, 8(9), 94–113. <https://doi.org/10.19044/esj.2012.v8n9p%25p>
- Albar, A., & Hoque, Md. (2017). Factors affecting the adoption of information and communication technology in small and medium enterprises: a perspective from rural Saudi Arabia. *Information Technology for Development*, 25(2), 1–24. [https://www.researchgate.net/publication/320550263\\_Factors\\_affecting\\_the\\_adoption\\_of\\_information\\_and\\_communication\\_technology\\_in\\_small\\_and\\_medium\\_enterprises\\_a\\_perspective\\_from\\_rural\\_Saudi\\_Arabia](https://www.researchgate.net/publication/320550263_Factors_affecting_the_adoption_of_information_and_communication_technology_in_small_and_medium_enterprises_a_perspective_from_rural_Saudi_Arabia)
- Berisha-Namani, M. (2009). *The role of information technology in small and medium sized enterprises in Kosova*. Fulbright academy conference, 3(9), 1–8. <https://citese-erx.ist.psu.edu/document?repid=rep1&type=pdf&doi=244b773e91e14d00d8eef3742eb-fde4c10712980>
- Bhat, A. (n.d.). *Quantitative Market Research: The Complete Guide*. QuestionPro. <https://www.questionpro.com/blog/quantitative-market-research/>
- Bilbault, E. (2016, February 20). *Digital is the main reason just over half of the companies on Fortune 500 have disappeared since the year 2000*. LinkedIn. <https://www.linkedin.com/pulse/digital-main-reason-just-over-half-companies-fortune-500-bilbault>
- Cornell, J. (2023, June 23). *Help Desk vs Technical Support: What's The Difference?* Pro-Profes. <https://www.proprofesdesk.com/blog/help-desk-vs-technical-support/>
- Cote, C. (2022, March 17). *How to Do Market Research for a Startup*. Harvard Business School Online. <https://online.hbs.edu/blog/post/how-to-do-market-research-for-a-startup>
- Coursera. (2023, November 29). *Market Analysis: What It Is and How to Conduct One*. <https://www.coursera.org/articles/market-analysis>
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). SAGE Publications, Inc. [https://www.ucq.ac.me/skladiste/blog\\_609332/objava\\_105202/fajlovi/Creswell.pdf](https://www.ucq.ac.me/skladiste/blog_609332/objava_105202/fajlovi/Creswell.pdf)
- D'Sa-Wilson, M. (2021, March 1). *Local Market Research: A Comprehensive Guide*. Global Call Forwarding. <https://www.globalcallforwarding.com/blog/local-market-research-a-comprehensive-guide/>

- Ek, J. (2020). *Toimialaraportti: Ohjelmistoala 2020* [Industry Reports: Software Sector 2020] (Publications of the Ministry of Economic Affairs and Employment 2020:6). Valtioneuvosto. <http://urn.fi/URN:ISBN:978-952-327-493-8>
- European Commission. (2020). *User guide to the SME definition*. Publications Office. <https://data.europa.eu/doi/10.2873/255862>
- Evans, M. (2022, January 6). *Qualitative vs. Quantitative market research: Which is best?* Attest. <https://www.askattest.com/blog/videos/qualitative-vs-quantitative-market-research-which-is-best>
- Finnish Government. (2022). *Valtioneuvoston selonteko: Suomen digitaalinen kompassi* [Government report: Digital Compass] (Publications of the Finnish Government 2022:65). Valtioneuvosto. <http://urn.fi/URN:ISBN:978-952-383-906-9>
- Folkes, J. A., (2020). *Strategies Small Business Leaders Implement for Outsourced IT Solutions for Business Sustainability* (9360) [Doctoral dissertation, Walden University]. ScholarWorks. <https://scholarworks.waldenu.edu/dissertations/9360>
- Fonecta. (2023, May 7). *Yleiset sopimus- ja käyttöehdot, palvelukuvaukset*. <https://yri-tyksille.fonecta.fi/kayttoehdot/>
- Freedman, M. (2023, August 31). *How to Conduct a Market Analysis for Your Business*. Business News Daily. <https://www.businessnewsdaily.com/15751-conduct-market-analysis.html>
- Gartner. (n.d.-a). *Managed Service Provider (MSP)*. <https://www.gartner.com/en/information-technology/glossary/msp-management-service-provider>
- Gartner. (n.d.-b). *Digitalization*. <https://www.gartner.com/en/information-technology/glossary/digitalization>
- Greener, S. (2015). *An introduction to Business Research Methods* (2nd ed.). Bookboon. [https://act.edu.et/Library/index.php?p=show\\_detail&id=988](https://act.edu.et/Library/index.php?p=show_detail&id=988)
- Hanafizadeh, P., & Zareravasan, A. (2020). A Systematic Literature Review on IT Outsourcing Decision and Future Research Directions. *Journal of Global Information Management*, 28(2), 160–201. <http://dx.doi.org/10.4018/JGIM.2020040108>
- Harindranath, G., Dyerson, R., & Barnes, D. (2008). ICT adoption and use in UK SMEs: a failure of initiatives? *European journal of information systems evaluation*, 11(2), 91–96. <https://www.researchgate.net/publication/228858188> [ICT adoption and use in UK SMEs a failure of initiatives](https://www.researchgate.net/publication/228858188)
- Hasu, E. (2021). *Digitaalisen investoinnin kannattavuuden arviointi pk-yrityksissä* [Determining the profitability of a digital investment in SMEs] [Master's Thesis, Lappeenranta and Lahti University of Technology]. LUTPub. <https://urn.fi/URN:NBN:fi-fe202102185343>



- Holm, E. (2021). *Introduction to Research Methods*. Bookdown. <https://bookdown.org/ejvanholm/Textbook/>
- Iiskola, M., Hietanen, A., Kärpänen, T., Loikkanen, O., & Mäki, M. (2022). *Ratkaisuja pienyrityksien digihaasteisiin* [Solutions to digital challenges for small entrepreneurs] (Laurea Publications). Laurea-ammattikorkeakoulu. <https://urn.fi/URN:ISBN:978-951-799-655-6>
- Joensuu-Salo, S., Hakola, J., Katajavirta, M., Nieminen, T., Liukkonen, J., Pakkanen, J., & Nummela, J. (2017). *Pk-yritysten digitalisaatio Etelä-Pohjanmaalla* [Digitalization of SME's in Southern Ostrobothnia] (Seinäjoen ammattikorkeakoulun julkaisusarja B. Raportteja ja selvityksiä 125). Seinäjoen ammattikorkeakoulu. <https://urn.fi/URN:ISBN:978-952-7109-63-2>
- Kettunen, S., Joensuu-Salo, S., Mäntysaari, P., Aalto, A., & Katajavirta, M. (2020). *Digitaalisuus muuttaa sosiaali- ja terveysalaa: osaamisen taso eteläpohjalaisissa pk-yrityksissä sekä esimerkkejä uudesta liiketoiminnasta* [Digitalization transforms the social and health sector: the level of competence at South Ostrobothnian SMEs and examples of new business practices] (Seinäjoen ammattikorkeakoulun julkaisusarja B. Raportteja ja selvityksiä 150). Seinäjoen ammattikorkeakoulu. <https://urn.fi/URN:NBN:fi-fe202002125327>
- Kumbakara, N. (2008). Managed IT services: The role of IT standards. *Information management & computer security*, 16(4), 336–359. <https://doi.org/10.1108/09685220810908778>
- Kääriäinen, J., Pussinen, P., Saari, L., Kuusisto, O., Saarela, M., & Hänninen, K. (2020). Applying the positioning phase of the digital transformation model in practice for SMEs: toward systematic development of digitalization. *International Journal of Information Systems and Project Management*, 8(4), 24–43. <https://doi.org/10.12821/ijispm080402>
- Lacity, M. C., Khan, S. A., & Willcocks, L. P. (2009). A review of the IT outsourcing literature: Insights for practice. *The Journal of Strategic Information Systems*, 18(3), 130–146. <https://doi.org/10.1016/j.jsis.2009.06.002>
- Lacity, M. C., Khan, S., Yan, A., & Willcocks, L. P. (2010). A review of the IT outsourcing empirical literature and future research directions. *Journal of Information Technology*, 25(4), 395–433. <https://doi.org/10.1057/jit.2010.21>
- Larja, L., & Räsänen, H. (2019). *Yritysten digitalisaatio ja kasvu : Pk-yritysbarometrin näkökulmia* [Corporate digitalization and growth: perspectives from the SME barometer] (TEM-analyyseja 93/2019). Työ- ja elinkeinoministeriö. <http://urn.fi/URN:ISBN:978-952-327-448-8>
- Lehikoinen, R., & Töyrylä, I. (2013). *Ulkoistamisen käsikirja* [The handbook of outsourcing]. Talentum.
- Management Consulted. (2022, September 22). *Digital literacy as a leadership skill*. <https://managementconsulted.com/digital-literacy/>

- Mander, J. (2022, March 8). *How to use qualitative and quantitative research to your advantage*. GWI. <https://blog.gwi.com/trends/qualitative-vs-quantitative/>
- Market.us. (2023, April). *Forecast size of the managed services market worldwide from 2022 to 2032 (in billion U.S. dollars)*. Statista.
- McKinsey & Company. (2023, June 14). *What is digital transformation?* <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-digital-transformation>
- Mole, K., North, D., & Baldock, R. (2017). Which SMEs seek external support? Business characteristics, management behaviour and external influences in a contingency approach. *Environment and Planning C: Politics and Space*, 35(3), 476–499. <https://doi.org/10.1177/0263774X16665362>
- Moore, J., & Rosin, L. (n.d.). *Managed IT service*. TechTarget. <https://www.techtarget.com/searchchannel/definition/managed-IT-service>
- Murphy, F. (2010). *IT Outsourcing in Small to Medium-Size Enterprises in the Republic of Ireland: An Investigation* [Master's thesis, Galway-Mayo Institute of Technology]. <https://research.thea.ie/handle/20.500.12065/265>
- Murray, J. (2019, March 2). *Market Research for Your Business: Finding Information About Potential Customers and Competitors*. The Balance. <https://www.thebalance.com/market-research-for-your-business-398068>
- Nguyen, P. (2023). *IT Outsourcing: market data & analysis: Market Insights report*. Statista. <https://www-statista-com.libts.seamk.fi/study/84971/it-outsourcing-report/>
- Nieminen, J., & Tolonen, S. (2023). *Alueelliset kehitysnäkymät keväällä 2023* [Regional development prospects in spring 2023] (Työ- ja elinkeinoministeriön julkaisuja 2023:28). Ministry of Economic Affairs and Employment of Finland. <http://urn.fi/URN:ISBN:978-952-327-830-1>
- Northup, G. (2023, July 5). *How To Do a Market Analysis (With Definition and Benefits)*. Indeed. <https://www.indeed.com/career-advice/career-development/how-to-do-a-market-analysis>
- Oh, W. (2008). Firm characteristics and allocation of IT budget to outsourcing. In Aubert, B. A., & Rivard, S. (Eds.), *Information technology outsourcing* (pp. 90–118). Routledge. <https://doi.org/10.4324/9781315703466>
- Parthasarathy, V., & Kumar, V. (2016). Determinants of cloud computing adoption by SMEs. *International Journal of Business Information Systems*, 22(3), 375–395. [https://www.researchgate.net/publication/303767666\\_Determinants\\_of\\_cloud\\_computing\\_adoption\\_by\\_SMEs](https://www.researchgate.net/publication/303767666_Determinants_of_cloud_computing_adoption_by_SMEs)

- Peek, S. (2019, May 1). *How to Conduct a Market Analysis*. U.S. Chamber of Commerce. <https://www.uschamber.com/co/start/strategy/market-analysis-guide-for-business>
- Ramdani, B., Chevers, D., & Williams, D. (2013). SMEs' adoption of enterprise applications: A technology-organisation-environment model. *Journal of Small Business and Enterprise Development*, 20(4). [https://www.researchgate.net/publication/263523634\\_SMEs%27\\_adoption\\_of\\_enterprise\\_applications\\_A\\_technology-organisation-environment\\_model](https://www.researchgate.net/publication/263523634_SMEs%27_adoption_of_enterprise_applications_A_technology-organisation-environment_model)
- Red Hat. (2022, June 27). *What are managed IT services?* <https://www.redhat.com/en/topics/cloud-computing/what-are-managed-it-services#>
- Saggau, C. (2022). *Corporate IT spending on services: Statista trend report on B2B IT services revenues* [Data set] Statista. <https://www-statista-com.libts.seamk.fi/study/117652/corporate-it-spending-on-services/>
- Sanchez, A. R. (2009). *Technical Support Essentials: Advice You Can Use to Succeed in Technical Support*. Apress.
- Shevtsova, H., Shvets, N., Panychok, M., & Sokolova, H. (2020). Digitalization of Small and Medium-Sized Enterprises in Ukraine. *2020 61st International Scientific Conference on Information Technology and Management Science of Riga Technical University (ITMS)*. <http://dx.doi.org/10.1109/ITMS51158.2020.9259313>
- Simplr. (2024). *What Is Technical Support Outsourcing?*. <https://www.simplr.ai/glossary/technical-support-outsourcing>
- Statista. (2023a, November). *Revenue of the IT outsourcing market in Finland from 2019 to 2028 (in million U.S. dollars)*.
- Statista. (2023b, December). *IT outsourcing: Statistics report on IT outsourcing* [Data set]. <https://www-statista-com.libts.seamk.fi/study/21542/it-outsourcing-statista-dossier/>
- Statista. (2023c, December). *IT budgets & investments: Statistics report about Information Technology budgets and investments in the enterprise and corporate world* [Data set]. <https://www-statista-com.libts.seamk.fi/study/71560/it-budgets-and-investments/>
- Statista Market Insights. (2023, December). *Other IT Outsourcing*.
- Statistics Finland. (2023, December 7). *use of information technology in enterprises*. Selected variables: Year, Size category of personnel and Information. [https://pxdata.stat.fi/PxWeb/pxweb/en/StatFin/StatFin\\_ict/statfin\\_ict\\_pxt\\_13vg.px/table/tableViewLayout1/](https://pxdata.stat.fi/PxWeb/pxweb/en/StatFin/StatFin_ict/statfin_ict_pxt_13vg.px/table/tableViewLayout1/)
- Statistics Finland. (2024a, January 15). *Turnover of service industries*. Selected variables: Year, Variable, Information and Industry. [https://statfin.stat.fi/PxWeb/pxweb/en/StatFin/StatFin\\_plv/statfin\\_plv\\_pxt\\_112b.px/table/tableViewLayout1/](https://statfin.stat.fi/PxWeb/pxweb/en/StatFin/StatFin_plv/statfin_plv_pxt_112b.px/table/tableViewLayout1/)

- Statistics Finland. (2024b, February 2). *Kunnittainen toimipaikkalaskuri*. Selected variables: Month, Industry, Municipality, Information and Staff size category. [https://pxdata.stat.fi/PxWeb/pxweb/en/Toimipaikkalaskuri/Toimipaikkalaskuri\\_Toimipaikkalaskuri/tplask\\_toimipaikkalaskuri\\_pxt\\_14ii\\_fi.px/table/tableViewLayout1/](https://pxdata.stat.fi/PxWeb/pxweb/en/Toimipaikkalaskuri/Toimipaikkalaskuri_Toimipaikkalaskuri/tplask_toimipaikkalaskuri_pxt_14ii_fi.px/table/tableViewLayout1/)
- Stubin, T. (2022, June 6). *Näillä it-kumppaneilla on tyytyväisimmät asiakkaat Suomessa (2022)* [These IT partners have the most satisfied customers in Finland (2022)]. Tivi. <https://www-tivi-fi.libts.seamk.fi/uutiset/nailla-it-kumppaneilla-on-tyytyvaisimmat-asiakkaat-suomessa-2022/4f4a064a-7a72-4d58-9e01-c5cd5780d8fc>
- Suomen Yrittäjät. (2023a, September 14). *Pk-yrittäjäbarometri 2/2023*. <https://www.yrittajat.fi/tutkimukset/pk-yrittäjäbarometri-2-2023/>
- Suomen Yrittäjät. (2023b). *Pk-yrittäjäbarometri, syksy 2023 Seuturaportti, Etelä-Pohjanmaan Yrittäjät* [Data set]. [https://www.yrittajat.fi/wp-content/uploads/2023/09/6785\\_pk-baro\\_syksy\\_2023\\_seutu\\_etela-pohjanmaan\\_yrittajat.pdf](https://www.yrittajat.fi/wp-content/uploads/2023/09/6785_pk-baro_syksy_2023_seutu_etela-pohjanmaan_yrittajat.pdf)
- Suomen Yrittäjät. (2023c). *Pk-yrittäjäbarometri, syksy 2023 Seuturaportti, Keski-Pohjanmaan Yrittäjät* [Data set]. [https://www.yrittajat.fi/wp-content/uploads/2023/09/6785\\_pk-baro\\_syksy\\_2023\\_seutu\\_keski-pohjanmaan\\_yrittajat.pdf](https://www.yrittajat.fi/wp-content/uploads/2023/09/6785_pk-baro_syksy_2023_seutu_keski-pohjanmaan_yrittajat.pdf)
- Suomen Yrittäjät. (2023d). *Pk-yrittäjäbarometri, syksy 2023 Seuturaportti, Keski-Suomen Yrittäjät* [Data set]. [https://www.yrittajat.fi/wp-content/uploads/2023/09/6785\\_pk-baro\\_syksy\\_2023\\_seutu\\_keski-suomen\\_yrittajat.pdf](https://www.yrittajat.fi/wp-content/uploads/2023/09/6785_pk-baro_syksy_2023_seutu_keski-suomen_yrittajat.pdf)
- Suvinen, N., Kolehmainen, J., Arrasvuori, J., Mäenpää, M., Tuuri, M., & Yli-Viitala, P. (2023). *Digitalisaatiosta Etelä-Pohjanmaalla: Mahdollisuuksia hyödyntäen ja riskejä halliten* [Digitalization in South Ostrobothnia: Utilizing opportunities and managing risks] (Sente-julkaisu 36/2023). Tampereen yliopisto. <https://urn.fi/URN:ISBN:978-952-03-2955-6>
- Symaps.io. (2022, May 9). *Why and how to conduct a thorough local market research*. <https://symaps.io/why-and-how-to-conduct-a-thorough-local-market-research/>
- Tai-Kuei, Y., Mei-Lan, L., & Ying-Kai, L. (2017). Understanding factors influencing information communication technology adoption behavior: The moderators of information literacy and digital skills. *Computers in Human Behavior*, 71, 196–208. <https://doi.org/10.1016/j.chb.2017.02.005>
- Tan, K., Chong, S., Lin, B., & Eze, U. (2010). Internet-based ICT adoption among SMEs: Demographic versus benefits, barriers, and adoption intention. *Journal of Enterprise Information Management*, 23(1), 27–55. [https://www.researchgate.net/publication/220306408\\_Internet-based\\_ICT\\_adoption\\_among\\_SMEs\\_Demographic\\_versus\\_benefits\\_barriers\\_and\\_adoption\\_intention](https://www.researchgate.net/publication/220306408_Internet-based_ICT_adoption_among_SMEs_Demographic_versus_benefits_barriers_and_adoption_intention)
- Tiwasing, P., Clark, B., & Gkartziou, M. (2022). How can rural businesses thrive in the digital economy? A UK perspective. *Heliyon*, 8(10), 1–8. <https://doi.org/10.1016/j.heliyon.2022.e10745>

- Tran, V. (2022, November 29). *What Are Managed Service Providers (MSPs) for IT?*. Li-on-gard. <https://www.liongard.com/blog/what-are-managed-service-providers/>
- Tuomi, E., & Aittoniemi, T. (2022). *ICT-alan kasvututkimus 2022* [CT Sector Growth Study 2022]. Pro growth consulting oy. <https://www.progrowth.fi/parhaat-kasvun-keinot/>
- Tuovila, A. (2024, February 27). *Sampling: What It Is, Different Types, and How Auditors and Marketers Use It*. Investopedia. <https://www.investopedia.com/terms/s/sampling.asp>
- Twin, A. (2023, April 14). *How to Do Market Research, Types, and Example*. Investopedia. <https://www.investopedia.com/terms/m/market-research.asp>
- U.S. Small Business Administration. (2023, November 8). *Market research and competitive analysis*. <https://www.sba.gov/business-guide/plan-your-business/market-research-competitive-analysis>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122(), 889-901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
- Von Leipzig, T., Gamp, M., Manz, D., Schöttle, K., Ohlhausen, P., Oosthuizen, G., Palm, D., & Von Leipzig, K. (2017). Initialising Customer-orientated Digital Transformation in Enterprises. *Procedia Manufacturing*, 8, 517–524. <https://doi.org/10.1016/j.promfg.2017.02.066>
- Wattal, S. (2020). Maturity Model for IT Managed Services. *IOP Conference Series: Materials Science and Engineering*, 804(1), 012044. [https://www.researchgate.net/publication/342244892\\_Maturity\\_Model\\_for\\_IT\\_Managed\\_Services](https://www.researchgate.net/publication/342244892_Maturity_Model_for_IT_Managed_Services)
- Werber, B., Rajkovic, U., Urh, M., & Žnidaršič, A. (2015). Computer literacy and use of ICT as key factors of micro-enterprise success. *E+M Ekonomie a Management*, 18(2), 165–182. [https://www.researchgate.net/publication/279161168\\_Computer\\_literacy\\_and\\_use\\_of\\_ICT\\_as\\_key\\_factors\\_of\\_micro-enterprise\\_success](https://www.researchgate.net/publication/279161168_Computer_literacy_and_use_of_ICT_as_key_factors_of_micro-enterprise_success)
- Westerman, G., Calmėjane, C., Bonnet, D., Ferraris, P. & McAfee, A. (2011). *Digital Transformation: A Road-Map for Billion-Dollar Organizations* (Report). Capgemini Consulting \& MIT Center for Digital Business. [https://www.capgemini.com/wp-content/uploads/2017/07/Digital\\_Transformation\\_A\\_Road-Map\\_for\\_Billion-Dollar\\_Organizations.pdf](https://www.capgemini.com/wp-content/uploads/2017/07/Digital_Transformation_A_Road-Map_for_Billion-Dollar_Organizations.pdf)
- Yost, J. R. (2017). *Making IT Work: A History of the Computer Services Industry*. MIT Press.
- Zahoor, N., Zopiatis, A., Adomako, S., & Lamprinakos, G. (2023). The micro-foundations of digitally transforming SMEs: How digital literacy and technology interact with managerial attributes. *Journal of Business Research*, 159, 1–12. <https://doi.org/10.1016/j.jbusres.2023.113755>

## **APPENDICES**

**Appendix 1. Number of business establishments in a given municipality.**

**Appendix 2. Used questions in the questionnaire.**

**Appendix 3. Questionnaire invitation message.**

**Appendix 1. Number of business establishments in a given municipality (Statistics Finland, 2024b).**

	Toimipaikkojen lukumäärä							
	0-4 henkeä	5-9 henkeä	10-19 henkeä	20-49 henkeä	50-99 henkeä	100-149 henkeä	150-199 henkeä	200-249 henkeä
2024M01								
Yhteensä								
Alajärvi	638	48	23	5	6	0	0	1
Alavus	681	63	26	15	5	0	0	0
Evijärvi	211	11	6	1	0	1	0	0
Halsua	95	2	2	2	0	0	0	0
Kannonkoski	94	5	0	2	1	0	0	0
Karstula	260	19	11	3	1	1	0	0
Kauhava	1,177	75	37	26	12	2	1	1
Kaustinen	301	31	17	8	1	0	0	0
Keuruu	539	47	22	13	4	1	0	0
Kinnula	73	13	4	0	0	0	0	0
Kivijärvi	56	4	2	0	0	0	0	0
Kuortane	249	14	7	8	4	0	0	0
Kyyjärvi	77	6	1	0	0	1	0	0
Lappajärvi	196	11	6	5	0	0	0	0
Lapua	899	66	27	21	4	1	1	0
Lestijärvi	46	1	1	1	0	0	0	0
Multia	96	5	2	3	1	0	0	0
Perho	149	18	1	3	1	0	0	0
Pihtipudas	254	25	8	5	1	0	0	0
Reisjärvi	157	13	5	6	0	0	0	0
Saarijärvi	565	39	19	12	2	0	0	0
Soini	204	13	6	4	0	0	0	0
Toholampi	201	11	5	1	2	0	0	0
Uurainen	198	9	5	1	0	0	0	0
Veteli	218	16	11	3	0	0	0	0
Viitasaari	346	30	16	6	4	1	0	0
Vimpeli	199	16	8	0	1	1	0	0
Ähtäri	399	31	23	10	1	2	0	0
Äänekoski	767	71	49	18	5	1	0	3

## Appendix 2. Used questions in the questionnaire.

Comprehensive list of questions from the questionnaire (Note: The original questionnaire was in Finnish, intended for Finnish participants. What follows is a translation.):

1. What is your current position in the company?
  - Owner / CEO.
  - Manager.
  - Employee.
  
2. In which municipality or city is your company located?
  - Alajärvi
  - Alavus
  - Evijärvi
  - Halsua
  - Kannonkoski
  - Karstula
  - Kauhava
  - Kaustinen
  - Keuruu
  - Kinnula
  - Kivijärvi
  - Kuortane
  - Kyyjärvi
  - Lappajärvi
  - Lapua
  - Lestijärvi
  - Multia
  - Perho
  - Pihtipudas
  - Reisjärvi
  - Saarijärvi
  - Soini
  - Toholampi
  - Uurainen



- Veteli
  - Viitasaari
  - Vimpeli
  - Ähtäri
  - Äänekoski
3. Which of the following categories best describes your company's main industry?
- Industry.
  - Retail.
  - Service sector.
4. How many employees (including the entrepreneur) does your company currently have, in the year 2024? Choose the closest option:
- 0-4.
  - 5-9.
  - 10-19.
  - 20-49.
  - 50-99.
  - 100-149.
  - 150-199.
  - 200-250.
5. Choose from the following options, which best describes your company's turnover during the last fiscal year:
- 100 000 €.
  - 100 000 - 500 000 €.
  - 500 000 - 1 million €.
  - 1 - 2 million €.
  - 2 - 10 million €.
  - More than 10 million €.
6. Below are various statements about the use of digital tools, the current state of information technology, and expertise in your company. For each question, choose the

option that best describes your company's current situation. On the scale, response option **1** = Strongly disagree. Response option **5** = Strongly agree.

	1	2	3	4	5
We use digital tools (e.g., computers, smartphones) in our work daily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The current state and functionality of my company's information technology (hardware, software, and security) are at an excellent level.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our company's current IT infrastructure, including computers, printers, network equipment, and their management systems, is sufficient for our business needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We give high priority to investing in information technology from the perspective of our company's development and growth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our company faces significant challenges in the <b>use</b> of technologies (such as computers and their peripherals).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our company faces significant challenges in <b>maintaining</b> the used technologies (such as computers and peripherals).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I classify <b>my personal</b> proficiency level in the use and management of digital devices, such as computers, as high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I classify <b>our employees'</b> proficiency level in the use and management of digital devices, such as computers, as high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Which of the following best describe your biggest concerns regarding your company's information technology? Choose all applicable options.
- Security risks and threats.
  - Outdated hardware or software.
  - Poor hardware performance.
  - Maintenance of hardware and infrastructure.
  - Data management and backup.
  - Compatibility issues between different systems.
  - Costs and budget constraints.
  - Other.

8. Does your company have an internal IT support staff?
- Yes.
  - No.
9. Is your organization currently using outsourced IT support services?
- Yes.
  - No.
  - We have used them, but we no longer do.
  - Consideration is being given to using them.
10. Can you specify the reasons why your organization is no longer using outsourced IT support services at this time? Choose all applicable options:
- We have decided to build our own IT support team, which better understands our organization's needs and can provide customized solutions.
  - We wanted to develop internal expertise and build knowledge that stays within our organization.
  - We believe that internal IT support can respond more quickly and effectively to daily challenges and problems.
  - Internal IT support allows for better integration into the organization's business processes and strategies.
  - We found that using internal resources instead of outsourcing is more cost-effective in the long term.
  - Concerns about the level of cyber security of external service providers led to the decision to manage IT support services internally.
  - We felt that outsourced support did not meet our expectations in terms of quality, response speed, or expertise.
  - The business model or needs of the organization have changed, and outsourced IT support no longer fits our current needs.
  - Other.
11. Below are various statements about your company's relationship with outsourced IT support services. For each question, choose the option that best describes your company's current situation. On the scale, response option **1** = Strongly disagree. Response option **5** = Strongly agree.

	1	2	3	4	5
We feel that there is enough skilled help available in our area when we encounter problems with technology, such as computers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are very aware of the existence of outsourced IT support services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are very aware of the benefits that outsourced IT support services offer to our company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We consider IT support services to be very important for the success of our company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our company would be very interested in outsourcing its IT support services to a specialized IT company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are very willing to invest more in outsourced IT support services if it would directly contribute to business growth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If outsourced IT support services could be provided in a cost-effective manner, it would positively influence our willingness to utilize such services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We consider the importance of high-quality services and good customer service to be very important when considering the outsourcing of IT support services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Which of the following factors are potential barriers when you consider outsourcing IT support services for your company? Choose all applicable options:

- Costs.
- Uncertainty about the adequacy of the service provider's expertise.
- Security and privacy issues.
- Dependency on the service provider.
- Quality control of the service.
- Delays and communication challenges.
- Finding a suitable service provider.
- There is no service provider in my area.
- Specific business requirements.
- Other.

13. What factors attract you to outsource your IT support services to a professional specialized in such services? Choose all applicable options:

- Cost efficiency.
- 24/7 support.
- Simplified management and maintenance of your own IT infrastructure.
- Service flexibility and scalability.
- Improved service reliability and availability.
- Better security and risk management.
- The opportunity to use the latest technologies and expertise.
- Ability to focus on the company's core business.
- Quality assurance: Professionals ensure that IT support and services are consistently high-quality.
- Compliance with regulations and requirements.
- Faster problem resolution.
- Other.

### Appendix 3. Questionnaire invitation message.

(Note: The original message was in Finnish, intended for Finnish participants. What follows is a translation.):

Hello,

I would like to invite you to participate in a survey that is part of my bachelor's thesis.

You can participate in the survey via the following link: [Link to the questionnaire]

This survey is a central part of my broader research, which aims to address the market situation of IT support services, as well as profitability of such services at the junction point of three regions in Central Finland, South Ostrobothnia, and Central Ostrobothnia. Your views and experiences are considered to be very valuable and useful, and they will help in gaining a better understanding of the use of outsourced IT support services by SMEs, as well as the challenges the companies face in relation to these services, alongside with their attitudes towards said services.

The survey is designed to be anonymous and only takes a few minutes to complete. All responses are treated confidentially and will not be disclosed to third parties. The information gathered from the survey is collected solely for my thesis, which maps out the market situation of IT support services in your area. **No information that could identify a company is collected. In addition, the collected data will be disposed at the end of the thesis process.**

By participating in the survey, you are providing important information for the research, which may benefit the development of outsourced IT support services for SMEs more broadly. I greatly appreciate your time and contribution to this survey. The survey will remain open until **March 22, 2024.**

Thank you in advance for your participation and your time.

Best regards,