

Senja Hokkinen

Cost accounting methods supporting public sector
organizations and decision-making: an analysis of the
Finnish rescue services

Master's thesis in accounting

Supervisor: Matti Skoog

Faculty of Social Sciences,

Business and Economics

Åbo Akademi University

Turku 2021

ÅBO AKADEMI UNIVERSITY – Faculty of Social Sciences, Business and Economics

Abstract for master's thesis

Subject: Master's programme in Business Administration: Accounting and control	
Writer: Senja Hokkinen	
Title: Cost accounting methods supporting public sector organizations and decision-making: an analysis of the Finnish rescue services	
Supervisor: Matti Skoog	
<p>Abstract: Introduction: This thesis will examine the purchaser-provider model, a governance model that has its origins in the New Public Management approach, which is used by the Finnish Rescue Services, to understand how public sector service organizations can develop their cost accounting methods to support the purchaser-provider model. The purchaser-provider model needs precise cost information of the providers' operations so that the services can be purchased for a realistic price by the purchaser. The Finnish parliament's health and social services reform will also initiate changes in the field of rescue services. The primary funding responsibility for the rescue services would be transferred from the municipalities to the state through the reform. Therefore, it is crucial to understand how comparable the cost data between the rescue service departments are currently. Method: The study in this thesis will be conducted as a case study of the Finnish Rescue Services. The study aims to understand how the rescue service departments could benefit from developing their cost accounting methods, as the purchaser-provider model being used for the governance of the rescue service departments requires accurate cost data for decision-making. Results: The financial data were analyzed and presented in the form of figures to obtain an overall understanding of the current economic situation of the regional rescue service departments. The answers from the questionnaire were also analyzed and compared to examine the cost data of the departments more thoroughly. Discussion: In the analysis, variations in the cost data between the departments were identified. Especially in the supporting activities, significant variations were found, as most of the rescue service departments receive supporting activities from the owner municipality. The municipality does not necessarily charge the department the total price, or in some cases, anything at all, for these services. This can lead to hidden costs within the municipality enterprise group, and that all the actual costs of the departments are not present in the cost data. Therefore, the field of rescue services should develop their reporting methods and create standardized methods for the entire field so that the information is comparable and supports the decision-making process. Based on the analysis, it also concluded that managerial and cost accounting methods could serve public sector organizations and administrators by providing valuable information for decision-making purposes.</p>	
Keywords: Public Sector Service Organizations, New Public Management, Purchaser-Provider Split Model, Cost Accounting, Finnish Rescue Services	
Date: 17.05.2021	Number of pages: 73 (text)

Table of Contents

1. Introduction.....	1
1.1. Background.....	2
1.2. Problem	5
1.3. Purpose of the study	6
1.4. Limitations of the study	7
1.5. Disposition of the study	8
2. Public Sector Municipal Organizations in Finland	9
2.1. Municipal public sector organizations.....	9
2.2. Public sector and municipal financial reporting in Finland.....	10
2.3. New Public Management, management accounting and the public sector in Finland.....	11
2.4. Rescue Service in Finland	13
2.4.1. Service Standard Decision.....	15
2.5. Purchaser-provider split	17
2.6. The health and social services reform.....	19
2.6.1. Intermunicipal contracts and public partnerships in local service provision	20
2.7. Finnish National Rescue Association SPEK-study	21
3. Accounting information for decision-making.....	24
3.1. Accounting information in decision-making.....	24
3.2. Cost accounting.....	27
3.3. Cost accounting in the public service sector.....	28
3.4. Costing methods.....	30
3.4.1. Traditional cost accounting	30
3.4.2. Activity-based costing.....	31
3.4.3. Time-driven activity-based costing	33
3.4.4. Performance-Focused Activity Based Costing	36
3.4.5. Ratio of cost to charges	36
3.4.6. Cost-based pricing in the public service sector	37
3.5. Management accounting and strategic decision-making	38

3.6.	Discussion on literature review	38
4.	<i>Methodology and data.....</i>	40
4.1.	Research methodology	40
4.1.1.	Case study method.....	40
4.1.2.	Financial statement and document analysis.....	41
4.1.3.	Questionnaire	44
4.1.4.	Additional statistical data	44
4.1.5.	Sample.....	45
5.	<i>Results and analysis</i>	47
5.1.	Financial analysis of the current economic state	47
5.1.1.	Cost analysis.....	47
5.1.2.	Income analysis	53
5.2.	Results from the questionnaire.....	60
5.3.	Discussion on findings	63
6.	<i>Conclusions</i>	69
6.1.	Limitations of this study and suggestions for further research.....	70
	<i>Swedish summary – Svensk sammanfattning.....</i>	<i>71</i>
	<i>References.....</i>	<i>74</i>
	<i>Appendix.....</i>	<i>80</i>
	KYSELYRUNKO / TP 9, TALOUS JA KUSTANNUSLASKENTA 2021	80
	QUESTIONNAIRE FRAMEWORK / FINANCE AND COST ACCOUNTING 2021	83

Table of Figures

<i>Figure 1: The distribution of power between the actors in the Finnish Rescue Service</i>	<i>14</i>
<i>Figure 2: Total costs (in 1 000 €) of the rescue service departments.....</i>	<i>48</i>
<i>Figure 3: Share of costs for legally required tasks of total costs</i>	<i>49</i>
<i>Figure 4: Comparison of total costs per department in 2010 and 2019 (in 1 000 €)</i>	<i>51</i>
<i>Figure 5: Cost structure of the regional rescue services based on all the tasks</i>	<i>52</i>
<i>Figure 6: Total incomes (in 1 000 €) of the rescue service departments.....</i>	<i>54</i>

<i>Figure 7: Share of incomes from legally required tasks of total incomes</i>	<i>56</i>
<i>Figure 8: Comparison of total incomes per department in 2010 and 2019 (in 1 000 €)</i>	
<i>.....</i>	<i>57</i>
<i>Figure 9: Income structure of the regional rescue services</i>	<i>59</i>

1. Introduction

Many reforms in the public sector have been inspired and influenced by methods originating from the New Public Management approach. For example, Kokko, Auvinen, Sajasalo and Takala (2018) as well as Smith and Rauhut (2019), have studied and found that the New Public Management approach has also influenced the Finnish public sector, and that many reforms in Finland are to a certain degree based on the governance methods and strategic goals of the New Public Management approach. The health and social services reform proposed by the Finnish parliament is an example of this approach and a reform inspired by New Public Management theories. The health and social services reform suggests the creation of new welfare counties that take over the responsibility of organizing and providing social and health care, as well as rescue service operations. In this reform, the funding responsibility for the rescue services would also be transferred from the municipalities to the state.

The purchaser-provider model is a governance method that originates from the New Public Management approach. Especially within healthcare, this model has been widely implemented and studied (Siverbo, 2004). The Finnish rescue services are also governed by the purchaser-provider model, as the municipality is legally obliged to organize rescue services in its assigned area, and the municipalities in Finland purchase these rescue services from the local rescue service departments in accordance with the purchaser-provider split model. The municipality and the local rescue service department agrees on the provision of these services in the Service Standard Agreement. (SM018:00/2012)

The purchaser-provider model requires accurate cost data to be able to calculate the correct pricing for the services being purchased. Määttä (2013) has studied the economic state of the Finnish rescue services in 2010. Thereafter, little research regarding the rescue services and their financial situation has been conducted. Raulinajtyš-Grzybek (2014) also highlights that for pricing based on cost information to work, the cost data must be calculated using similar methods amongst all the providers. Detailed knowledge regarding the cost structure and the cost drivers within

public sector services enables more focused policy making and better use of public resources.

Therefore, this thesis will conduct a case study including the 22 Finnish rescue services, which function under the local municipalities, to study the current state of their financial reporting and costing methods, and to understand how these could be developed. As little research has been conducted in the field of rescue services from an economic standpoint, this study will provide valuable information regarding the state of this. This study will also provide valuable insights into how public sector service organizations can develop their costing methods, from a different standpoint than previously studied, as these studies have often focused on similar issues but from a healthcare perspective. The study is conducted in collaboration with the Ministry of the Interior as a part of their research project Rescue Service and Civil Preparedness Performance and Design Criteria (fin. *Pelastustoimen ja siviilivalmiuden suorituskyky ja suunnitteluperusteet–hanke*).

The study in this thesis will be conducted as a financial analysis by analysing the financial data of the Finnish rescue services. This will be carried out in combination with a qualitative questionnaire that gathers information about the more precise costs of the different rescue service departments, to understand the financial data of the rescue service departments more profoundly and understand how this can be developed. The financial data of the rescue service departments will also be compared, to understand whether the financial data are comparable between the departments. As Raulinajtys-Grzybek (2014) points out, it is important for the cost data to be calculated in a similar manner between providers. By analyzing the situation of the Finnish rescue services this thesis aims to provide insight into how public sector organizations, especially those utilizing the purchaser-provider model, can benefit from the use of costing methods.

1.1. Background

Leading an organization through changes or changing environments requires multifaceted information and awareness of the organization's operations. Management

accounting and the information retrieved from accounting information can be utilized in various ways by the management of an organization to help them make strategic and well-informed decisions that steer the organization in the sought-after direction. (Tammi, 2006)

Operations and finances are closely related aspects within organizations. The management needs correct information about the costs of the operations so that the costs can be monitored and controlled. This is necessary for the financial management of an organization. In these situations, cost accounting and different managerial accounting methods can help the management of organizations gather useful information about the organization's operations that can be used for decision-making and management. Cost accounting focuses on where in the operations the costs are caused and understanding the costs of the operations better. By focusing on where the costs of the operations originate, the management can expose possible challenges in the operations of the organization, and therefore, this information can bring value to the management of the organization. (Määttä, 2013)

The public sector in Finland is facing significant changes through the health and social services reform that aims to redefine the structure of the social welfare and health care service system in Finland (Finnish institute for health and welfare, 2020). The reform will cause substantial changes to the social welfare and health care field in Finland. Therefore, the management of the organizations in this field will have to lead the organizations through this reform and ensure that the operations and services provided will meet the quality standards and yet remain efficient and operate effectively.

The 22 rescue service regions in Finland are responsible for organizing and maintaining the rescue service operations within their region. These independent rescue services function under the local municipalities, which govern the local rescue services (STM055:00/2019). Through the health and social services reform, the Finnish state is aiming to redefine the rescue service and, in this way, improve the service that the local rescue services can provide. Through the health and social services reform, the executive power of the state is strengthened regarding the independent rescue services and municipalities, and the state's governance over the rescue services will be amplified. This reform aims to provide more streamlined and

equal rescue services nationwide, which is achieved by strengthening the state's governance of the independent rescue services. The health and social services reform would move the responsibility of the rescue services from the municipalities to the larger welfare counties defined in the health and social services reform. (STM055:00/2019)

There is little extensive research on the financial aspects of the rescue services in Finland. The Finnish National Rescue Association (SPEK) conducted a research project in 2010 analyzing the current situation of the Finnish rescue services. In this research project, Jaana Määttäälä conducted a financial analysis of the rescue services for 2007-2010. This study was conducted to obtain a more solid base for decision-making than before regarding the rescue service field in Finland. The research project also conducted an overall analysis of the rescue service in Finland. It provided information about the function of the rescue services, statistics about their operations and assets, information about their financial situation and cost structure, and human resources. (Mankkinen, 2013)

As the field of rescue service in Finland focuses on providing rescue services for the population, the focus on financial and economic aspects has not been a priority in the field. There are limited studies and research conducted on the economic situation and development of the rescue services in Finland. After the study by Jaana Määttäälä for the (Mankkinen, 2013) research project, no further financial or economic studies have been conducted to analyze the financial situation of the rescue services. The field is therefore lacking in studies about the current financial situation of the rescue services, according to Jaana Määttäälä from The Ministry of the Interior's Department for Rescue Services (personal communication, 8 October 2020).

Economic and financial information is vital in every field of business when it comes to decision-making (Cepêda & Monteiro, 2020). Therefore, this type of information is of value to the rescue services and their administrators. It will help in the decision-making process and provide a more substantial knowledge base for decision-making.

1.2. Problem

Globally many factors influence changes in the public sector environment. The public sector organizations must learn to operate in a continuously changing field, where the business landscape is under constant changes and challenges (ACCA, 2016). To manage the public sector organizations effectively and ensure the quality of the services they provide, it is of great importance that the management of public sector organizations utilizes various information sources to support the decision-making processes. Thus, management accounting systems that give insight into the operations of the organizations can help the leaders do this.

As the health and social services reform in Finland will initiate changes to the rescue service field (STM055:00/2019), it is beneficial to analyze the current use of cost accounting methods and the financial information. Moreover, it is essential to look at how these methods can be utilized more efficiently and how they can be improved. Thorough knowledge about the financial performance and situation of the rescue service is of great importance before making substantial changes in the field, as economic factors provide valuable information to decision-makers about the performance and operations of the business (Cepêda & Monteiro, 2020). Through the health and social services reform, the executive power of the state would also be strengthened. Therefore, it is relevant to understand whether the financial data and reporting of the 22 rescue service departments are comparable and how the current situation looks. Without taking economic perspectives into account when making changes to the operations and processes of the rescue services, new decisions could harm the operations if they have not considered the operations from all crucial aspects.

As Lewis (1960) states, the purpose of financial analysis is to analyze the financial information and transform it into a format that management can use for decision-making, making sure that the management of an organization understands the accounting information. Moreover, this thesis aims to analyze how the public sector and field of rescue services can improve the utilization of cost accounting information and managerial accounting procedures to support the organizations' management and ensure effective and strategic leadership that ensures the quality of the rescue services.

The purchaser-provider split between the municipality and the local rescue service department means that the municipality purchases the rescue services from the rescue service department for a set price. The problem that occurs is how they can verify what the purchased services cost and what their price is.

1.3. Purpose of the study

The purpose of this thesis is to study how public sector service organizations implementing the purchaser-provider model can develop their cost accounting methods to support decision-making. As the purchaser-provider model, a governance method originating from the New Public Management approach needs accurate cost data to make correct and realistic pricing decisions. Therefore, functioning cost accounting methods are necessary for this governance model.

The study in this thesis will be conducted as a case study of the rescue services in Finland to analyze the current economic state and state of the financial reporting methods of the rescue services in Finland and their used cost accounting methods. By conducting a case study, this thesis aims to determine if the costing methods used within this field serve their purpose or how these could be developed to obtain more valuable information for decision-making through cost accounting methods. As the purchaser-provider split calls for accurate cost data to support pricing decisions, this thesis aims to analyze whether this information, particularly the connection between the operations and the price of these, can be retrieved from the information used for decision-making in the negotiations. As the methods used within the rescue services in Finland have not been reviewed systematically in the past decade, and there is a lack of financial studies within this field, it is necessary to analyze the situation to understand it more profoundly to develop it.

By analyzing the field of rescue services in Finland through this case study, this thesis also aims to determine how public sector service organizations can benefit from cost accounting methods and greater cost awareness and, with the help of this information, improve the management and strategic leadership of the organizations.

The research questions for this study are the following:

- What is the current economic state of the Finnish rescue service and the local rescue service departments regarding their financial reporting methods?
- Is the financial and economic information received from the local rescue services serving its purpose to function as a base for decision-making and management in the municipalities who are the purchasers of the rescue services?
- How can the Finnish public sector rescue services develop their financial information to support decision-making more thoroughly?

This thesis aims to obtain a thorough overview of the current situation of the rescue services in Finland and understand how the rescue service departments could develop their financial information used for decision-making through the research questions mentioned above.

1.4. Limitations of the study

This study will examine the local rescue services operating in Finland under the local municipality, and therefore, this study is limited to Finnish rescue services only. In this thesis, only the rescue service organizations and their operations will be analyzed to understand how they can benefit from cost accounting and cost-based pricing methods. As the study object is the rescue services field alone, the results are only based on the rescue services and their situation. However, the results could indicate how other public sector service organizations with similar operations and administration could benefit from similar methods.

The Service Standard Decision that works as the framework defining the operations and service level of the local rescue services contains other operational aspects as well. However, for this thesis, the financial side of this will be focused on.

1.5. Disposition of the study

This introduction chapter introduces the background to the problem that will be examined, clarifies the problem area, and explains the purpose and aim of the study in this thesis. Under the limitations of the study chapter, the framework is presented within which this thesis is conducted.

The second chapter provides the theoretical background for this thesis. It presents relevant theoretical background material regarding municipal public sector organizations, the New Public Management approach, the purchaser-provider model, the Finnish rescue services, and previous studies on the rescue services and their economic situation.

The third chapter presents prior research relevant to this thesis's topic regarding accounting information for decision-making, cost accounting and cost-based pricing, public sector organizations, and their specialties. It serves as the theoretical framework, which functions as a base for the empirical part, which follows later in this thesis.

The fourth chapter presents the research method used for the empirical analysis in this thesis and provides more in-depth information about the data used for the analysis.

The fifth chapter presents the analysis results and provides a discussion about the findings from the study.

The sixth chapter concludes the thesis and its findings and provides a summary of the results.

2. Public Sector Municipal Organizations in Finland

In this chapter, relevant background theory will be presented to provide the foundation for the theoretical framework for this thesis. Theory about municipal public sector organizations and their governance will be discussed, as well as the Finnish rescue services and their financial structure will be presented. Furthermore, information about the health and social services reform and how this reform will affect the rescue services will be considered.

2.1. Municipal public sector organizations

Public sector municipal organizations differ from private sector organizations as they are a not-for-profit type of organizations, and therefore their primary goals are different from profit-oriented organizations. The function and purpose of public sector organizations are defined in legislation regarding their primary activities (Tammi, 2006). For example, the Rescue Act (379/2011) defines the rescue service's primary activities and operations, which they are required to perform by law.

Even though public sector organizations are non-profit organizations, this does not mean that these organizations do not have any financial or economic goals in place. As public sector organizations are funded by public means, it is expected that the operations of these organizations are produced and conducted cost-effectively, with often-times strict spending budgets, as the public means are limited and supposed to be sufficient for many purposes. (Tammi, 2006; Association of Finnish Municipalities, 2021)

As municipal organizations have not aspired to be profit-maximizing organizations, they have not experienced the same need as profit-oriented organizations to develop functioning cost accounting systems. As the municipal public sector organizations are operating in a changing environment, this fact has changed, which requires cost accounting methods to lead these organizations in this environment. (Tammi, 2006)

As the municipalities in Finland purchase the rescue services from the local rescue services through the purchaser-provider model, accurate cost information is needed to base pricing decisions. To be able to retrieve accurate cost information, cost accounting methods are needed to gather this information.

2.2. Public sector and municipal financial reporting in Finland

As the regional rescue services function under the municipalities, they function in the public sector and are funded by public means by tax incomes. Therefore, public sector corporations funded by public means are obliged to report in the financial statements how the public means have been spent and to which posts and expenses they have been allocated. (Luoma, Oulasvirta & Näsi, 2007, p. 37)

The requirements for the financial reporting of municipal organizations are defined by the Municipal Section of the Accounting Board that operates under the Ministry of Economic Affairs and Employment. The requirements are defined in the general instructions regarding the financial statements of municipalities and joint municipal authorities (fin. *Yleisohje kunnan ja kuntayhtymän tilinpäätöksen ja toimintakertomuksen laatimisesta*) (Association of Finnish Municipalities, 2020).

The purpose of the financial statements of the municipalities, or joint municipal authorities, is to give an accurate and fair view of the organization's financial situation in the same manner as for private sector organizations. In the Local Government Act (410/2015), it is prescribed that the following aspects should be included in the financial statements of municipalities: a balance sheet, income statement, and cash flow statement, with appended notes, as well as a budget review and a report on operations. In addition to this, the municipalities that compose a local authority corporation together with the municipality's subsidiaries must compose consolidated financial statements. The municipality must include a review of the internal control and essential identified needs for development in the report on operations.

The aim of the general instructions regarding the requirements for the financial reporting made by the Municipal Section of the Accounting Board is to improve the

comparability of the municipalities' financial statements and reports by standardizing their contents and structure and the format in which these are presented. (Association of Finnish Municipalities, 2020).

2.3. New Public Management, management accounting and the public sector in Finland

In the late 20th century, the criticism towards the inefficient management of public sector organizations led to a movement known as New Public Management. In this approach, influences from the private sector were introduced in the management of public sector organizations to tackle the challenges that were related to the traditional public sector management style. Themes from the private sector, such as privatization, decentralization, and goal-oriented management styles, were introduced to the management of public sector organizations to improve the public sector's effectiveness. (Van Helden, 2005)

New Public Management is hence a management method that draws its inspiration from management methods that traditionally originate from the private sector business environment. These have been introduced in public sector organizations for management purposes through the New Public Management approach, and thereby this approach has influenced public sector administrative reforms. (Dunleavy & Hood, 1994)

New Public Management methods are believed to be a way of achieving improved effectiveness in the public sector. They have, therefore, been considered a functioning tool for these organizations and their management and organization. In Finland, influences from the New Public Management approach have led to reforms and reconstructions of the public sector and how the services provided by the public sector actors are organized and administrated. Therefore, even the Finnish public sector developments have drawn inspiration from New Public Management. Many reforms regarding the administration of public sector services have gone towards methods familiar from New Public Management, so this can be seen as a force influencing the public sector and its reforms in Finland. (Kokko, Auvinen, Sajasalo & Takala, 2018)

Smith and Rauhut (2019) have studied the implementation of New Public Management in Finland and public sector reforms. The authors (Smith & Rauhut, 2019) concluded that a weakened form of New Public Management had been implemented in Finland, with national concerns considered in the implementation, instead of following a globally agreed approach for implementation. Clear influences from the New Public Management approach implemented in the Finnish public sector are service efficiency promotion and the competition aspect.

Lægreid and Christensen (2007) have also examined post-New Public Management reforms that have taken place after the end of the 20th century. Some researchers have suggested that the era of New Public Management reforms is over. In contrast, other researchers believe that New Public Management is not over, but it has evolved and changed into new forms of reforms. Lægreid and Christensen (2007) state that they believe in the changed form of New Public Management reforms. Therefore, the earlier forms of New Public Management reforms have set the foundation for the new version of New Public Management.

Lægreid and Christensen (2007) discuss the fact that the demand for transparency has risen, and more elaborated reports on, for example, performance and organizational arrangements are requested. The value for transparency is also prominent in the Finnish public sector and its organizations, which are expected to be transparent about their operations and spending (Moisio, 2015).

Cuganesan, Dunford, and Palmer (2012) have also studied strategic management accounting in the public sector, and how the pressure from reforms in the public sector has highlighted the need for strategic management in the public sector as well, which traditionally is considered a management style from the private sector.

The management style of New Public Management has also received some criticism, like all variants of management systems have. Dunleavy and Hood (1994) highlight that there is most likely not one New Public Management model that globally suits all public sectors, but various versions of this model are designed to suit different concerns and needs. Also, Zia and Zeb Khan (2014) discuss some of the criticism that

New Public Management practices have received. One major aspect of criticism directed towards New Public Management is that private sector and public sector organizations are different in their primal nature and that this could weaken the public sector and its core values and principles. In the public sector, the organizations' external forces often influence the organizations' management systems. Therefore, these tools might not be as effective in these organizations, as they might not be as free to decide on performance measurement and accountability as private sector organizations, which are not influenced by political forces in the same manner.

2.4. Rescue Service in Finland

The scope and duties of the rescue services authorities in Finland are prescribed in the Rescue Act (379/2011). This act presents general duties and provisions for all individuals, corporations, and organizations in society, not merely legislation for the rescue service authorities, as there are obligations to follow regarding preventive, preparing, and limiting measures and the duty to act in case of an emergency.

The Ministry of the Interior is responsible for directing and steering the rescue services and has the oversight responsibility regarding the quality and extent of the services. The Ministry of the Interior is also responsible for the organization of rescue services on a national level and ensuring preparedness. It is also in charge of the coordination of different parties within the field of rescue services and other provisions given by the government regarding the rescue services if needed. (379/2011)

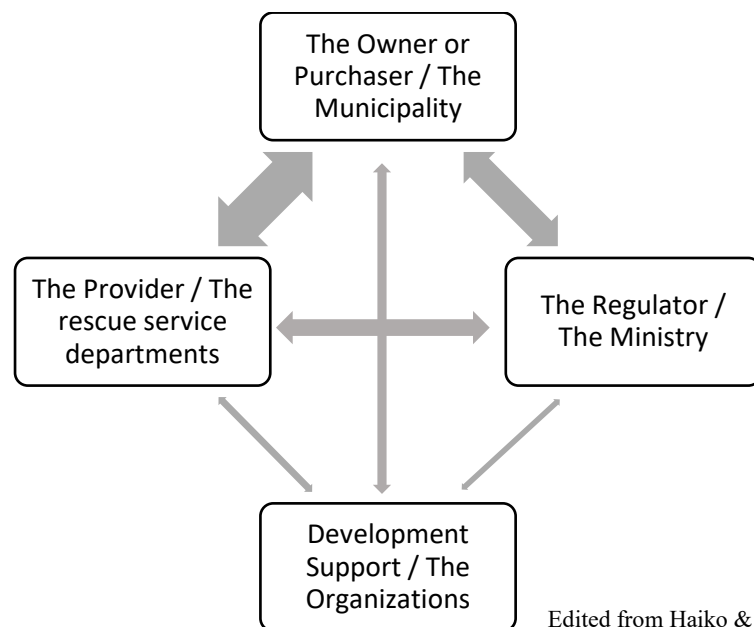
There are also regional state administrative agencies responsible, among other things, for supervision and oversight of the local rescue services and ensuring that the quality and coverage are on an acceptable level within their area of responsibility. (379/2011)

The municipalities are responsible for the rescue services, and this responsibility is shared within the rescue service regions that the government defines. The municipalities that are part of a rescue service region must have a consensus on how the rescue service is organized within their rescue service region. (379/2011)

Within the rescue service region, there must be a rescue department that executes and performs the rescue service duties of this regional rescue service. Assistance from contract fire brigades or other rescue service organizations is allowed if there is an agreement on the execution of the operations. (379/2011)

The regional rescue services are responsible for the standard of the rescue service and must provide proper guidance and information within their area of responsibility. This aims to help prevent accidents and fires, prepare for appropriate action in situations of accidents, and, therefore, limit the possible consequences the accidents may cause. Moreover, the regional rescue departments oversee the labor conducted as a part of the rescue operations and the warning of the population in dangerous situations that require this. In some cases, additional tasks are carried out by the rescue departments if agreed upon or ordered by the government. For example, the rescue departments can also conduct emergency medical care tasks and oil spill response tasks. (379/2011)

Figure 1 summarizes the distribution of power between the rescue service departments, the municipalities, the ministry, and the organizations in the field. The figure is edited and adapted from Haiko and Paloposki's (2007, p. 9) figure.



Edited from Haiko & Paloposki (2007, p. 9)

Figure 1: The distribution of power between the actors in the Finnish Rescue Service

In Figure 1, the distribution of power between the actors in charge of the Rescue Services in Finland is exemplified. In the figure, the flow of power is visualized by the arrows between the actors. The size of the arrow shows the amount of power that flows between the actors. Thus, it represents the relation of power and how power is carried out in the field. (Haiko & Paloposki, 2007, p. 9)

The municipalities have a substantial role, and therefore, the main flow of power is between the municipality (The Owner or Purchaser) and the rescue departments (The Provider). Strong relations are also found between the ministry (The Regulator) and the municipality. The municipalities have a strong position as they are obliged by law, the Rescue Act, to ensure the provision of rescue services. There is a relation between the rescue department and the ministry, but this power flow is weaker than between the ministry and the municipality. (Haiko & Paloposki, 2007, p. 9)

In the figure, the organizations that are active in the field of rescue services are also included, but this actor has the weakest flow of power to the other actors. The organizations are responsible for the development and supporting development tasks, and therefore they have the least amount of power compared to other actors. (Haiko & Paloposki, 2007, p. 10)

2.4.1. Service Standard Decision

The local rescue services function under the local municipality, and the municipality is responsible for governing the organizations. The local rescue services and the municipality negotiate a Service Standard Decision agreement (fin. *palvelutasopäätös*) for a fixed term. This contract between the municipality and the rescue service department is the agreement that sets the foundation for the fixed period. According to this contract, the local rescue services operate during the fixed term. (SM018:00/2012)

The service level contract is created based on the framework that contains guidelines for the Service Standard Decision (fin. *Ohje palvelutasopäätöksen sisällöstä ja rakenteesta*) (SM018:00/2012) set by the Ministry of the Interior that was published in 2013. This framework is based on the legal requirements set for the rescue services

in the Rescue Act. It defines how the rescue services construct the Service Standard Decision to take care of the activities that are legally required in agreement with the municipality. The local rescue service department is the services provider, and the municipality is the purchaser of the services. The Service Standard Decision is defined after the rescue services have reached an agreement regarding the service level with the municipality and Regional State Administrative Agency. (SM018:00/2012)

In the Service Standard Decision, the following aspects should be considered:

- Analysis of the current Service Standard Decision period
- Estimating threats and risks in the local rescue service department region and the activities and resources needed to operate as legally required of the rescue services with the threats and risks considered. The goals and necessary performance are defined based on the risk analysis and estimation.
- Conclusions that can be drawn from the previous period's development plan (SM018:00/2012)

In addition to the legally required activities that the rescue services need to perform, the rescue services can be responsible for other activities as well. These can be such as first aid services, if this is agreed upon with the local hospital district per the Health Care Act, international operations, or contingency planning activities. (SM018:00/2012)

In the development plan, the rescue service should define how the services will be developed to meet the requirements of a changing operating environment. In this part, the costs for the activities on the development plan should be estimated, and these assessed for the time the contract is valid. (SM018:00/2012)

When negotiating for the Standard Service Decision, the municipalities should utilize all the available information regarding the operations of the rescue services and their financial situation. For example, financial statements, quarterly reports, operational and financial monitoring reports, and the last term's Standard Service Decision are considered. (SM018:00/2012)

Moreover, it is essential for the agreement regarding Service Standard Decision between the rescue services and the municipality that the costs for the services are known. Cost awareness is necessary so that the prices for the services can be set accordingly and realistically.

As the municipality purchases the rescue services from the local rescue service department in exchange for a set price, the problem is how the municipalities and rescue services can verify the costs for these services.

2.5. Purchaser-provider split

The municipalities and local rescue service departments agree on providing the rescue services in the Service Standard Decision agreement. The municipality is responsible for organizing the rescue services in their assigned area per the Rescue Act (397/2011). The municipality purchases the rescue services from the regional rescue service department, which provides these services to the municipality. Hence, the service delivery is organized by the purchaser-provider model, in which the municipality is the purchaser and the rescue service department the provider.

The purchaser-provider split is a model with its origins from the private sector and market-inspired management models that fall under New Public Management. Especially within healthcare, New Public Management models have been implemented widely to increase service production efficiency. The purchaser-provider model has been favored within this field, as it can be used to create an internal market, competition, and market incentives, which are hoped to lead to increased efficiency. (Siverbo, 2004)

The relation between the purchaser and the provider is based on contracts and the management and evaluation of these. The services purchased from the providers are managed by contracts in which the agreed-upon assignments are stated. Later an evaluation of the performance of these is conducted. (Siverbo, 2004)

Tynkkynen, Keskimäki, and Lehto (2013) have discussed the purchaser-provider split within Finnish healthcare. The purchaser-provider split is a service delivery model that has been used in Finland in the delivery of both health care services and elderly care services, and different variations of this model have been used internationally for service delivery. In this service delivery model, the payers, or purchasers of the services, in this model public third parties, are separated from the providers of the services in an organized manner. Contracts manage the operations that the provider produces for the purchasers. By having the service delivery organized with this model, it is believed that, for example, cost containment, improved efficiency, flexibility, and responsiveness can be achieved. Thus, it is considered a functioning model that can lead to improvements. This is partly because of the competition it creates between service providers, leading to increased efficiency, cost-effectiveness, and quality. Another aspect that can be seen as a positive aspect is the assumption that the purchaser of the services can express the services' demands and quality and make decisions based on this information more effectively than previously.

The internal purchaser-provider split created by this model within the municipality administration is based mainly on the concept of “management by results” and, therefore, creating fictional markets within the municipal administration. This concept builds on the thought that service providers need more independence from the administration and decision-making to provide their services innovatively and efficiently. Another aspect of this model is the incorporation of service providers from the private sector in the service delivery of public services, so-called contracting out. The incorporation of these solutions varies locally but is increasing. By incorporating these private sector service providers, the competition between the service providers is often enhanced, leading to quality development and efficiency of service provision. (Tynkkynen, Keskimäki & Lehto, 2013)

Tynkkynen, Keskimäki, and Lehto (2013) also discuss that the purchaser-provider split within health and social services in Finland has no specific regulatory legalization and is considered in the same manner as public procurement in Finland. The authors highlight that this could cause negative consequences for the quality of service. One reason for problems is a limited understanding for the drafting of the contract between the parties and defining the prices for the health care and social welfare services.

As the local rescue services and the municipalities that govern them organize the rescue services according to this model, the concepts raised by Tynkkynen, Keskimäki, and Lehto (2013) are relevant for this thesis. The authors raise the possible problem that can arise if proper knowledge regarding the costs of services is not known to a sufficient degree. Insufficient knowledge can lead to distorted decisions regarding the service level agreements between the purchaser and provider, as the costs of the produced services are central to this contract-making process.

2.6. The health and social services reform

The Finnish government has proposed a reform to the Finnish parliament regarding creating new welfare counties (fin. *sote-maakunnat*), which would take over the responsibility of organizing social and health care and rescue services from the municipalities that have this responsibility now. (STM055:00/2019)

This reform aims to reduce inequalities within health care and welfare and increase safety by guaranteeing equal quality and availability of social, health care, and rescue services. The reform also aims to ensure that a professional workforce is available and that the services can respond and adapt to changes in society in a proper manner and control and curb the costs that these services cause. (STM055:00/2019)

The proposal suggests creating 21 welfare counties in Finland that would take over organizing the social and health care services and the rescue services. The responsibility of organizing these services has previously been on the municipalities. The welfare counties would be public organizations that would be autonomous within their area. The responsibility of the organization of the rescue services would be transferred to the autonomous welfare counties. (STM055:00/2019)

The welfare counties and their operations would mainly be funded by the state, which means that the funding responsibility would shift from the municipalities to the state. The operations would also partly be funded by customer fees collected from the users of the services. The funding would be regulated in the funding law for the health and

social services (*fin. sote-rahoituslaki*). When it comes to the rescue services, the risk factor of the area would also affect the funding. As the state's funding responsibility would grow, the state's personal income tax rate would be raised. However, the municipalities would be obliged to reduce their municipal tax rate so that the overall tax rate would not grow. This means that the state's incomes would be increased at the same rate that the incomes of the municipalities would be reduced, as the funding responsibility shifts from the municipalities to the state. The responsibility of organizing the rescue services and related services would be moved to the welfare counties from the beginning of the year 2023. (STM055:00/2019)

As the primary funding responsibility for the rescue services would shift from the municipalities to the state because of the health and social services reform, the need for comparable financial information also increases, especially regarding the costs of the services, as this information functions as a base for pricing decisions. Therefore, the need for comparable cost data from the regional rescue service departments will be amplified through the health and social services reform.

2.6.1. Intermunicipal contracts and public partnerships in local service provision

Silvestre, Marques, Dollery, and Correia (2019) have studied the effect of cooperation in public partnerships on costs and if this type of cooperation reduces costs. Public markets are also facing the need to produce services cost-effectively due to financial constraints. The financial constraints have led to the use of, for example, intermunicipal contracts and public partnerships to provide local services with the most cost-efficient methods. Overall, the authors found that these types of cooperative partnerships reduce the costs of providing local services. (Silvestre, Marques, Dollery, & Correia, 2019)

As the health and social services reform in Finland also aims to reduce costs and provide better quality local services for the population equally, this research provides valuable insight into a similar issue. It supports the idea of cooperation and agreements between municipalities regarding the provision of local services, instead of every municipality only being responsible for its local services. However, as the current situation in Finland is that the municipalities have the primary responsibility of

providing the determined local services, cooperation and agreements between municipalities have been allowed from before. The cooperation has been allowed, for example, in the form of joint municipal authorities, so, therefore, this phenomenon would not be an entirely new notion in Finland either because of the health and social services reform (Statistics Finland, n.d.).

2.7. Finnish National Rescue Association SPEK-study

The Finnish National Rescue Association (SPEK) (Mankkinen, 2013) conducted a project to analyze the current situation of the Finnish rescue services during the years 2010 and 2011. The project had several subprojects, based on which two publications were released. The first publication (fin. *24/365 Palokuntalaisuus Suomessa*) (Mankkinen, 2013, p. 10) focuses on the history and development of the rescue services, and the second publication (fin. *Pelastustoimen tilinpäätös – Analyysi suomalaisen pelastustoimen nykytilasta*) (Mankkinen, 2013, p. 10) focuses on the operations, resources, and finances of the rescue services.

Määttä (2013, p. 183) conducted a financial statement analysis of the regional rescue services for this project by SPEK. The study aimed to analyze especially the costs allocated to the rescue services over the years 2007-2010, as well as analyzing other financial information from the financial statements and balance sheets from the same period, for example, to gain knowledge about the costs of specific tasks that are defined in the Rescue Act.

The study by Määttä (2013, p. 184) was conducted as a field study between 2010 and 2012. The empirical material was gathered using a survey and observations, personal communication, and information from previous research and development projects. In addition, the financial reports and statements of the main actors within the field of rescue services in Finland were analyzed and statistics from Pronto, which is the database for statistics over the Rescue Services in Finland.

The regional rescue services in Finland were divided into four control groups accepted and divided by the rescue service departments and the Association of Finnish

Municipalities based on statistics from Statistics Finland about regional population density and demographic change and development from the year 2008. The differences in the size of the regional rescue services cause variations to, for example, their operations and finances. Therefore, it is sensible to analyze the regional rescue services within their vicinity regarding operational and financial ratios. (Määttälä, 2013, p. 185)

Määttälä (2013, p. 185) examined the financial statements of the regional rescue services during the four years, and from this derived, for instance, percentual differences and similarities between the regional rescue service departments and the four control groups, as well as monetary differences and similarities between these groups.

Määttälä (2013) found that the total costs for the rescue services in Finland were on average 420 million euros throughout 2007-2010. In this calculation, the regional rescue services, the Ministry of the Interior's Department for Rescue Services, the Emergency Services College, the Fire Protection Fund, the regional state administration agencies, the Finnish National Rescue Association (SPEK) and other rescue service associations, the Finnish Association of Fire Chiefs (SPPL), the Federation of Finnish Contract Fire Brigades (SSPL), the Central Association of Chimney Sweeps and enterprises within the chimney-sweeping field are included. The total costs for the rescue services include costs allocated to tasks defined in the Rescue Act and associated tasks, as well as costs allocated to emergency medical care. Most costs stemmed from tasks related to the Rescue Act in the largest rescue service departments and operations relating to these tasks. In total, the rescue services allocated a total of 351 million euros per year to the costs of tasks per the Rescue Act and related activities (Määttälä, 2013, p. 269-270).

The previous study regarding the current state of the rescue services in Finland is considered in this study, as a financial analysis was conducted in the study, analyzing the economic state of the regional rescue services during the studied period. Määttälä (2013) found that the rescue services field could benefit from developing their cost accounting methods further and include more accounting information as a base for decision-making. The current economic state of the regional rescue service

departments will be considered in this thesis to gain knowledge about how this situation has evolved.

3. Accounting information for decision-making

In this chapter, literature about the use of accounting information in decision-making is addressed. Moreover, management accounting literature will be presented and its role in the public sector. In addition, literature regarding cost accounting and different cost accounting systems will be presented, as well as their usefulness in the public sector will be discussed. Literature on the role of financial information in decision-making will also be presented as it will serve as a framework for this thesis.

3.1. Accounting information in decision-making

Using accounting information internally in organizations for activities such as planning, control, evaluation, and decision-making is called management accounting. Management accounting aims to provide necessary information for management and decision-makers to ensure that they can make informed decisions and utilize resources effectively. (Hansen & Mowen, 2006)

When managers are in the decision-making process, they usually adopt a personal perspective that affects their choices. The task of accounting information is to provide relevant information and data to support and guide the decision-making process. To evolve the business processes of an organization and improve the profitability of operations, managers can seek to better time-based performance, efficiency, and quality. To support these agendas and goals, the managers need accounting information about the business processes to learn about the performance and operations. (Horngren, Bhimani, Datar & Foster, 2002; Hansen & Mowen, 2006)

It has been found that financial analysis and the analysis of financial statements provide valuable information to managers in business decision-making processes. The information retrieved from financial statement analysis provides valuable insights into the performance of the business and its efficiency, which is essential information in business decision-making processes (Ježovita, 2015). Also, Nasiripour, Ashlagi, Tabibi, Maleki, and Gorji (2012) have concluded that it is seen as an essential function

of managers to evaluate the business's financial performance to make correct and well-informed decisions that preserve the productivity and supervision of the organization.

Cepêda and Monteiro (2020) have found that financial information plays a vital role in decision-making within every field of business, as it provides crucial information about the business's financial performance that can be used for making future business decisions.

Pellinen (2003) highlights that one of the main functions of accounting is to provide information about the financial performance and efficiency of a business. Depending on what type of information is needed, the financial situation can be analyzed through various methods. Pellinen (2003) emphasizes that accounting information is vital in decision-making processes and periods when the leaders in an organization are making decisions considering the organization's future from economic perspectives and aiming to steer the organization properly from a financial standpoint.

When analyzing the financial statements and information of an organization, it is crucial to have a focus on large entries that are crucial for the business of the organization in question, keeping, for example, the field of business and strategy in mind, as these have a significant impact on the financial performance and position of the business (Seppänen, 2011).

Lewis (1960) states that financial analysis is a method that organizations can use to help the management in decision-making processes. The management can use the accounting information to steer the organization towards greater profits and goals. The function of the financial analysis is to make the accounting information valuable for all the users of this information so that the financial information can be utilized for the decision-making process, and it can give insights to management when it comes to different decisions and options.

Hopwood (1972) has studied the role accounting information has in evaluating an organization's performance and different evaluation styles, and their impact on managerial performance and behavior. The author highlights that accounting information and systems are made to provide managers with data that helps their

decision-making and enables managers to make decisions aligned with the organization's goals. Hopwood (1972) also states that the standard accounting reports of an organization can be utilized in various manners to evaluate the organization's performance. The accounting data can be given different meanings and interpreted differently by managers, for example, by combining it with other sources of information that support the data from other aspects. For example, a department's actual costs and budgeted costs can be analyzed to evaluate the performance, even though this analysis often only gives insight into the short-term performance and does not necessarily speak for the long-term success. In his study, Hopwood (1972) analyzes different evaluative styles that managers use to evaluate performance. The difference in this lies in the use of budgetary information for performance evaluation and how this information is used.

Otley and Fakiolas (2000) also discuss the use and relevance of accounting information to evaluate the performance of an organization. The authors (Otley & Fakiolas, 2000) have focused on measuring the scope of ways to define dimensions of evaluative styles and different accounting performance measures.

Virtanen, Stenvall, and Rannisto (2015) have also discussed Finnish public management and how the public administration has traditionally been developed and improved using information as a base for decision-making. Even though there are long traditions regarding leading and developing strategies with the help of information, they still highlight this being a constant challenge for management. Leading with the help of information and knowledge requires efforts in the daily work, planning, and operations. Therefore, leading with knowledge is a constant effort that should be a part of administrative work in the public sector.

Significantly as the operating environment for public sector organizations faces changes faster all the time, the need for knowledge as a base for decision-making is amplified constantly. Therefore, leading with knowledge and the importance of information as a base for decision-making should be considered essential in all management work in the public sector. (Virtanen, Stenvall & Rannisto, 2015)

3.2. Cost accounting

As previously stated, one of the primary roles of accounting is to report reliable information about economic resources to decision makers, so that they are equipped with relevant information about the business to be able to make educated decisions and manage economic resources properly (Bettner, 2015). Managerial accounting and cost accounting are focused on fulfilling the information demands of internal users both in public sector and private sector organizations (Rivenback, 2005).

A fundamental fact is that a well-managed business and cost awareness go hand in hand. Within all business sectors, it is in the interest of the organization's management to create realistic strategies and have functioning tools to measure the achievement of the set goals and performance from financial aspects. The management of an organization needs to have tools and methods that measure, for example, the organization's activities, influences from the external market and responsibilities of managers in economic terms, so that this information can be used as a base for planning, decision-making and controlling. To enable this and gather the necessary financial data the management will need cost analysis methods that give them information about the organization's performance and activities in financial terms, which is understandable and useable for its users. By having cost information in an understandable form, managers can use this information for planning, tracking, and controlling the aspects of the operations that they are responsible for, and the information will also enable them to make strategic decisions effectively. (Hussey & Ong, 2012)

Since financial and cost information are important sources of information for managers, cost accounting methods are important aspects and a major component within management accounting. Cost accounting methods focus on gathering and analyzing financial data and have also evolved to become indicators for how to better manage an organization from a strategic perspective. Also, as fund accounting is a central aspect of governmental accounting, cost accounting plays an important role within the public sector organizations and their internal management accounting methods for this reason. (Hussey & Ong, 2012; Rivenback, 2005)

Management accounting has its focus on measuring and reporting both financial and other types of information to the management of an organization to alleviate achieving strategic goals. Cost accounting, however, is more focused on the information about acquisition and consumption of resources within the organization. As this aspect is important to understand as a manager for successful management of the organization, cost accounting methods can provide useful information for management accounting. (Horngren, Bhimani, Datar & Foster, 2002)

Moreover, as cost accounting is a method within management accounting, its main task is to serve internal purposes. Therefore, the management of an organization and the organization's specific operations and environment shape which type of information is necessary for decision-making. (Hussey & Ong, 2012)

As found by the previously discussed articles, organizations can use cost accounting methods and cost management practices to succeed in the economic management of the organization. With these components, the organizations can aim to develop their operational effectiveness and decrease their costs.

3.3. Cost accounting in the public service sector

Within public sector organizations, cost accounting methods are used to gather and produce information about the operations of the organization. With the help of the cost accounting methods, the organization can gather information about costs and spending of tax funds within a specific public sector organization. The cost accounting methods are also used to provide information about the costs of services or activities produced in public sector organizations. (Raudasoja & Johansson, 2009)

A current trend within the public sector is increasing requirements regarding transparency in operations and decision-making, especially when it comes to spending. The public sector organizations are expected to report the costs of the services and activities they provide. Many stakeholders are interested in this information. Taxpayers want to know how the tax money is spent, and decision-makers need information that will function as a foundation for decision-making. Often this

information is needed already before negotiations, so that the spending of scarce resources can be evaluated well. (Raudasoja & Johansson, 2009)

Cokins (2015) also discusses the need public sector organizations have, among all organizations, to better understand the costs of their operations, where they originate from and how these behave. Still, there is much uncertainty about how to measure costs in the best manner and how to interpret them. There are many different cost measurement and accounting practices, and this can lead to doubt about which methods are the most suitable for the specific organization. Cokins (2015) highlights that the various methods do not automatically have to be rivals but can be used together and simultaneously, or side by side.

Public sector organizations are often currently under pressure to cut expenses and control spending and are, therefore, expected and required to operate as efficiently as possible. Many government organizations have also begun to take inspiration from private sector organizations in terms of internal accounting methods used for management. The public sector organizations are, in other words, pressured to perform better for less and still maintain the quality of the service. To be able to meet these requirements the public sector organizations need to measure the actual costs of produced services, try to improve processes, in some cases implement outsourcing solutions, and develop a strong strategy and mission that they work towards. As the funds for public sector organizations mainly originate from tax incomes, it is usually not an option to acquire new resources and funds from higher tax rates, as this can be a disliked agenda that does not receive much support. Therefore, it is of great importance that the public sector organizations understand their costs well, so that they can steer the organizations towards efficiency and improved performance. (Cokins, 2015)

Rivenbark (2005) discusses the history of cost accounting in public sector organizations, and how the need for unified accounting methods was identified early on, as municipal public sector organizations needed the ability to measure the costs of service delivery in a more systematic manner. Thus, already early on, the interest in tracking efficiency and exercising internal control of costs, as well as comparing numbers with external actors, were drivers behind the implementation and use of cost

accounting methods. Even though the interest in cost accounting methods sparked early on, the interest in these methods has continuously grown in the public sector. Various initiatives motivate the usage of cost accounting methods to enable different performance measurement systems that often require cost accounting methods to analyze, for example, unit costs, as well as provide financial information that can be used for comparison purposes. Rivenback (2005) also highlights that there is limited research regarding governmental cost accounting in public sector financial literature and, therefore, research within this area is appropriate.

3.4. Costing methods

As mentioned previously, the purchaser-provider model creates a need for accurate cost information that can serve as a base for decision-making regarding pricing decisions. Distorted price levels can lead to incentives for either under- or over-utilization. Therefore, it is in the interest of the purchaser of the service to make an estimate of the actual price of a service, which is supplied by the service provider, that is based on the accurate costs of the service delivery. (Barber, Lorenzoni & Ong, 2019)

There are various methods that can be used for costing purposes and, in the following section, various costing methods are presented that can be used for cost accounting. Within healthcare and hospital settings, different costing methods and techniques used for pricing have been studied, for example, by Carroll and Lord (2016).

3.4.1. Traditional cost accounting

Traditional costing is a costing method that assigns overhead costs in an organization to a certain output based upon a set or pre-determined cost driver. Alternatively, this method uses a pre-established percentage for the assignment of the overhead cost. This traditional cost accounting method is easy to use and understand and, therefore, does not require large investments, either financially or managerially. This is most likely the reason behind the widespread use of traditional costing methods and their popularity. This traditional method has received critique for not providing accurate or realistic information regarding the true costs of products or services. This can be due

to failure to account for variances in service or product lines and channels of marketing. (Carroll & Lord, 2016)

3.4.2. Activity-based costing

Activity-based costing was developed in the 1980s by Kaplan, and this method has thereafter received much attention both within research and practical adoption (Carroll & Lord, 2016).

Activity-based cost accounting is used both in private and public sector organizations, and both manufacturing and service organizations. This method can also be beneficial in planning phases, as it can present the relation of resource intensity and goal achievement. (Carroll & Lord, 2016)

This method has a rational approach for the costing of produced services or products. Activity-based costing starts with the attempt to identify the primary activities and resources that are used for producing an output. After this, the indirect costs are assigned to the correct activities with the use of cost drivers that reflect the usage of each specific resource pool. In contrast to traditional costing methods, activity-based accounting methods have been praised for providing rational and accurate information for financial management purposes. With the help of this information, managers can make well-informed and accurate decisions regarding price calculations and different profitability analyses. (Carroll & Lord, 2016)

The fundamental belief within activity-based costing methods is that all organizational activities are in place to support the production of either services or products and, therefore, indirect costs can also be assigned to specific services and products. Furthermore, this enables managers to obtain a more accurate picture of the true costs of produced services or products. By being able to gather accurate information about the costs of products and services, the management of an organization can place most of their attention on value-adding activities and, therefore, the use of this method can lead to overall better performance and satisfaction. (Carroll & Lord, 2016)

Cokins (2015) suggests that activity-based cost management can provide functioning calculation methods for public sector organizations, which provide valuable information about their costs. The activity-based cost management method seeks to answer the primary questions regarding the incurrence of costs and the accurate price of actions. A problem that many public sector organizations encounter is that a spending budget needs to be determined and set for specific time periods in advance. However, these budgets are often created without enough fundamental facts supporting the decision-making process, which undermines the purpose of this procedure. As the budget negotiation processes often becomes either a possibility to increase or decrease the resources from the current level from the budget requester's point of view, the entire budget process can be based on unfavorable motives. The budget process should be based on the actual resource spending level, and therefore, be equal with the level of work that is required. (Cokins, 2015)

Moreover, Evans and Bellamy (1995) have found that activity-based costing can be beneficial for public sector service organizations, as this method can help with identifying cost drivers and, therefore, make management more aware of these. In addition, this method can help with recognizing the revenues that various activities generate and the resources the activities consume. Despite the challenges service industries often encounter when it comes to cost control and performance assessment, Evans and Bellamy (1995) also highlight that especially public sector service organizations are expected to monitor the efficiency of their service provision increasingly.

Webster and Hoque (2005) have investigated the use of cost accounting systems and information in a public sector hospital. The authors discuss the need for cost accounting information in modern health administration, as public sector organizations often nowadays must compete for resources, creating a need to manage costs and outputs well. Furthermore, the information is important for strategic management of the organization.

Additionally, Evans and Bellamy (1995) discuss the challenges service industries and organizations encounter regarding performance assessment and cost control. As accounting systems designed for control often originate from the manufacturing

environment, and are designed for manufacturing organizations, these methods can be difficult to adapt in service organizations, which are characterized by diversity and complexity. Therefore, controlling costs and profitability can be more challenging within service industries.

The activity-based costing method has received some criticism as well. An example of this criticism is that this method can be resource-intensive to use and implement in complex organizations, as the identification of specific cost drivers needs notable investment both financially and managerially. Furthermore, as the environment in which organizations operate is ever changing, maintaining this type of a costing system can be investment- and labor-intensive, as these systems require that the cost driver assumptions are revised regularly. (Carroll & Lord, 2016)

Based on the articles discussed above it can be concluded that activity-based costing methods can be functioning in service organizations as well, since these methods can help the organizations recognize and identify cost drivers.

3.4.3. Time-driven activity-based costing

Time-driven activity-based costing is a management accounting method created to tackle some of the issues identified with traditional activity-based costing. Time-driven activity-based costing methods differentiate from traditional activity-based costing methods in the manner that time is the central and primal cost driver being used. This method assumes that most resources, such as personnel, machinery, and facilities, have dimensions that can be calculated in terms of time. Therefore, this method does not require identified activities in the same manner as activity-based costing requires. (Carroll & Lord, 2016)

This method can be simpler to implement than activity-based costing methods and is also often easier to maintain. This aspect of being more straightforward to use can be seen as both the strength and weakness of time-driven activity-based costing. The aspects that make this method easier to use can also weaken its usefulness in comparison to activity-based costing, as the activities related to the indirect costs might go unidentified when using time-driven activity-based costing methods. Hence,

activity-based costing can be a more useful method, as it can help with the detection of inefficient processes. (Carroll & Lord, 2016)

Further, Keel, Savage, Rafiq and Mazzocato (2017) have reviewed the use of activity-based costing within healthcare, and more specifically the use of time-driven activity-based costing methods within this field. In their paper the authors (Keel, Savage, Rafiq & Mazzocato, 2017) discuss the aspect of cost calculations, and how this aspect has received less focus in the field, and, therefore, proper standards for cost calculations have not been developed. Without proper standards and models on how to calculate the costs for health care services, valid comparisons from a value-based perspective cannot either be made. If the cost calculation issue is solved, and the costs of the care and services is understood, the costs for the delivery of care can be better controlled. The study by Keel, Savage, Rafiq and Mazzocato (2017) examines how time-driven activity-based costing can be utilized within healthcare to combat the cost challenges the field is facing.

Traditional activity-based costing and other process-based cost accounting methods have been implemented within the healthcare field previously, but not without a challenge. The implementation of these methods has often proved to be resource-intensive in larger organizations, which has led to these methods not being implemented fully in all organizations. Healthcare organizations are commonly complex organizations, which can cause difficulties when trying to implement these methods. Despite this, activity-based costing has been proved to be a useful method within healthcare as well, in comparison to traditional cost-accounting methods. (Keel, Savage, Rafiq & Mazzocato, 2017)

Moreover, time-driven activity-based costing is less resource requiring than traditional activity-based costing, as it has a focus on accuracy instead of precision. In time-driven activity-based costing, the focus is on the capacity cost rate and the time the service provision needs. Therefore, this method is less resource requiring, and has been found to be more suitable for complex organizations, such as organizations within healthcare. (Keel, Savage, Rafiq & Mazzocato, 2017)

Keel, Savage, Rafiq and Mazzocato (2017) found in their paper that time-driven activity-based costing is a useful and suitable method to use within the field of healthcare, to make costing processes more effective, and overcome challenges that are associated with traditional cost accounting methods. In their study, the authors (Keel, Savage, Rafiq & Mazzocato, 2017) found that healthcare organizations viewed the method of allocating costs by the cost capacity rate as a simpler method, than using the activity-based costing method. The time-driven activity-based costing method also led to more exact cost estimations. Therefore, the time-driven activity-based costing method can be viewed as a more suitable method for healthcare organizations, and can be worth incorporating into current systems, for better cost control and value creation.

In addition, Hoozée and Hansen (2018) have investigated the relation between time-driven activity-based costing and traditional activity-based costing. In their study, Hoozée and Hansen (2018) found that time-driven activity-based costing methods are more precise than activity-based costing methods in situations where the traceability of resources to activities is at a high level, and the traceability to products is at a low level. On the contrary, activity-based costing is more precise when activities are better traced to products. Another conclusion that the authors (Hoozée & Hansen, 2018) introduced was that adding activity-based costing methods into a time-driven activity-based costing model can lead to better precision, and that overall, activity-based costing methods can be seen as more robust systems than time-driven activity-based costing methods. Moreover, depending on the types of tasks and groups working in an organization, either activity-based costing or time-driven activity-based costing can be more suitable for a certain group, depending on how differentiated the tasks that the groups work on are. Also, depending on whether one person works on tasks from various processes or not, this can affect which method would be suitable to use.

Based on these studies, it can be concluded that time-driven activity-based costing can be a suitable cost allocation method in certain environments and organizations. An example is, in complex organizations operating in the field of healthcare, where the organizations are mainly providing services and the organizations' operations are of a complex nature.

3.4.4. Performance-Focused Activity Based Costing

The performance-focused method of activity-based costing aims to tackle the above-mentioned issues related to activity-based costing and time-driven activity-based costing. This method aims to function as a performance analysis tool as well, in addition to being a costing system. With this method, the resource consumption of the activities is identified, as in activity-based costing, and this method is therefore an intense costing method with many steps. (Carroll & Lord, 2016)

In traditional activity-based costing, the cost drivers are identified through certain activities, and in time-driven activity-based costing the cost driver is time, but in performance-focused activity-based costing the actual resources required for an activity can be analyzed in several methods, for example, with the help of interviews, questionnaires, or according to the actual usage of resources, such as materials or time. (Carroll & Lord, 2016)

This method also measures the cost drivers' standard rate and variations in price, and by doing this, the method can be useful for identifying actual cost drivers. Thus, performance-focused activity-based costing is a greater analysis tool, and, therefore, is a more valuable tool for planning, performance measurement and tracking effectiveness. However, this makes the method more difficult to implement, as it requires many steps, and various aspects of the operations must be considered according to the model. (Carroll & Lord, 2016)

3.4.5. Ratio of cost to charges

The ratio of cost to charges-method is a cost accounting method that is specifically used within the sector of healthcare. In this method, traditional costing methods are first used to assign overhead costs, to enable hospitals to measure and estimate the total costs for all the departments producing revenues. Thereafter, these estimates are combined with data on the total charges for the total services produced by a specific clinical department, and in this way the department-level ratio of cost to charges can be calculated. Within the hospital sector, this method is simple to use, but this method

can also possibly lead to inaccurate service cost calculations and estimations. (Carroll & Lord, 2016)

3.4.6. Cost-based pricing in the public service sector

Within healthcare, different cost accounting methods have been used internationally to price the services that are produced and provided by the healthcare industry. The accurate cost information of public sector hospitals is necessary for the pricing of public healthcare services. It is important to be able to estimate accurate costs of healthcare services, so that the cost information can function as a base for decision-making. This can help prevent possible negative effects that poor decision-making can have on the quality of healthcare. In Finland, cost-based pricing is widely used in hospital districts and is usually based on activity-based funding models. As funding based on contracts and the purchaser-provider split model needs accurate cost data to work efficiently, the need for accurate cost data is great within public sector healthcare. (Raulinajtys-Grzybek, 2014)

Furthermore, for pricing based on cost information to work, the cost data must be calculated using similar methods amongst all the providers. Detailed knowledge regarding the cost structure and the cost drivers within public sector services enables focused policy making and better use of public resources. Accurate cost information also makes it possible to choose the most efficient provider. Additionally, accurate cost information is needed to be able to plan the service structure realistically and estimate the resources this structure requires. Further, with the help of substantial cost data, the cost control of the organization will be improved. (Raulinajtys-Grzybek, 2014)

As the services provided by healthcare organizations are similar in their nature to the services provided by the rescue services, and the funding decisions are made in a similar manner, cost accounting methods that have been proven to be functioning within healthcare organizations could work within the rescue service organizations as well. Therefore, the implementation of these methods should be considered and analyzed within the field of rescue services as well.

3.5. Management accounting and strategic decision-making

In today's ever changing business environment, management accounting information is expected to serve the purpose of evaluating and following up strategic performance, in addition to helping managers with making sensible decisions, despite constant organizational and environmental changes. This means that the operational aspects and issues are still important within management accounting, but also the incorporation of strategic concerns has increased. (Horngren, Bhimani, Datar & Foster, 2002).

In public sector organizations it is important to consider the economic aspects in relation to the organizations' legal requirements and the goals set for these activities. Even though these organizations are not profit-seeking in their nature, and the legal requirements for these organizations function as the foundation for all their operations, it is important that the management of these organizations also considers the economic aspects of their operations and how the organizations can develop their economic performance. With the help of strategic goals organizations can ensure that they are headed in the right direction and remain successful in the future as well. A part of realistic strategy work is the incorporation and consideration of economic and financial aspects of the operations. (Raudasoja & Johansson, 2009)

3.6. Discussion on literature review

The theory and research articles discussed above affirm that operations and costs are closely related concepts that affect each other. To improve efficiency, quality, and service provision, a fundamental aspect is to have proper cost information about the operations, which can function as a base for decision-making.

As the relationship between the municipality and the local rescue service department is organized in accordance with the purchaser-provider model, accurate cost information is of great importance for decision-making purposes and when defining the Standard Service Decision, which defines the framework for the operations of the rescue services. To work efficiently, the purchaser-provider split model requires

accurate cost data. This cost data can then be used to estimate a correct price for the purchased services.

Especially, within public sector service organizations, cost information serves an important function, as transparency about spending and costs is expected from these organizations in an increasing manner. The spending of public means is also expected to be cost-efficient, and the public sector organizations are often expected to provide service of the same quality as before or even improved quality, but for less resources. This also creates a need for accurate cost data, which can be used for identifying possible challenges in the operations and help to manage the operations as cost-efficiently as possible. With the use of, for example, activity-based costing systems, the cost information retrieved with the help of this method can be utilized to be able to focus on value-adding activities in the operations.

Moreover, as New Public Management has influenced the administration of public sector organizations and reforms regarding public administration, it is crucial to have proper management accounting methods in place, to ensure that the quality of public sector services does not deteriorate. Furthermore, there has been criticism towards New Public Management inspired methods and public sector organizations taking inspiration from administration models retrieved from the private sector. The criticism has been concerned with the changes inspired by the New Public Management approach having a negative effect on the quality of public services. Therefore, it is necessary to have sufficient information about the public sector organizations' operations, to ensure that the quality of public services remains on the desired level. In addition, this is important from the health and social services reform perspective, as good quality public service also is a strategic goal of the reform.

4. Methodology and data

The methods used in this thesis will be a case study analyzing the financial information and accounting information of the regional rescue services in Finland, as well as gathering data through a questionnaire from the regional rescue services. These methods will be used to gain an understanding of how the public sector in Finland, with special focus on the field of rescue services, can utilize accounting and cost information to strategically manage the rescue services, also through the health and social services reform, and ensure good and strategic management after the reform has been implemented in the year 2023.

The problem for the rescue services in Finland, and the municipalities that govern and “own” these departments and purchase the rescue services through the purchaser-provider model, is how to combine the operations and the pricing of the services. As the municipality purchases the rescue services for a set price from the rescue service departments, the challenge is how to define and how to estimate the accurate price of the services. Therefore, information regarding the price of the services is essential for the decision-making process.

4.1. Research methodology

In the following sections, the method of this study will be explained, and the data being used will be clarified. The chosen research methods and data collected for this thesis aims to find answers to the research questions that are defined for this thesis.

4.1.1. Case study method

David (2006) discusses the different dimensions of case studies as a research method. By using case studies as a research method, both qualitative and quantitative data can be included in the research data. Case studies as a research method is used as a strategy to understand complex issues by use of various data collection techniques. (David, 2006)

David (2006) cites Yin (2004) regarding case studies:

“[C]ase studies investigate real-life events in their natural settings. The goal is to practice sound research while capturing both a phenomenon (the real life event) and its context (the natural setting). One strength of the case study method is its usefulness when phenomenon and context are not readily separable... Another strength is that the method enables you, as a social scientist, to address how and why questions about the real-life events, using a broad variety of empirical tools.” (David, 2006, *What is a Case Study?*)

Through qualitative case studies, the researcher can study complex phenomena in depth within a specific context. This method can be used within various fields of business and is also a functioning method for business research. This method is used to study a phenomenon in a specific context, with the help of various sources of data and from various angles, to understand the issue and its complexity. The phenomenon is also studied in its natural environment, to obtain realistic results. (Rashid, Rashid, Warraich, Sabir & Waseem, 2019)

The aim of this thesis is to gain an understanding of the current economic state of the rescue services departments in Finland, as well as analyzing their current cost accounting methods used for pricing. Therefore, the case study method is a technique that can permit the exploration of this issue in an in-depth manner, to gain a thorough understanding of the issue, with the use of multiple data sources analyzed in their own context.

Next the specific research methods used for the execution of the case study will be discussed more profoundly, and their suitability for this thesis will be reviewed.

4.1.2. Financial statement and document analysis

To answer the research agenda set for this thesis a case study method will be applied to conduct a thorough analysis of the financial situation of the rescue services in Finland, and review and analyze the information used for the decision-making process. As the municipalities should utilize all available data regarding the operations of the

rescue services for the negotiation process of the Service Standard Decision, the information used for this process will be analyzed in this study, to understand the base on which the contract and decision-making is made. Financial reports used for the negotiation process of the Service Standard Decision can be for example financial statements of the rescue services, quarterly reports, operational and financial monitoring reports, and previous contracts of the Service Standard Decision.

These reports and documents will be analyzed to gain knowledge about the current state of the rescue services, the information that can be drawn from the reports, and whether this information serves its purpose.

The financial statements of companies are major sources of information about the company and its financial performance and development. When doing a financial analysis of a company, the financial statements of the company are analyzed to understand, among other things, the performance, funding, and prerequisites for the company's operations. (Niskanen & Niskanen, 2003)

As financial and economic information about an organization's operations and performance is valuable knowledge for decision-making, as found by Cepêda & Monteiro (2020), this type of a research method is suitable for the purpose of this thesis. Bowen (2009) states that document analysis often is a suitable research method for case studies that use a qualitative approach, as the analysis of documents can enable the researcher to find insights, understanding and meaning related to the research question and problem in the study. Bowen (2009) also highlights that documents, such as financial statements and reports, are stable sources of data, as they are non-reactive and are not altered because of the study or the presence of the researcher, as well as being exact forms of data with clear references and details, for example.

One potential limitation of document analysis, in this thesis analysis of financial statements, can be insufficient detail for the study, as the data and documents are not made for this purpose in the first place. Therefore, they can be lacking for the research question and problem that is being studied. In this thesis this possible limitation should not cause issues for the data needed for the analysis, as financial statements provide a broad spectrum of data about the financial situation of the rescue services, and

additional data will be gathered through a supplementary questionnaire, to gain access to all the knowledge about the financial situation that is necessary for this thesis. (Bowen, 2009)

For this thesis the financial statements of the 22 regional rescue services of the fiscal year 2019 will be analyzed through a document and financial analysis. The financial statements will be analyzed to gain information over the overall financial reporting of the rescue service departments. The financial information and reporting methods of the regional rescue service departments will be analyzed and compared to understand whether the data is comparable between the departments and how this information supports decision-making.

The financial statements of 2019 for the regional rescue services will be received from the Ministry of the Interior for the study in this thesis. Operational and statistical data will also be received and gathered through the statistical database Pronto.

The research method used in this thesis will be a qualitative study, conducted as a case study of the rescue services in Finland, where the financial statements and financial data will be analyzed through a financial analysis, and further explanations about the financial statements and the financial information found in these will be received and collected through a questionnaire that will be sent out to the regional rescue services by the Ministry of the Interior for this thesis and study.

The findings in this thesis will also be compared to the findings in the previous study by Määttä (2013) to synthesize the results, and to be able to construct an even deeper meaning, as explained by for example Erwin, Brotherson and Summers (2011).

Erwin, Brotherson and Summers (2011) explain that a qualitative meta-synthesis is a research method where results from different qualitative studies can be analyzed across the different studies and compared to draw conclusions by combining the qualitative evidence. This method is used to gain deeper insight into the research question by the synthesis of previous qualitative studies.

4.1.3. Questionnaire

In addition to the financial analysis a qualitative questionnaire will be sent out to the regional rescue services. The questionnaire will be used to gather additional information about the financial situation and reporting of the rescue service departments, to supplement the information from the financial statements and the database Pronto and, therefore, provide more insight into areas that need further explanation. The questionnaire gathers additional information on the financial information received from the reports, so that the financial information can be interpreted more profoundly, and different posts in the financial reports can be interpreted in more detail for the purpose of this study.

The questionnaire will be sent out to the regional rescue service departments from the Ministry of the Interior in the beginning of the year of 2021, to receive the additional information for the analysis of the financial statements.

The questionnaire can be found in the appendix of this thesis in Finnish and an English translation is also attached, as the questionnaire was sent out in the Finnish language.

Bowen (2009) also highlights that document analysis can be further strengthened as a research method by collecting support data through other methods as well, and in this thesis the additional data will be gathered through the questionnaire.

4.1.4. Additional statistical data

Additional statistical and operational data will be received through the statistical database Pronto, the rescue services resource and accident statistics program (Pronto), that the local rescue services together with the Ministry of the Interior have over the rescue services. The Emergency Services Academy Finland maintains the Pronto database. The Pronto data was received through the Ministry of the Interior as a part of their research project (fin. *Pelastustoimen ja siviilivalmiuden suorituskyky ja suunnitteluperusteet-hanke*).

The statistical and operational data in combination with the financial statement data, that is supported by the additional information on the financial situation gathered from the local rescue services through the questionnaire, will be used for analysis in this study.

4.1.5. Sample

In this thesis, the financial statements of all the 22 regional rescue services in Finland will be analyzed and other relevant financial and operational reports for the rescue services in Finland. This information will be analyzed to understand the financial situation and reporting of the whole rescue service field in Finland. All rescue service regions and the municipalities under which they function are included in the study.

The 22 regional rescue services in Finland are the following:

- Rescue Services of Central Finland (fin. *Keski-Suomen pelastuslaitos*),
- Rescue Services of Central Ostrobothnia and Pietarsaari region (fin. *Keski-Pohjanmaan ja Pietarsaaren pelastuslaitos*),
- Rescue Services of Central Uusimaa (fin. *Keski-Uudenmaan pelastuslaitos*),
- Rescue Services of Eastern Uusimaa (fin. *Itä-Uudenmaan pelastuslaitos*),
- Rescue Services of Helsinki (fin. *Helsingin pelastuslaitos*),
- Rescue Services of Jokilaaksot (fin. *Jokilaaksojen pelastuslaitos*),
- Rescue Services of Kainuu (fin. *Kainuun pelastuslaitos*),
- Rescue Services of Kanta-Häme (fin. *Kanta-Hämeen pelastuslaitos*),
- Rescue Services of Kymenlaakso (fin. *Kymenlaakson pelastuslaitos*),
- Rescue Services of Lapland (fin. *Lapin pelastuslaitos*),
- Rescue Services of North Karelia (fin. *Pohjois-Karjalan pelastuslaitos*),
- Rescue Services of North Savo (fin. *Pohjois-Savon pelastuslaitos*),
- Rescue Services of Ostrobothnia (fin. *Pohjanmaan pelastuslaitos*),
- Rescue Services of Oulu-Koillismaa (fin. *Oulu-Koillismaan pelastuslaitos*),
- Rescue Services of Pirkanmaa (fin. *Pirkanmaan pelastuslaitos*),
- Rescue Services of Päijät-Häme (fin. *Päijät-Hämeen pelastuslaitos*),
- Rescue Services of Satakunta (fin. *Satakunnan pelastuslaitos*),
- Rescue Services of South Karelia (fin. *Etelä-Karjalan pelastuslaitos*),

- Rescue Services of South Ostrobothnia (fin. *Etelä-Pohjanmaan pelastuslaitos*),
- Rescue Services of South Savo (fin. *Etelä-Savon pelastuslaitos*),
- Rescue Services of Southwest Finland (fin. *Varsinais-Suomen pelastuslaitos*),
and
- Rescue Services of Western Uusimaa (fin. *Länsi-Uudenmaan pelastuslaitos*).

5. Results and analysis

In this chapter, the results from the empirical analysis will be presented and discussed. The results from the analysis will also be examined with the research questions that were defined for this thesis.

5.1. Financial analysis of the current economic state

In this analysis, the current economic state of the 22 regional rescue service departments was analyzed for the year 2019. The analysis was conducted by examining the financial statement information of the regional rescue service departments and the financial data from the internal statistics database Pronto. The financial information in the internal statistical database Pronto has a similar structure as the external financial statements follow, but in Pronto, the financial data has been divided by function. The financial statements follow the structure defined by the Municipal Section of the Accounting Board. It operates under the Ministry of Economic Affairs and Employment. The structure is defined in the general instructions regarding the financial statements of municipalities and joint municipal authorities (fin. *Yleisohje kunnan ja kuntayhtymän tilinpäätöksen ja toimintakertomuksen laatimisesta*) (Association of Finnish Municipalities, 2020).

First, the overall costs and incomes of 2019 were analyzed and calculated. The analysis was conducted to obtain a general view of the distributions of the costs and incomes and see how these vary between the departments.

5.1.1. Cost analysis

In this analysis, the total costs of all the departments for the year 2019 were included. The cost data were gathered from the financial statements of the year 2019 and the internal statistical database Pronto. From the Pronto data, the departments' costs were divided and appointed to the different functions of the rescue service departments. The functions were the following: rescue operations, preventive measures, and support activities, which compose the legally required activities. In addition, the costs for the

functions emergency care and first response were included, as the rescue service departments also arrange these functions, and the data about these functions can be found from the Pronto database. From these functions, the total costs of the rescue service departments were calculated for the year 2019.

The departments' costs include the following items of expenditure: personnel expenses, rent fees, procured services, materials, supplies and goods, allowances and grants, other operational expenses, depreciations, financial expenses, and extraordinary expenses.

In Figure 2 below, the total costs of the rescue service departments can be found (in 1 000 €).

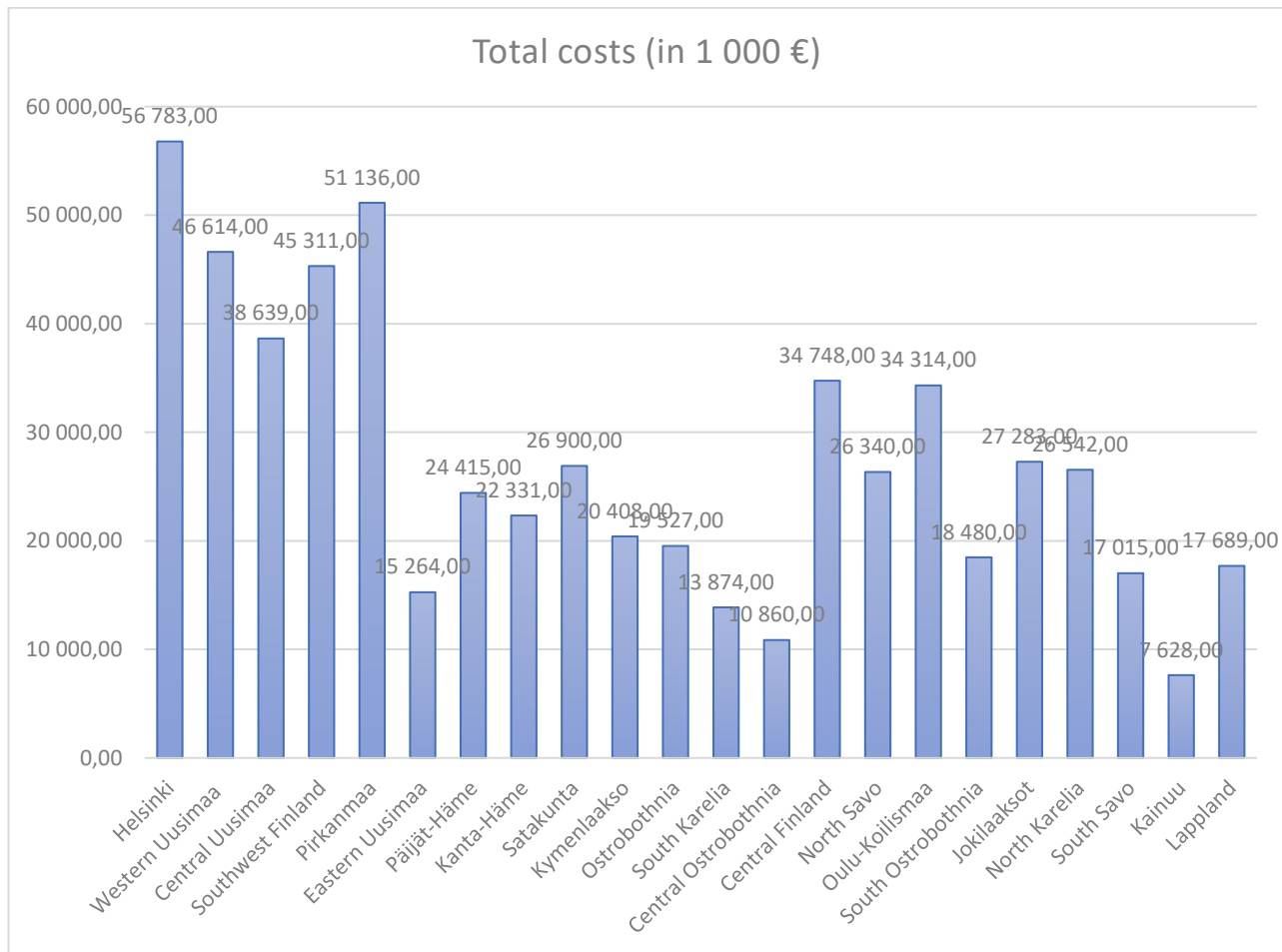


Figure 2: Total costs (in 1 000 €) of the rescue service departments

The total costs include all the functions of the rescue service departments, including emergency medical care and first response functions. The total costs for all the rescue service departments were 602 101 000,00 € in 2019. The department with the highest costs in 2019 was the Rescue Services of Helsinki, with total costs of 56 783 000,00 €. Next, the department with the second-highest costs was the Rescue Services of Pirkanmaa with the total costs of 51 136 000,00 €. In third and fourth place were the departments of Rescue Services of Western Uusimaa with the total costs 46 614 000,00 € and Rescue Services of Southwest Finland with the total costs of 45 311 000,00 €.

The total costs of the departments primarily consist of the legally required tasks. On average, 76,06 % of the total costs of the departments originate from the legally required tasks. In Figure 3 below, the share of costs for the legally required tasks can be found. There is quite some variation in the percentage between the departments. The variation depends on to which extent the department produces emergency medical care and first response services, in addition to the legally required services.

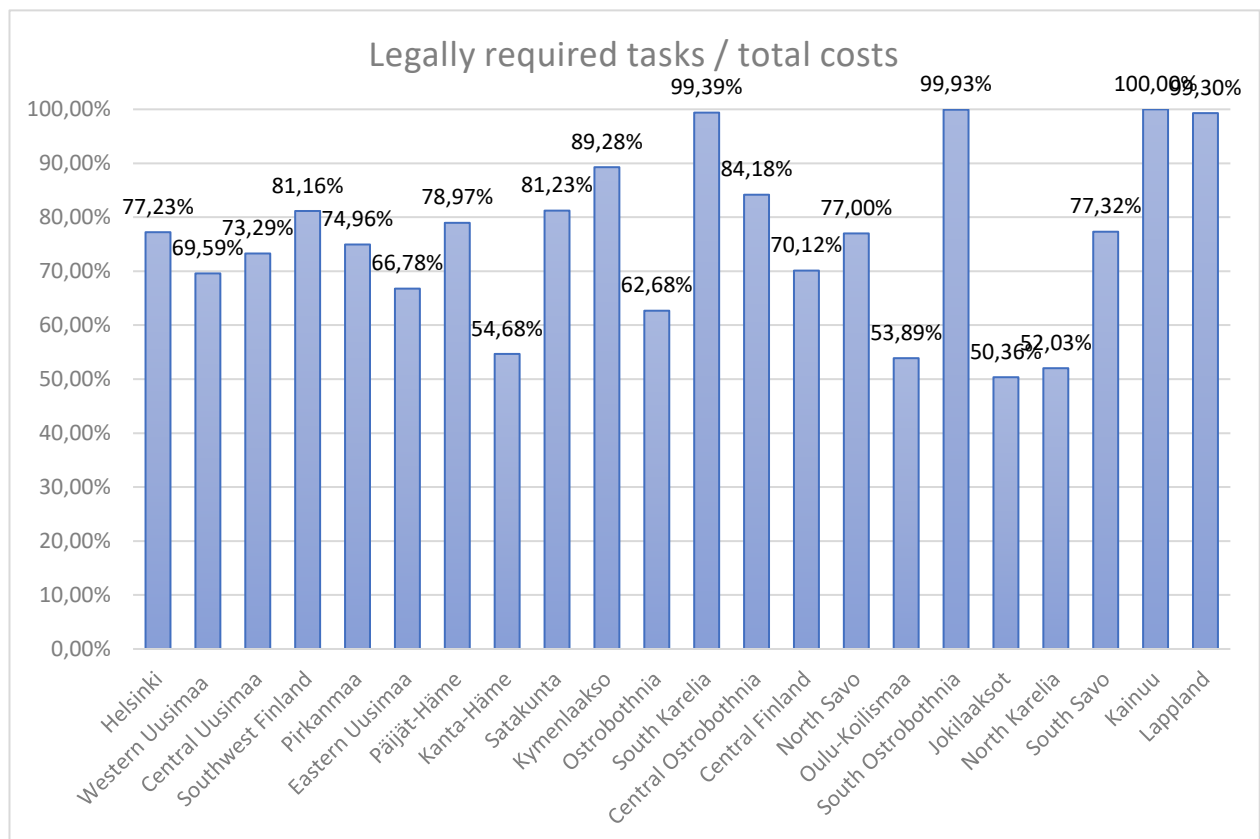


Figure 3: Share of costs for legally required tasks of total costs

The cost change was calculated, comparing the situation in 2010 to the situation in 2019. The comparison was made to review how the costs of the rescue service departments have developed over nine years. The cost information for the year 2010 was gathered through the internal statistical database Pronto. This analysis was conducted to understand how the costs have evolved and how this has varied between the departments. The inflation was considered in the calculations using the Statistic Finland's price index of public expenditure to calculate the year 2019 to the same value as the costs were in the year 2010. The value of the index used was 111,9 for the year 2019.

Overall, the average growth in costs was 28,48 % considering the inflation rate using the price index of public expenditure. The most significant percentual growth was in the Rescue Services of Jokilaaksot, where the percentual and actual growth rate between 2010 and 2019 was 107,70 %. All departments had a growth rate in their costs between 2010 and 2019, except for the Rescue Services of Helsinki. The costs of this department had decreased by 0,14 %, considering the inflation rate. The growth of costs can, to some extent, be explained by an increased amount of emergency care services being arranged by the rescue service departments. The departments where the costs over the past nine years had grown the most costs for the emergency care services had also grown significantly.

Below, the change in the total costs of the departments between the years 2010 and 2019 is presented in Figure 4.

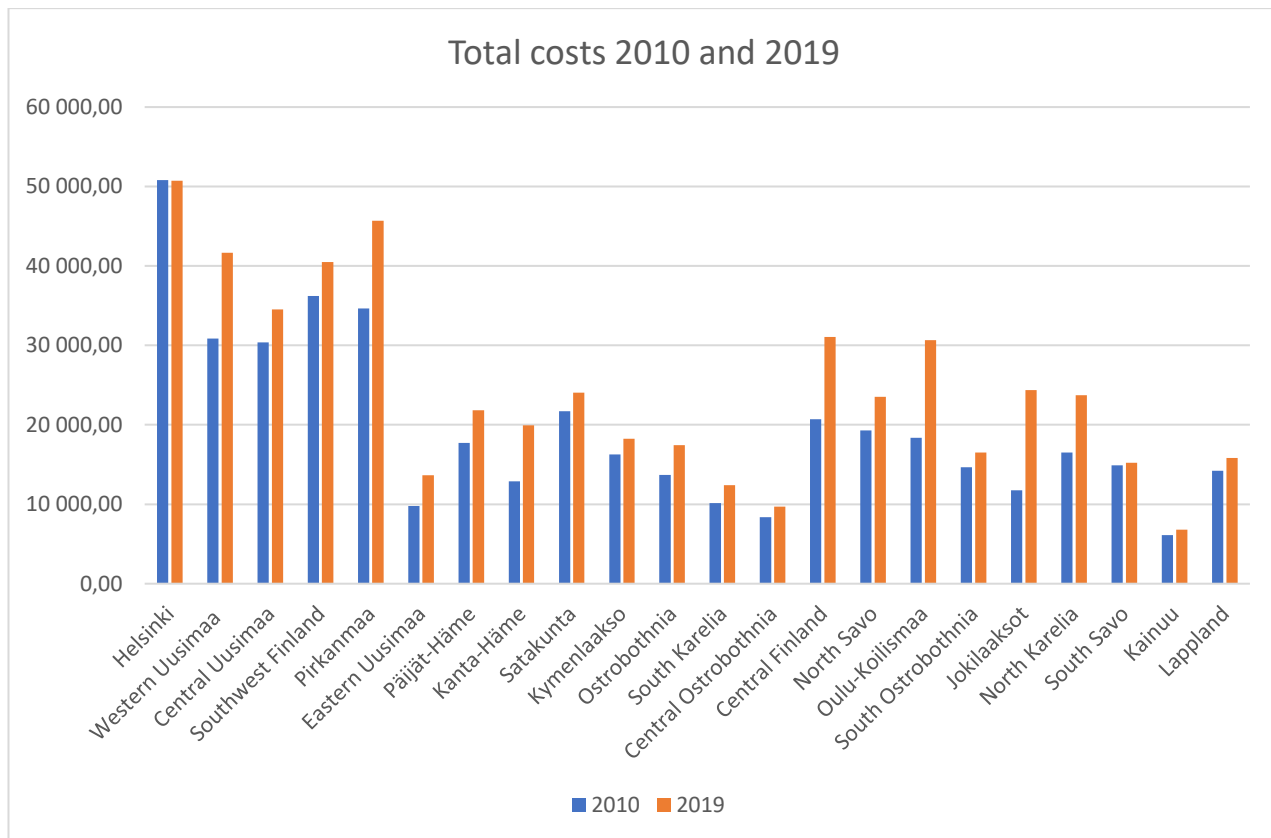


Figure 4: Comparison of total costs per department in 2010 and 2019 (in 1 000 €)

Following this, the general cost structure of all the costs of the rescue service departments was calculated. The costs were divided into the different cost types that could be identified based on the financial data from the Pronto database and the financial statements. These were the following:

- Salaries and fees,
- Social security expenses,
- Procured services,
- Materials, supplies, and goods,
- Allowances and grants,
- Rent fees,
- Other operating expenses, and
- Depreciations.

Based on these calculations of the costs mentioned above, the percentual portion of the total costs was calculated to outline and visualize the cost structure. The figure on the cost structure can be found below Figure 5.

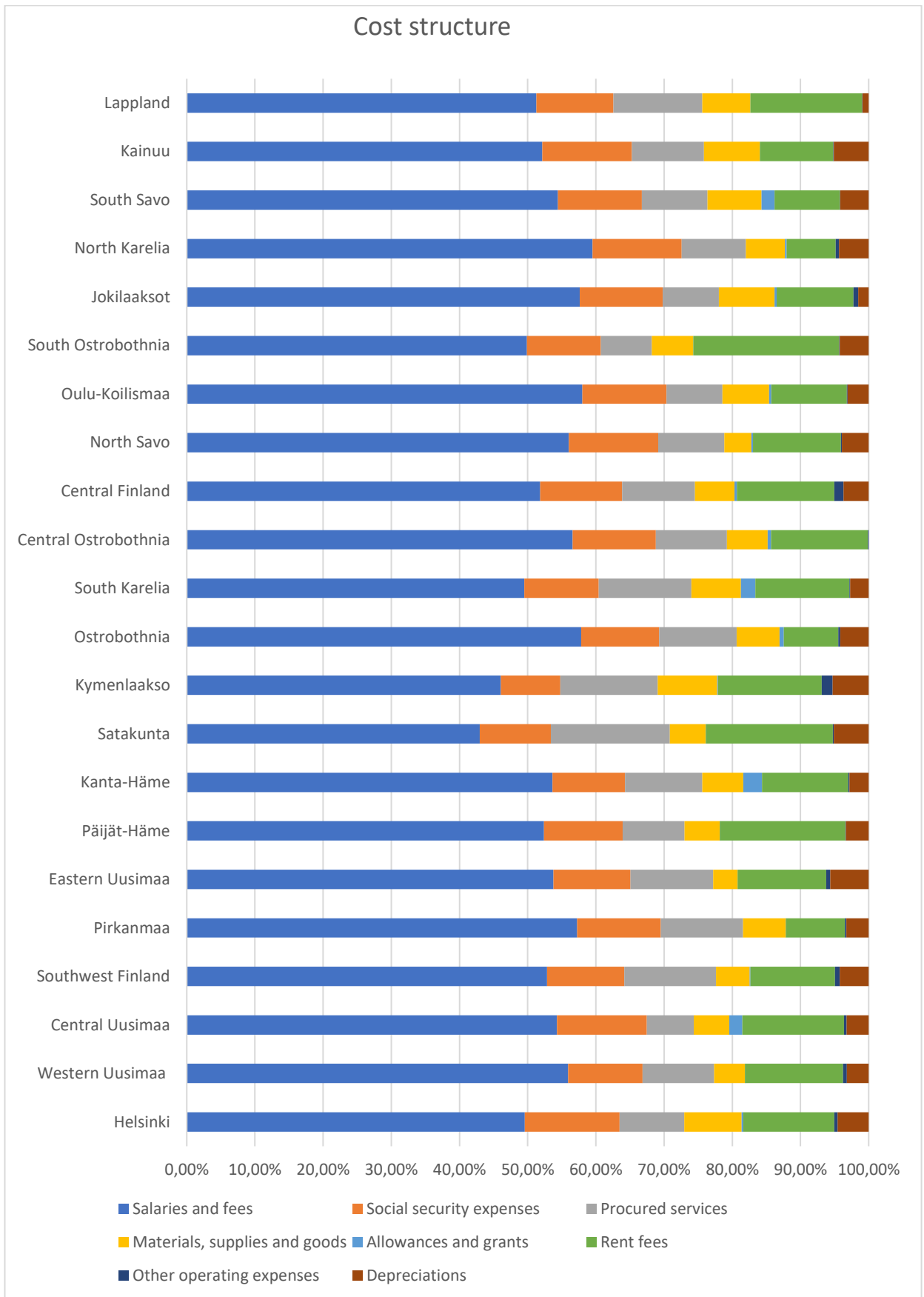


Figure 5: Cost structure of the regional rescue services based on all the tasks

In Figure 5, the percentual distribution and cost structure of all the rescue service departments can be found. The relative costs presented in the above Figure 5 have been calculated with the total costs of the department in question to acquire the relational percentual distribution of the costs.

The cost data found in the internal statistical database Pronto consists of similar posts included in the financial statement in the income statement. In the Pronto database, the costs and incomes are separated and divided between the various functions and expenditure items in the same manner as in the external financial statements.

As is presented in Figure 5 over the cost structure, the personnel costs are the most significant expense item for all the rescue service departments. This is explained by the rescue service departments being service organizations. The expense items, *Salaries and fees*, and *Social security expenses* cover over half of the rescue services costs. More specifically, on average, 65,47 % of the total costs of all the rescue service departments consist of personnel costs.

5.1.2. Income analysis

The income of the rescue service departments was also calculated to supplement the cost information and compare the rescue service departments and their incomes. The incomes in 2019 were compared to the incomes in 2010 to view how these have evolved. Moreover, the comparison was made to be able to compare it to the evolution of the costs. The incomes of the rescue service departments divided into the different functions can be found in the below tables.

From the Pronto data, the incomes of the departments were divided and appointed to the different functions of the rescue service departments. The functions were the same as for the cost data, which were the following: rescue operations, preventive measures, and support activities, which covers the legally required activities. In addition, the costs for the functions emergency care and first response were included, as the rescue service departments also arrange these functions, and data about these functions can

be found from the Pronto database for the incomes as well. From these functions, the total incomes of the rescue service departments were calculated for the year 2019.

The income data can also be divided into the different functions of the rescue service departments based on the data from the Pronto database. The financial income data also follow a similar structure to the external financial statements. They include the following income items: transfers to the rescue services and transfers to the emergency medical care from the municipalities, sales proceeds, fees and charges, subsidies, and grants, rental income, other operating revenue, financial income, and extraordinary incomes.

In Figure 6 below, the total incomes of the rescue service departments can be found (in 1 000 €).

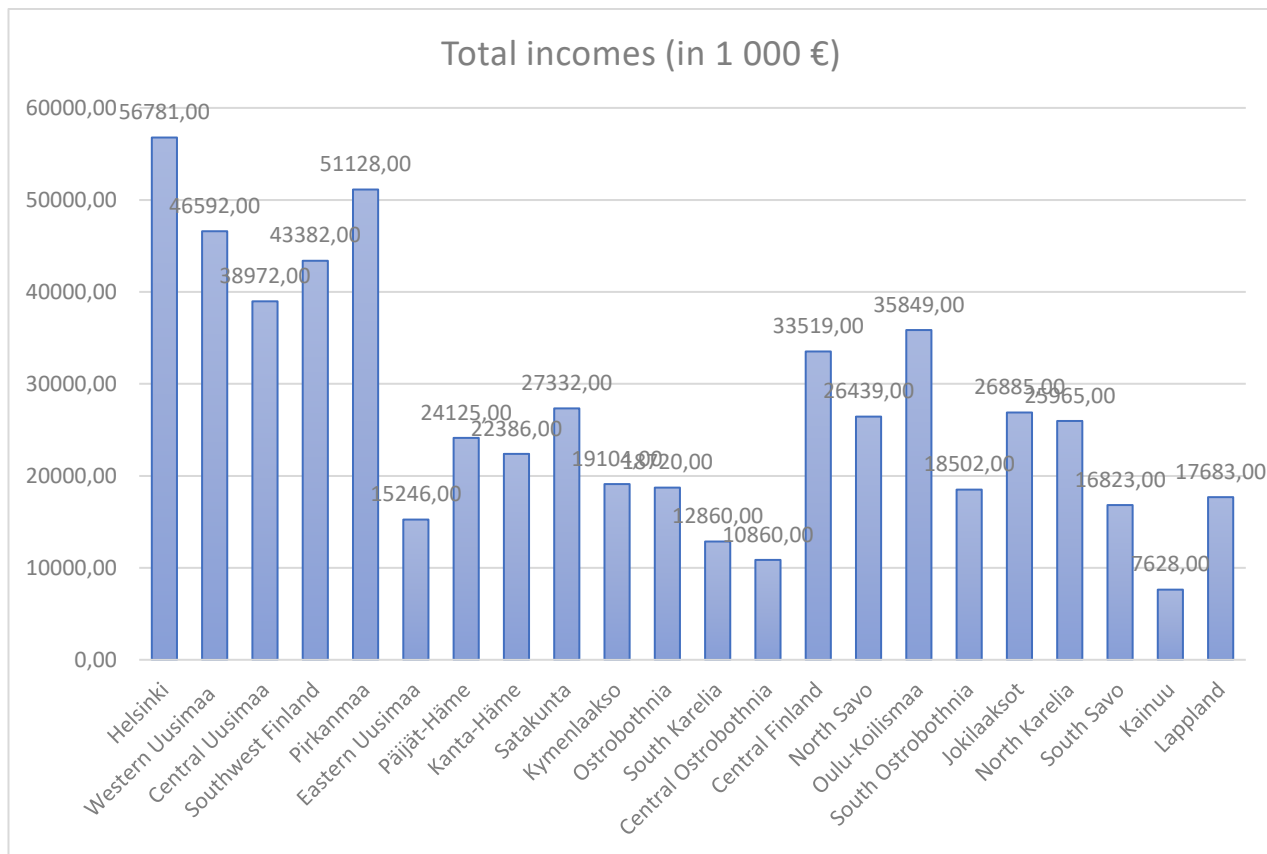


Figure 6: Total incomes (in 1 000 €) of the rescue service departments

The total incomes include all the functions of the rescue service departments, including emergency medical care and first response functions. The total incomes for all the rescue service departments were 596 781 000,00 € in 2019. The department with the

highest income in 2019 was the Rescue Services of Helsinki, with a total income of 56 781 000,00 €. Moreover, the department with the second-highest income was the Rescue Services of Pirkanmaa, with a total income of 51 128 000,00 €. In third and fourth place were the departments of Rescue Services of Western Uusimaa with the total income of 46 592 000,00 € and Rescue Services of Southwest Finland with the total income of 43 382 000,00 €. As the municipalities carry the primary funding responsibility of the rescue service departments and are the purchasers of the services, the costs of the rescue service departments that are not covered by, for example, fees and charges, should be covered by the funding from the municipality to cover the expenses. Therefore, the costs and incomes of the rescue service departments are almost even, and the incomes follow the departments' costs.

The total incomes of the departments mainly consist of the incomes from the legally required tasks. On average, 75,73 % of the total incomes of the departments originate from the legally required tasks. In Figure 7 below, the share of incomes from the legally required tasks can be found. The same variation in the percentage between the departments can be found in the incomes as well. The variation in this case also depends on to which extent the department produces emergency medical care and first response services, in addition to the legally required services.

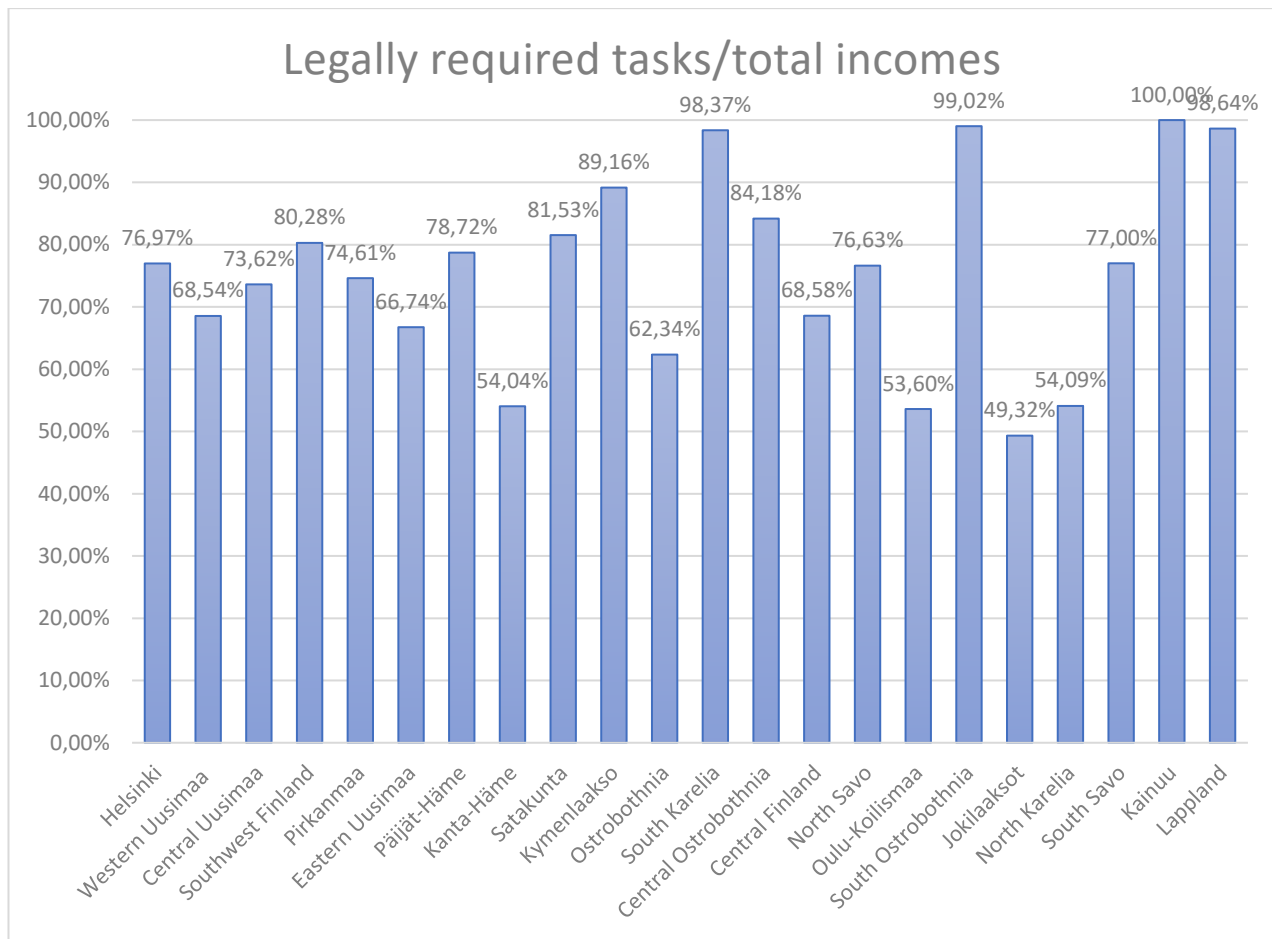


Figure 7: Share of incomes from legally required tasks of total incomes

Further, to examine how the incomes of the rescue service departments have developed between 2010 and 2019, the change in incomes was calculated. The income information for the year 2010 was also gathered through the internal statistical database Pronto. The analysis was conducted to complement the cost analysis and obtain an overall understanding of how the incomes have evolved and how the incomes have varied between the departments. The inflation was considered in the calculations using the same index as for the costs. The value of the index used was 111,9 for the year 2019.

In general, the average growth in incomes was 20,66 %, considering the inflation rate using the price index of public expenditure. The most considerable percentual growth was in the Rescue Services of Jokilaaksot, where the percentual and actual growth rate between 2010 and 2019 was 102,27 %. Most departments had a growth rate in their incomes between 2010 and 2019, except for three departments. The first department

with a decrease in incomes was the Rescue Services of South Savo. The incomes of this department had decreased by 42,68 % when considering the inflation rate. The second department with a negative change in incomes was the Rescue Services of Helsinki, as the incomes of this department had decreased by 3,09 %, considering the inflation rate. The third and final department with a negative change in incomes was the Rescue Services of Satakunta, as the incomes of this department had decreased by 1,82 % with inflation considered.

Below, the change in the total incomes of the departments between the years 2010 and 2019 is presented in Figure 8.

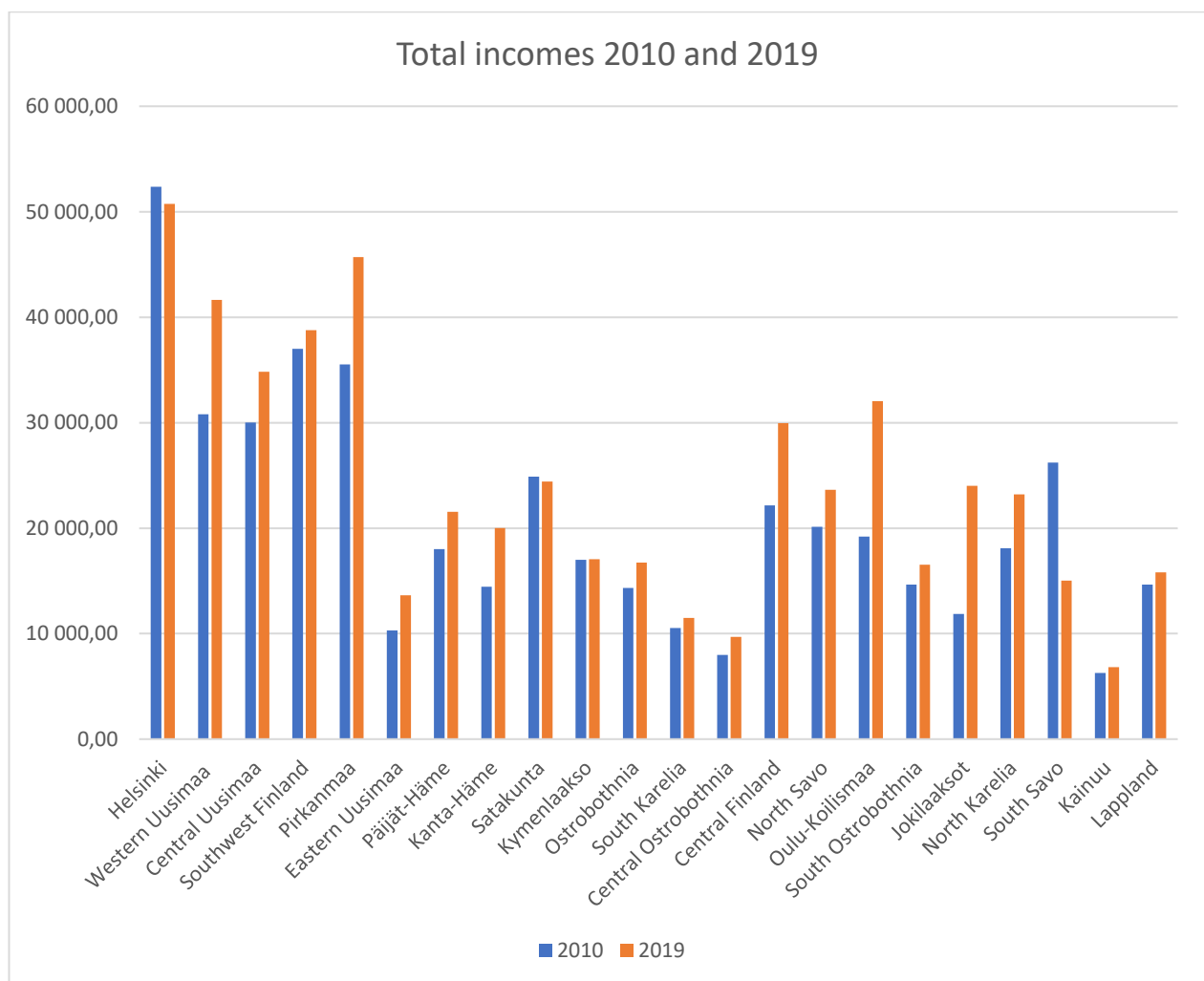


Figure 8: Comparison of total incomes per department in 2010 and 2019 (in 1 000 €)

Further, the structure analysis was conducted on the income data to obtain the same overview of the income structure of the rescue service departments. The incomes were also divided into the different income types identified in the Pronto database and financial statements.

These were the following:

- Transfers to rescue services,
- Transfers to emergency medical care,
- Sales proceeds,
- Fees and charges,
- Subsidies and grants,
- Rent income, and
- Other operating revenue.

The overall income structure can be found in Figure 9 below.

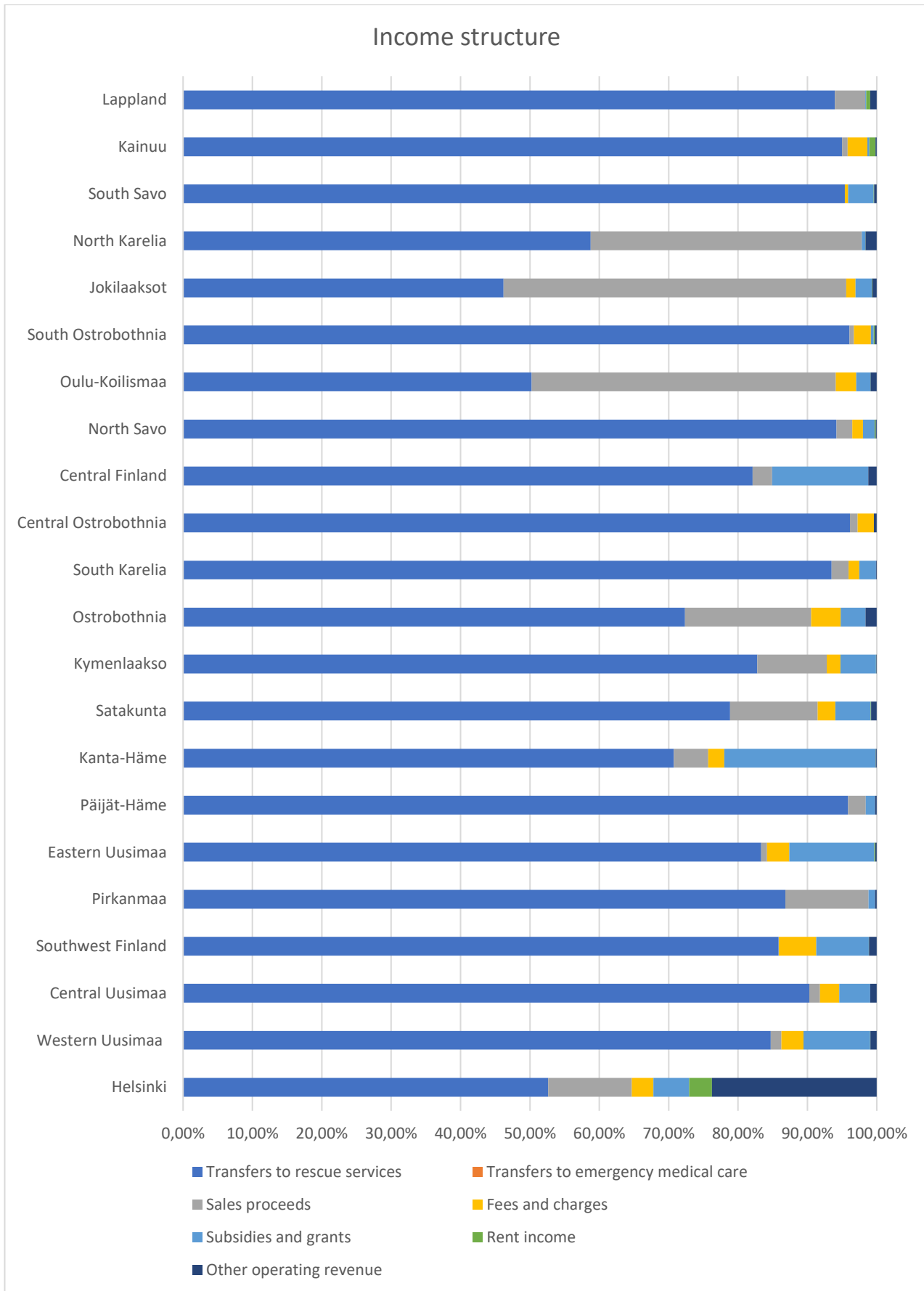


Figure 9: Income structure of the regional rescue services

Figure 9 presents the income structure of the rescue service departments. For most rescue service departments, the largest income source is the transfers to rescue services and their operational activities from the municipalities. On average, these transfers from the municipality to the operations were 76,61 % of the total incomes.

Based on the income structure analysis, for most of the rescue service departments, the most significant source of income is the transfers from the municipalities for their operations.

The transfers being the primary source of income is aligned with the municipalities being the purchasers of these services and having the primary funding responsibility for these purchased services. As the municipalities purchase the services that the rescue service departments produce, the costs of the rescue service departments that are not covered by, for example, fees and charges, should be covered by the funding from the municipality to cover the expenses.

Another interesting finding from the cost structure and income structure figures is that the cost structure seems to be much more consistent over the different rescue service departments compared to the income structure, which has more variation between the departments. The changes and variations in these incomes could be, for example, based on how the emergency care services are arranged in the area of the rescue service department and whether the department receives funding for this task.

5.2. Results from the questionnaire

A questionnaire was sent out to all the 22 regional rescue service departments to gather additional information on the departments' financial information and financial reporting practices. The framework for the questionnaire can be found in the appendices. Answers to the sent questionnaire were received from all the 22 rescue services from their financial department. The questionnaire focused on gathering additional financial data from the rescue service departments to gain a more profound insight into the costs and incomes of the departments and understand what these posts

consist of in more detail. In the following sections, the results from the questionnaire will be presented.

The first question was regarding oil and chemical spill prevention and response measures that the rescue service departments carry out. Most rescue service departments could answer the exact costs and incomes for this activity. A few departments could not determine the specific costs for these functions separately. The Rescue Services of East Uusimaa, Rescue Services of Pirkanmaa, Rescue Services of Satakunta, Rescue Services of Kymenlaakso, and Rescue Services of South Savo could not determine the costs for the preventive measures separately. The Rescue Services of Satakunta responded that working hours are not tracked for this function and, therefore, costs cannot be fully determined for this function. The Rescue Services of Kainuu could determine the costs for this function but not the incomes. The Rescue Services of Central Ostrobothnia could determine the costs, but the department was unsure how the expenses are accounted for in the internal database Pronto. The Rescue Services of North Karjala responded that the costs are accounted for in overhead costs. Therefore, the department is not able to determine the costs separately for this function.

Most variation between the departments was mainly found in the supporting activities considered in the second question. The second question was divided into the various supporting activities that the departments utilize. These were the following: IT administration services, financial administration services, maintenance and technical services, cleaning services, personnel administration, and legal services.

The different functions were produced in various manners between the departments. None of the departments produce all their supporting activities themselves. They all have services that are also purchased, either from the municipality or from external providers. The services purchased from external providers were billed in full according to contracts from all the departments. An exception was the services that the departments receive through the owner municipality and the municipality enterprise group.

In total, 15 departments responded that they receive supporting activities from the municipality, which are not billed for in total. Two departments responded that all

services received through the municipality are billed in general overhead costs, and therefore, costs for specific functions cannot be determined separately. These two departments were the Rescue Services of Central Uusimaa and the Rescue Services of East Uusimaa. A few departments responded that they do not receive any services through the municipality which would not be billed. These were the Rescue Services of Päijät-Häme, the Rescue-Services of Lapland, the Rescue Services of South Savo, and the Rescue Services of Central Uusimaa.

There were also differences in the rent payments and of what these costs consist. Especially when it comes to dividing the rent costs between the rescue services and emergency medical care, there were various methods of doing this. In some cases, only the properties that were used fully by the emergency medical care services were assigned to this function, and in other cases, these costs were assigned in line with the used square footage. Other factors that varied were whether, for example, repair services were included in the rent of the properties.

Otherwise, the costs for the emergency care services were determined and accounted for specifically in all departments. This can be explained by these services being arranged together with the hospital district. Therefore, cost tracking is more advanced and developed for this function.

Based on the answers and additional information from the questionnaire, there are implications that the practices vary between the departments on how costs are formed and whether all the actual costs of the departments are displayed in the reported costs. Factors affecting this were whether the rescue service department received many supporting activities through the municipality. Depending on whether the price of these services is billed fully or at all, hidden costs can emerge. Variations were also identified in which services the rescue service departments receive from the municipality and which services they produce themselves or purchase from external providers. Therefore, the cost data and what the data includes can fluctuate between the departments.

Since some of the services are not billed fully or at all, the likelihood of hidden costs is higher. The hidden costs are problematic as the presence of these possible hidden

costs also varies between the departments. Another concern appears if the services received from the municipality are billed all together in general overhead costs and not appointed to the various functions. Because of this, these costs cannot be reported to the actual functions utilizing these services.

Overall, the main issue with the varying reporting methods that the rescue service departments use is that this can lead to hidden costs within the municipality enterprise group that are not present in the reported costs of the departments. Moreover, as there are variations between the departments where these hidden costs might occur, the financial information between the departments is less comparable. This also means that there are differences in how accurate the cost data of the departments are, as the data of some departments include a higher level of hidden costs.

5.3. Discussion on findings

Based on the data and analysis above, the current economic state of the rescue service departments was first determined to obtain an overall view of the rescue service departments' situation and understand how their situations vary in comparison to each other. This analysis was conducted to obtain a comprehensive understanding of all the rescue service departments.

The financial analysis answered the first part of the first research question set for this thesis: *What is the current economic state of the Finnish rescue service and the local rescue service departments regarding their financial reporting methods?* The analysis was continued with the data gathered from the questionnaire to answer the second part of this research question and acquire a more comprehensive answer.

The analysis continued with analyzing the state of the rescue service departments' more detailed financial information and reporting practices through the questionnaire answers to see how the practices of the rescue service departments differ and identify possible weaknesses in the methods used currently.

Based on the additional financial information received in the answers to the questionnaire, the more detailed cost information of the rescue service departments was analyzed to identify differences between practices. In this analysis, it was found that there are various practices regarding how the costs are reported. It also became clear that as there are differences in mostly the supporting activities that the rescue service departments purchase from either the municipality or external providers, as there are variations in whether these services are billed fully, partially, or at all. Consequently, hidden costs emerge when the price of some services might not be billed in total and as there are variations in the practices between the departments. The different practices also lead to the issue that the financial information of the rescue service departments is not comparable, as there can occur variations in which costs are included and to what degree, for example. Raulinajtys-Grzybek (2014) points out that for pricing based on cost information to work, the cost data needs to be calculated using similar methods amongst all the providers. Detailed knowledge regarding the cost structure and the cost drivers within public sector services enables more focused policymaking and better use of spending public resources. These findings also support the need for developed costing methods.

The second research question was: *Is the financial and economic information received from the local rescue services serving its purpose to function as a base for decision-making and management in the municipalities who are the purchasers of the rescue services?* As the results from the analysis identified, there are hidden costs that might occur, especially in the supporting activities and those received through the municipality. The possible hidden costs lead to a situation where the cost data of the rescue service departments might not always include all the actual costs of the services. Therefore, the accurate costs of all the different functions cannot be determined as precisely.

The last research question was: *How can the Finnish public sector rescue services develop their financial information to support decision-making more thoroughly?* Based on the analysis conducted in this thesis, the need for more precise and unified costing methods was identified. Developed costing methods would lead to more accurate cost data that would ensure that the correct costs of the services are known and that pricing decisions can be made based on the accurate costs. This would

also improve the comparability of the departments' costs, which is an essential factor if the health and social services reform is implemented and the executive power of the state strengthened. As found in the analysis of the current economic state and cost structure of the rescue services, the most significant expense item is personnel costs on average for all the rescue service departments. Therefore, the rescue service departments could benefit from having more precise time-tracking systems in place. The departments and municipalities would receive more precise information on the departments' services' costs, and from which activities these originate. Also, time-driven activity-based costing methods can be beneficial in these types of organizations, found by Keel, Savage, Rafiq, and Mazzocato (2017) as well as Carroll and Lord (2016). The time-driven activity-based costing method can be easier to implement than activity-based costing methods. This method is also often more manageable to maintain within organizations. This aspect of being simpler to use can be seen as both the strength and weakness of the time-driven activity-based costing method (Carroll & Lord, 2016).

Cokins (2015) also proposes that activity-based costing methods can provide functioning calculation methods for public sector organizations, as these methods provide valuable information about the organization's costs. The activity-based cost management method seeks to answer the fundamental questions regarding the incurrence of costs and the accurate price of actions. Many public sector organizations encounter the problem that a spending budget needs to be determined and set for specific periods in advance. Nevertheless, these budgets are often created without enough fundamental facts supporting the decision-making process, which undermines the purpose of this procedure. Moreover, the entire budget process can be based on unfavorable motives. The budget process should be based on the actual resource spending level and, consequently, be equal to the required level of work. (Cokins, 2015)

The issue mentioned above is present within the Finnish rescue services, as found in the analysis. As the cost data of the departments do not necessarily contain all the actual costs, this can undermine the negotiation process of the Service Standard Decision.

The activity-based costing method has received criticism as well. This method can be resource-intensive to use and implement in complex organizations. Identifying specific cost drivers needs notable investment both financially and managerially. Moreover, as the environment in which organizations operate is ever-changing, maintaining these types of costing systems can be investment- and labor-intensive, as these systems require that the cost driver assumptions are revised regularly (Carroll & Lord, 2016). As the Finnish rescue services also are complex organizations, the development of the costing systems will require significant efforts to create functioning systems. Nevertheless, to ensure that the decision-making is based on accurate information, it is necessary to have functioning and suitable costing methods.

Hoozée and Hansen (2018) propose adding activity-based costing methods into time-driven activity-based costing models, as this can lead to better precision. Overall, activity-based costing methods can be seen as more robust systems than time-driven activity-based costing methods. Consequently, the combination of these two could be beneficial for the organization. Hence, the Finnish rescue service could benefit from utilizing aspects from both methods to create a functioning costing method suitable for their needs and departments.

Moreover, the internal database with financial information corresponds to the external requirements for financial reporting to a large extent. As the structure for the external reporting might not be ideal for internal usage, the rescue service departments could benefit from developing the internally used information to support decision-making better.

Based on the answers to the research questions mentioned above, it can be concluded that the Finnish rescue services could benefit from developing their cost accounting methods to acquire more accurate cost data for decision-making. This thesis found that there are weaknesses in the reporting methods and cost data of the rescue service departments through the research questions.

As a result of varying practices between the departments, the data of the departments are not fully comparable. Moreover, the data does not always include all the actual costs of the produced services. As some departments receive several services free of

charge from the municipality, the cost data of the departments do not necessarily portray the actual total costs of the produced services.

This issue is especially relevant with regards to the health and social services reform. The responsibility for organizing the rescue services will be transferred from the municipality to the new welfare counties through the reform. Therefore, accurate total costs for producing the rescue services must be known and considered in the decision-making regarding the reform. Otherwise, a situation can occur where the responsibility is transferred to the new welfare counties, and the actual costs for producing the services are higher than expected, as some of the services are received free of charge from the municipality previously. Therefore, the cost data of the departments do not always portray all the costs of the departments. Thus, the cost data does not accurately represent what it costs to produce the services in total, which is vital for the decision-making, as stated by, for example, Bettner (2015) and Hussey and Ong (2012).

This same issue is essential when considering other public sector reforms as well. The costs of public sector organizations must be accurately determined so that decision-making can be done based on valid information (Bettner, 2015; Hussey & Ong, 2012). Otherwise, the decisions can be based on false assumptions, which can lead to undesirable outcomes. As Pellinen (2003) highlights, accounting information is vital in the decision-making process. Especially during periods when the management of an organization is deciding on the organization's future from economic aspects and intending to lead the organization properly from a financial perspective, accurate accounting information plays a vital role.

Furthermore, the analysis of the cost development from 2010 to 2019 revealed a 28,48 % growth in the departments' costs on average. Public sector organizations are presently under pressure to cut expenses and provide services for less (Silvestre, Marques, Dollery, & Correia, 2019). Many reforms, such as the health and social services reform, aim to produce public services cost-effectively (STM055:00/2019). Cost awareness is crucial to accomplish this agenda. As the analysis in this thesis found, the current cost information of the rescue service departments does not necessarily contain all the actual costs of the produced services. Hence, the data used for decision-making does not fully serve its purpose. Moreover, it raises the question

of whether management accounting methods are utilized to a sufficient degree within the public sector and its administration, as the costs are rising despite constant pressure to produce services more cost-efficiently.

Furthermore, as the health and social services reform will transfer the primary funding responsibility from the municipalities to the state (STM055:00/2019), the need for comparable cost data between the rescue service departments is increased. Currently, the cost data of the departments do not necessarily portray all the total costs of the departments fairly, which means that the data cannot be compared between the departments.

Therefore, based on the findings from this thesis, both public sector organizations and administrators would profit from more developed managerial accounting methods within the public sector. With more advanced cost accounting methods in place, administrators could ensure that decision-making is based on valid information. Moreover, this would ensure that public sector reforms achieve their intended agenda, as all crucial aspects are considered in the decision-making process. This is coherent with the literature review findings, for example, with the findings of Bettner (2015) and Hussey and Ong (2012).

Consequently, the findings from this thesis have contributed to the research field by providing insight into the matter that more advanced managerial accounting methods within the public sector would serve both public sector organizations and administrators in decision-making. Moreover, the analysis has identified issues within the current practices of Finnish rescue services and how these issues might be present in other public sector organizations as well and affect public sector reforms.

6. Conclusions

The purpose of this study was to research how public sector service organizations implementing the purchaser-provider model can develop their cost accounting methods to support decision-making. This was studied in a case study of the Finnish rescue services, which are governed by the owner municipality per the purchaser-provider model. The study was conducted to understand the situation of their financial reporting and costing methods and see how these could be developed to serve the information need of the purchaser-provider model better.

The analysis identified weaknesses in the reporting and costing methods used by the rescue service departments to report costs, as all costs are not necessarily included in the reported costs. The departments and owner municipalities could benefit from developing their costing methods further, which is supported by the findings of Carroll and Lord (2016) and Cokins (2015). Moreover, as the services produced by the rescue service departments are personnel-oriented, time-driven activity-based costing methods could be beneficial for the rescue service departments, supported by findings of Keel, Savage, Rafiq, and Mazzocato (2017) and Carroll and Lord (2016).

The study also found that there are variations in the reporting methods of the rescue service departments. The expense items of the departments do not necessarily include the actual costs of all received services, as the owner municipality does not always charge the department fully for these. Therefore, there can be hidden costs that are not always present in the cost data of the municipal enterprise group. Raulinajtys-Grzybek (2014) emphasizes the need for accurate cost data in the public sector. As for pricing based on cost information to work, the cost data must be calculated using comparable methods amongst all the providers. The author (Raulinajtys-Grzybek, 2014) also highlights that more precise knowledge regarding the cost structure and the cost drivers within public sector services enables more focused policy making and better use of public resources. Therefore, it would be beneficial to develop standardized reporting methods for the financial information to be comparable.

The analysis in this thesis identified issues in the Finnish rescue service departments regarding the costing methods, as they are utilizing the purchaser-provider model for governance. The study identified what issues are present and what further issues the current methods may cause. By analyzing the Finnish rescue services situation, this thesis aimed to understand how public sector service organizations utilizing the purchaser-provider model can develop their costing methods to meet the needs of the model better. The analysis in this thesis also found how managerial accounting methods and cost accounting methods can serve public sector organizations and administrators. Especially when it comes to public sector reforms, functioning cost accounting methods are essential for ensuring that information used for decision-making accurately represents the organization's situation.

6.1. Limitations of this study and suggestions for further research

As this study focused on studying the whole field of rescue services in Finland, the studied area was quite comprehensive. Therefore, this thesis could not examine the situation of a specific department more thoroughly to gain a more in-depth understanding of the situation of one department. Because of this, it would be interesting also to examine the situation of one department more thoroughly. This could be studied by focusing on the decision-making process between the department and owner municipality in more depth, such as observations or interviews. By narrowing down the research area, the study objective can be examined more in-depth. By examining the situation of one department more closely, the degree of the issues found in this thesis could be studied more profoundly and thus understood more thoroughly. Moreover, by understanding the situation of one department more deeply, it could thoroughly be studied how their cost accounting methods could be developed in the most suitable manner.

Swedish summary – Svensk sammanfattning

Kostnadsberäkningsmetoder för att stöda offentliga tjänstebolag – Fallstudie av det finländska räddningsväsendet

Beställar-utförar-modellen, med rötter i New Public Management-teorin, är den rådande förvaltningsmodellen för räddningsväsendet i Finland (SM018:00/2012; Siverbo, 2004). Det finns 22 räddningsverk i Finland som lyder under kommunal förvaltning, vilket innebär att kommunerna är ansvariga för att ordna räddningstjänster inom det egna kommunområdet (Räddningslag, 379/2011). Kommunen köper räddningstjänster av räddningsverket i enlighet med beställar-utförar-modellen. Genom beslut om servicenivå har kommunen och räddningsverket avtalat om pris och servicenivå för tjänsterna för en bestämd tidsperiod (SM018:00/2012). Tillämpning av beställar-utförar-modellen kräver att beställaren har tillgång till korrekt kostnadsinformation för att kunna fastställa priset för upphandlade tjänster, så att priset motsvarar de faktiska kostnaderna för tjänsteproduktionen (Tynkkynen, Keskimäki & Lehto, 2013).

Fungerande kostnadsberäkningsmetoder är viktiga för organisationer som använder beställar-utförar-modell som förvaltningsmodell, för att säkra tillgången till korrekt kostnadsinformation. Syftet med denna avhandling är att undersöka hur offentliga tjänsteorganisationer kan använda sig av kostnadsberäkningsmetoder för att svara på behovet av detaljerad och korrekt kostnadsinformation, som grund för tillämpning av beställar-utförar-modellen.

Förslaget till social- och hälsovårdsreform, som för tillfället är under behandling i den finländska riksdagen, kommer att innebära förändringar även för räddningsväsendet. Reformen kommer att överföra huvudansvaret för finansieringen av räddningsväsendet från kommunerna till staten (STM055:00/2019). Social- och hälsovårdsreformen bidrar till ett ökat behov av jämförbar ekonomisk information mellan räddningsverken.

De teorier som tas upp i avhandlingen berör finländsk redovisningspraxis för offentliga organisationer, New Public Management-modellen och beställar-utförar-modellen, internredovisning och kostnadsberäkningsmetoder för offentliga tjänstebolag. Denna litteratur behandlas för att stöda avhandlingens analysdel.

Denna avhandling grundar sig på en fallstudie av det finska räddningsväsendet. Fallstudien syftar till att belysa det finländska räddningsväsendets nuvarande ekonomiska situation, samt att undersöka ifall rådande redovisningsmetoder och existerande ekonomisk information fungerar som tillräcklig bas för beslutsfattande, och hur dessa vid behov kunde utvecklas. I studien analyseras den ekonomiska information som berör räddningsverken och som används som bas för beslutsfattandet. Den ekonomiska information som används i studien är tagen från räddningsverkens bokslut och från räddningsväsendets interna statistiska databas Pronto. Som tillägg till den ekonomiska informationen från boksluten och den statistiska informationen från Pronto, skickades ett frågeformulär till räddningsverkens ekonomiavdelning för att samla in ytterligare information kring räddningsverkens kostnadsförings- och bokföringsmetoder. De forskningsfrågor som definierats i denna avhandling har besvarats genom analys av insamlad ekonomisk och statistisk information och genom analys av svar på frågeformuläret.

Studiens resultat påvisar att det finns skillnader mellan räddningsverkens kostnadsinformation och att kostnadsinformationen i verkligheten inte motsvarar alla verkliga kostnader. Majoriteten av räddningsverken erhåller till exempel stödtjänster från ägarkommunen utan att ett fullständigt pris faktureras för dessa tjänster, och vissa tjänster fås av kommunen utan någon ersättning. Denna praxis gäller dock inte alla räddningsverk, och det finns även skillnader mellan räddningsverken beträffande vilka tjänster och funktioner det gäller. Denna praxis leder till att det kan förekomma dolda kostnader inom kommunkoncernen som inte framkommer i gällande kostnadsinformation. Kostnadsinformationen är inte fullt jämförbar mellan de olika räddningsverken i och med att det förekommer stora skillnader i intern fakturering av kostnader mellan de olika räddningsverken och inte alla räddningsverk har korrekta uppgifter om de fullständiga kostnaderna. Genom att utveckla räddningsverkens kostnadsberäkningsmetoder, samt genom att skapa

standardiserade metoder för hela branschen kunde den information som används som bas för beslutsfattandet förbättras betydligt.

Genom analys av ekonomiska data och baserat på svaren på forskningsfrågorna, vilka sammanställts och definierats enkom för denna avhandling, kom skribenten även fram till slutsatsen att ekonomistyrningsmetoder, speciellt olika kostnadsberäkningsmetoder, kan stöda offentliga organisationer och beslutsfattande inom den offentliga sektorn. Speciellt i samband med offentliga reformer, som syftar till att skära ner kostnader och producera offentliga tjänster mer kostnadseffektivt, spelar fungerande kostnadsberäkningsmetoder en central roll för beslutsfattandet. Avhandlingens ämne är synnerligen aktuellt i och med social och hälsovårdsreformen, men även för andra offentliga reformer, som syftar till att producera offentliga tjänster mer kostnadseffektivt, samtidigt som tjänsterna förväntas bibehålla kvalitetsnivån. Därmed har denna avhandling och dess studie bidragit med betydelsefulla insikter till detta aktuella och relevanta forskningsområde.

Som fortsatt forskning föreslås att ett räddningsverks situation kunde studeras mer i detalj och på djupet. Detta kunde göras till exempel genom intervjuer, mer djupgående analys av kostnadsberäkningsmetoderna och observationer över beslutfattningsprocessen. Genom en mer djupgående analys av ett räddningsverks situation kunde ytterligare insikter fås över hur kostnadsberäkningsmetoderna borde utvecklas för att bättre stöda beslutsfattande på basen av korrekt framställda kostnader.

References

- ACCA (the Association of Chartered Certified Accountants). (2016). Professional accountants – the future: 50 drivers of change in the public sector. Drivers of change. URL: <https://www.accaglobal.com/gb/en/technical-activities/technical-resources-search/2016/december/50-drivers-of-change-in-the-public-sector.html> (Retrieved 2020-12-19).
- Association of Finnish Municipalities. (2020). *Yleisohje kunnan ja kuntayhtymän tilinpäätöksen ja toimintakertomuksen laatimisesta* (6th ed.). URL: <https://www.kuntaliitto.fi/julkaisut/2020/2084-yleisohje-kunnan-ja-kuntayhtymän-tilinpaatoksen-ja-toimintakertomuksen> (Retrieved 2021-04-15).
- Association of Finnish Municipalities. (2021). *Talous*. URL: <https://www.kuntaliitto.fi/talous> (Retrieved 2021-02-01).
- Barber S.L., Lorenzoni, L. & Ong, P. (2019). Price setting and price regulation in health care: lessons for advancing universal health coverage. World Health Organization. URL: <https://apps.who.int/iris/handle/10665/325547> (Retrieved 2021-01-28).
- Bettner, M. S. (2015). *Using accounting & financial information: Analyzing, forecasting & decision making* (First edition.). New York: Business Expert Press.
- Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative research journal*, 9(2), pp. 27-40. doi:10.3316/QRJ0902027.
- Carroll, N., & Lord, J. C. (2016). The Growing Importance of Cost Accounting for Hospitals. *Journal of health care finance*, 43(2), 172–185. URL: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6910125/> (Retrieved 2021-02-05).
- Cepêda, C. L. M. & Monteiro, A. P. (2020). The Accountant's Perception of the Usefulness of Financial Information in Decision Making – A Case Study in

- Portugal. *Revista brasileira de gestão de negócios*, 22(2), pp. 363-380. doi:10.7819/rbgn.v22i2.4050.
- Cokins, G. (October 5, 2015). A Need for Better Cost Information in the Public Sector. *International Federation of Accountants*. URL: <https://www.ifac.org/knowledge-gateway/preparing-future-ready-professionals/discussion/need-better-cost-information-public-sector> (Retrieved 2021-02-01).
- Cuganesan, S., Dunford, R. & Palmer, I. (2012). Strategic management accounting and strategy practices within a public sector agency. *Management accounting research*, 23(4), pp. 245-260. doi:10.1016/j.mar.2012.09.001.
- David, M. (2006). *Case study research*. London: SAGE.
- Dunleavy, P. & Hood, C. (1994). From old public administration to new public management. *Public money & management*, 14(3), pp. 9-16. doi:10.1080/09540969409387823.
- Erwin, E. J., Brotherson, M. J. & Summers, J. A. (2011). Understanding Qualitative Metasynthesis: Issues and Opportunities in Early Childhood Intervention Research. *Journal of early intervention*, 33(3), pp. 186-200. doi:10.1177/1053815111425493.
- Evans, P. & Bellamy, S. (1995). Performance evaluation in the Australian public sector: The role of management and cost accounting control systems. *The International journal of public sector management*, 8(6), pp. 30-38. doi:10.1108/09513559510100006.
- Haiko, M. & Paloposki, J. (2007). *Omistajapolitiikka pelastustoimessa*. Helsinki: Suomen Kuntaliitto.
- Hallituksen esitys eduskunnalle sote-maakuntien perustamista ja sosiaali- ja terveydenhuollon sekä pelastustoimen järjestämisen uudistusta koskevaksi lainsäädännöksi sekä Euroopan paikallisen itsehallinnon peruskirjan 12 ja 13 artiklan mukaisen ilmoituksen antamiseksi (STM055:00/2019).

- Hansen, D. R. & Mowen, M. M. (2006). *Cost management: Accounting and control*. LEAP Publishing Services. URL: <http://digilib.umpalopo.ac.id:8080/jspui/handle/123456789/197> (Retrieved 2021-02-03).
- Hoozee, S. & Hansen, S. C. (2018). A Comparison of Activity-Based Costing and Time-Driven Activity-Based Costing. *Journal of management accounting research*, 30(1), pp. 143-167. doi: <http://dx.doi.org/10.2139/ssrn.2489118>.
- Hopwood, A. G. (1972). An Empirical Study of the Role of Accounting Data in Performance Evaluation. *Journal of accounting research*, 10, pp. 156-182. doi:10.2307/2489870.
- Horngren, C. T., Bhimani, A., Datar, S. M. & Foster, G. (2002). *Management and cost accounting* (2. ed.). Harlow: FT/Prentice-Hall.
- Hussey, R. & Ong, A. W. M. (2012). *Strategic cost analysis*. New York: Business Expert Press.
- Ježovita, A. (2015). Accounting Information in a Business Decision-Making Process – Evidence from Croatia. *Zagreb international review of economics & business*, 18(1), pp. 61-79. doi:10.1515/zireb-2015-0004.
- Keel, G., Savage, C., Rafiq, M. & Mazzocato, P. (2017). Time-driven activity-based costing in health care: A systematic review of the literature. *Health policy (Amsterdam)*, 121(7), pp. 755-763. doi:10.1016/j.healthpol.2017.04.013.
- Kokko, T., Auvinen, T., Sajasalo, P., & Takala, T. (2018). SHORTCOMINGS OF NEW PUBLIC MANAGEMENT IDEOLOGY FROM THE POWER PERSPECTIVE: EXPLORATION OF POWER RELATIONS IN A FINNISH MUNICIPAL ORGANIZATION. *Management Research and Practice*, 10(2), pp. 5-26. URL: <https://link.gale.com/apps/doc/A543327255/AONE?u=aboacad&sid=AONE&xid=a99d6adf> (Retrieved 2021-02-02).

- Læg Reid, P. & Christensen, T. (2007). *Transcending New Public Management: The Transformation of Public Sector Reforms*. ProQuest Ebook Central <https://ebookcentral-proquest-com.ezproxy.vasa.abo.fi> (Retrieved 2021-02-02).
- Lewis, R. (1960). The Role of Accounting in Decision Making. *The Accounting Review*, 35(1), pp. 37-44. URL: <http://www.jstor.org/stable/243317> (Retrieved 2020-12-11).
- Luoma, M., Oulasvirta, L. & Näsi, S. (2007). *Kansainväliset IPSAS-tilinpäätösstandardit valtion laskentatoimen kehittämisen näkökulmasta*. Tampere: Tampere University Press.
- Määttä, J. (2013). Pelastustoimen tilinpäätös- ja kustannusanalyysi 2007–2010. In Mankkinen (Ed.), *Pelastustoimen tilinpäätös – Analyysi suomalaisen pelastustoimen nykytilasta* (p. 183–210). Suomen Pelastusalan Keskusjärjestö ry (SPEK).
- Mankkinen, T. (Ed.). (2013). *Pelastustoimen tilinpäätös – Analyysi suomalaisen pelastustoimen nykytilasta*. Tampere: Suomen Pelastusalan Keskusjärjestö ry (SPEK).
- Moisio, A. (2015). *Kuntatalouden vakauttaminen ja makro-ohjaus*. Valtioneuvosto. URL: <http://urn.fi/URN:ISBN:978-952-287-140-4>.
- Nasiripour, A., Ashlagi, A. T., Tabibi, J., Maleki, M. & Gorji, H. A. (2012). Financial Statements Analysis Medical Universities in Iran. *Journal of health administration*, 15(49), pp. 77-88. URL: <http://jha.iuums.ac.ir/article-1-1197-en.html> (Retrieved 2021-02-01).
- Niskanen, J. & Niskanen, M. (2003). *Tilinpäätösanalyysi*. Helsinki: Edita Prima Oy.
- Ohje palvelutasopäätöksen sisällöstä ja rakenteesta. (SM018:00/2012). Ministry of the Interior. URL: <http://urn.fi/URN:ISBN:978-952-491-855-8>.
- Otley, D. & Fakiolas, A. (2000). Reliance on accounting performance measures: Dead end or new beginning? *Accounting, organizations and society*, 25(4-5), pp. 497-510. doi:10.1016/S0361-3682(98)00007-5.

- Rashid, Y., Rashid, A., Warraich, M. A., Sabir, S. S. & Waseem, A. (2019). Case Study Method: A Step-by-Step Guide for Business Researchers. *International journal of qualitative methods*, 18, pp. 1–13. doi:10.1177/1609406919862424.
- Raudasoja, K. & Johansson, M-L. (2009). *Esimies talouden johtajana julkishallinnossa*. Helsinki: WSOYpro Oy.
- Rescue Act [Pelastuslaki]. (379/2011).
- Rivenbark, W. C. (2005). A Historical Overview of Cost Accounting in Local Government. *State & local government review*, 37(3), pp. 217–227. doi:10.1177/0160323X0503700304.
- Seppänen, H. (2011). *Yrityksen analysointi ja tilinpäätös*. Helsinki: Kauppakamari.
- Silvestre, H. C., Marques, R. C., Dollery, B. & Correia, A. M. (2019). Is cooperation cost reducing? An analysis of public–public partnerships and inter-municipal cooperation in Brazilian local government. *Local Government Studies*, 46(1), pp. 68–90. doi:10.1080/03003930.2019.1615462.
- Siverbo, S. (2004). The Purchaser-provider Split in Principle and Practice: Experiences from Sweden. *Financial accountability & management*, 20(4), 401–420. <https://doi.org/10.1111/j.1468-0408.2004.00201.x>.
- Smith, C. J. & Rauhut, D. (2019). Still ‘skiing their own race’ on New Public Management implementation? Patient choice and policy change in the Finnish and Swedish health-care systems. *International review of administrative sciences*, 85(1), pp. 62-79. doi:10.1177/0020852318801498.
- Statistics Finland. (n.d.). *Joint municipal authority*. URL: https://www.stat.fi/meta/kas/kuntayhtyma_en.html#tab1 (Retrieved 2020-11-23).
- Tammi, J. (2006). *Toimintolaskennan käyttömahdollisuudet ja hyödyt kunnan johtamistyössä*. [Doctoral dissertation, University of Tampere]. Trepo. URL: <http://urn.fi/urn:isbn:951-44-6632-2>.
- THL. (2020). *Social welfare and health care reform*. URL: <https://thl.fi/en/web/social-welfare-and-health-care-reform/the-reform-in-a-nutshell> (Retrieved 2020-12-19).

- Tynkkynen, L., Keskimäki, I. & Lehto, J. (2013). Purchaser–provider splits in health care—The case of Finland. *Health policy (Amsterdam)*, 111(3), pp. 221-225. doi:10.1016/j.healthpol.2013.05.012.
- Van Helden, G. J. (2005). Researching Public Sector Transformation: The Role of Management Accounting. *Financial accountability & management*, 21(1), pp. 99-133. doi:10.1111/j.0267-4424.2005.00211.x.
- Virtanen, P., Stenvall, J. & Rannisto, P. (2015). *Tiedolla johtaminen hallinnossa: Teoriaa ja käytäntöjä*. Tampere: Tampere University Press.
- Webster, C. & Hoque, Z. (2005). Cost Information in the New Public-Sector Environment: Cost Accounting Change in a State-Owned Hospital. *Australian accounting review*, 15(37), pp. 47-54. doi:10.1111/j.1835-2561.2005.tb00302.x.
- Zia, Y. A. & Zeb Khan, M. Z. (2014). A Comparative Review of Traditional and New Public Administration and Critique of New Public Management. *Dialogue (1819-6462)*, 9(4), 428–442. URL: <https://search-ebshost-com.ezproxy.vasa.abo.fi/login.aspx?direct=true&db=a9h&AN=113853186&site=eheho-live> (Retrieved 2021-02-06).

Appendix

KYSELYRUNKO / TP 9, TALOUS JA KUSTANNUSLASKENTA 2021

1. Öljyntorjunta ja aluskemikaalivahinkojen torjunta, 2019

Ölly- ja aluskemikaalivahinkojen torjunnan tuotot vuonna 2019?

Ylläpito- ja koulutus? (ÖSRA-avustus, €)

Kalustohankinnat? (ÖSRA-avustus, €)

Vahingontorjunnoista saadut tuotot? (€)

Onko nämä merkitty Prontoon myyntituotoiksi vai asiakasmaksuiksi?

Mihin tuottolajiin ÖSRA-avustus on Prontoissa merkitty? Tuet ja avustukset?

Ölly- ja aluskemikaalivahinkojen torjunnan menot vuonna 2019:

Ylläpito- ja koulutus? (€)

Kalustohankinnat? (€)

Vahingontorjunta? (€)

Paljonko oli öljyntorjuntakaluston poistamaton hankintahinta 31.12.2020? (€)

Öljyntorjuntakaluston poistojen osuus vuonna 2019? (€) Tai kuvaus näiden poistotavasta ja -ajasta.

2. Tukipalvelut

Ovatko tietohallinnon palvelut olleet pelastuslaitoksenne omaa toimintaa kokonaan vai osittain/kokonaan ostettu palvelu vuonna 2019?

Jos ostopalvelua: Millaisia palveluita on ostettu? Laskutetaanko palvelusta täysimääräisesti? Mikä on ollut laskutusperuste?

Mikä on ollut tietohallinnon ostopalveluiden osuus vuonna 2019? (€)

Ovatko taloushallinnon palvelut (taloushenkilöt, palkanlaskenta ja kirjanpito) olleet pelastuslaitoksenne omaa toimintaa kokonaan vai osittain/kokonaan ostettu palvelu vuonna 2019?

Jos ostopalvelua: Millaisia palveluita on ostettu? Laskutetaanko tästä palvelusta täysimääräisesti? Mikä on ollut laskutusperuste?

Mikä on ollut taloushallinnon ostopalveluiden osuus vuonna 2019? (€)

Ovatko huolto- ja tekniset palvelut olleet pelastuslaitoksenne omaa toimintaa kokonaan vai osittain/kokonaan ostettu palvelu vuonna 2019?

Jos ostopalvelua: millaisia palveluita on ostettu? Laskutetaanko tästä palvelusta täysimääräisesti? Mikä on ollut laskutusperuste?

Mikä on ollut huolto- ja teknisten ostopalveluiden osuus vuonna 2019? (€)

Ovatko siivouspalvelut olleet pelastuslaitoksenne omaa toimintaa kokonaan vai osittain/kokonaan ostettu palvelu vai osa kiinteistövuokria?

Jos ostopalvelua: millaisia palveluita on ostettu? Laskutetaanko tästä täysimääräisesti? Mikä on ollut laskutusperuste?

Mikä on ollut siivousostopalveluiden osuus vuonna 2019? (€)

Ovatko henkilöstöhallinnon palvelut olleet pelastuslaitoksenne omaa toimintaa kokonaan vai osittain/kokonaan ostettu palvelu vuonna 2019?

Jos ostopalveluita: Millaisia palveluita on ostettu? Laskutetaanko tästä täysimääräisesti? Mikä on ollut laskutusperuste?

Mikä on ollut henkilöstöostopalveluiden osuus vuonna 2019? (€)

Ovatko juridiset palvelut olleet pelastuslaitoksenne omaa toimintaa kokonaan vai osittain/kokonaan ostettu palvelu vuonna 2019?

Jos ostopalvelua: millaisia palveluita on ostettu? Laskutetaanko tästä täysimääräisesti? Mikä on ollut laskutusperuste?

Mikä on ollut juridisten ostopalveluiden osuus vuonna 2019? (€)

Mikä on ollut vuoden 2019 muiden ostopalveluiden euromääräinen osuus, poisluettuna edellä mainitut erät? Mitä palveluja nämä ovat olleet?

Onko olemassa muita tukipalveluita, joita pelastuslaitos saa omistajakunnalta/kuntayhtymältä, ja joista ei peritä hintaa tai hinta ei ole täysimääräinen?

3. Ensihoidon synenergia

Kuinka moni pelastaja sai palkkansa ensihoidosta vuonna 2019? (hlöä)

Mikä oli kyseisten palkkojen yhteissumma? (€)

Onko laskutus toteutettu sisäisenä palveluiden ostona (ts. laskutetaan sairaanhoitopiiriä)?

Miten alueen sairaankuljetus on toteutettu? Esimerkiksi arviot pelastuslaitoksen, sairaanhoitopiirin ja yksityisten toimijoiden osuuksista (%)?

4. Vuokrat

Millä perusteilla paloasemakiinteistöjen vuokratustannukset pelastuslaitokselle määräytyvät?

Ensihoidon käyttämä osuus kiinteistöistä? (%)

Kohdennetaanko vuokria ensihoidon puolelle täysimääräisesti? kyllä – ei, miksi?

5. Korjausvelka, arvio ja kuvaus nykytilanteesta

- Öljyntorjuntakalusto, kertymä vuoteen 2022 mennessä? (€/kuvaus). Millaista kalustoa nämä koskevat?

- Pelastuskalustoinvestoinnit, kertymä vuoteen 2022 mennessä? (€/kuvaus). Millaista kalustoa nämä koskevat?

- Paloasemakiinteistöt (tai korjausvelan osuus vuokrasta), kertymä vuoteen 2022 mennessä? (€/kuvaus) Kuinka moneen kiinteistöön korjausvelka kohdistuu?

6. Pelastuslaitoksen leasingvastuut

Leasingvastuut 31.12.2020? (€)

Vuodelle 2021 suunnitellut uudet leasingvastuut? (€)

Vuodelle 2022 suunnitellut uudet leasingvastuut? (€)

Vuoden 2023 ja sen jälkeisten vuosien leasingvastuiden osuus ja kesto?

2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, n. (€)

7. Sopimushenkilöstön ja -toiminnan kustannukset, vuosi 2019

- Sivutoimisten palkkakulut? (€)

- Sopimuspalokuntien hälytysosastoille maksamat palkkakulut? (€)

- Sopimuspalokuntakorvaukset? (€)

- Sopimuspalokunnille maksetut avustukset? (€)

- Sopimuspalokunnille maksetut vuokrat ja kiinteistökorvaukset? (€)

8. Pelastuslaitoksen rahoitusvaje, arvio

Toimintavalmiuden parantaminen: resurssit ja lisäkustannukset? (HTV (vakituinen ja sopimus.) ja €)

Varallaolon korvaava järjestelmä: resurssit ja lisäkustannukset? (HTV (vakituinen ja sopimus.) ja €)

Toimintavalmiuden ja varallaolon rahoitusvaje jakautuu vuosille 2021—2030, tarkempi suunnitelma rahoitusvajeen kohdentumisesta vuositasolla: 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030? (€)

Ovatko pelastuslaitoksen nykyiset ICT-henkilöstöresurssit mielestänne riittävät?

Kyllä. Jos ei, millaisissa tehtävissä resurssit katsotaan puutteellisiksi/riittämättömiksi?

Mikä olisi henkilöresurssien tarve (HTV)? Ja sitä vastaava rahoitustarve (€)?

9. Kuntien omistajaohjaus

Määrittele 3—4 tärkeintä ohjaavaa mittaria (toiminnallisia ja/tai taloudellisia), joilla omistajaohjaus alueellanne toteutuu?

1

2

3

4

Questionnaire translated to English:

QUESTIONNAIRE FRAMEWORK / FINANCE AND COST ACCOUNTING 2021

1. Oil and chemical spill prevention and response, 2019

What were the revenues from oil and chemical spill prevention and response in 2019?

- Maintenance and training? (ÖSRA grant, €)

- Equipment purchases? (ÖSRA grant, €)

- Revenue from oil and chemical spill prevention and response? (€)

Are these recorded as sales revenue or customer fees in Pronto?

In which income type is the ÖSRA grant entered in Pronto? Subsidies and grants?

What was the cost of oil and chemical spill in 2019:

- Maintenance and training? (€)

- Equipment purchases? (€)

- Damage control? (€)

How much was the undepreciated purchase price of the oil and chemical spill response equipment on December 31, 2020? (€)

How much was the share of depreciation of oil and chemical spill response equipment in 2019? (€) Or a description of how and when these will be depreciated.

2. Support Services

Have the information management services been a fully or partially of your rescue service's own operations / fully purchased service in 2019?

If a purchased service: What kind of services have been purchased? Is the service billed in full? What has been the billing basis?

What has been the share of IT purchasing services in 2019? (€)

Have the financial administration services (financial personnel, payroll, and accounting) been a service of your rescue service's own operations fully or partially / fully a purchased service in 2019?

If a purchased service: What kind of services have been purchased? Will this service be billed in full? What has been the billing basis?

What has been the share of financial service purchasing in 2019? (€)

Have maintenance and technical services been a service of your rescue service's own operations fully or partially / fully a purchased service in 2019?

If a purchased service: what kind of services have been purchased? Will this service be billed in full? What has been the billing basis?

What has been the share of maintenance and technical purchasing services in 2019? (€)

Have the cleaning services been a service of your rescue service's own operations fully or partially / fully purchased service or part of the property rent for your rescue service's own operations?

If a purchased service: what kind of services have been purchased? Will this be billed in full? What has been the billing basis?

What has been the share of cleaning purchasing services in 2019? (€)

Have the human resources management services been a service of your rescue service's own operations fully or partially / fully purchased service in 2019?

If a purchased service: What kind of services have been purchased? Will this be billed in full? What has been the billing basis?

What has been the share of personnel purchasing services in 2019? (€)

Have the legal services been a service of your rescue service's own operations fully or partially / fully purchased service in 2019?

If a purchased service: what kind of services have been purchased? Will this be billed in full? What has been the billing basis?

What has been the share of legal purchasing services in 2019? (€)

What has been the share of other purchased services in euros in 2019, excluding the above-mentioned items? What services have these been?

Are there any other support services that the rescue service receives from the owner municipality / association of municipalities and for which no price is charged, or the price is not fully charged?

3. First aid synergy

How many rescuers received their salaries for emergency care in 2019? (personnel)

What was the total of those salaries? (€)

Has the invoicing been implemented as an internal purchase of services (i.e. is the hospital district billed)?

How is the ambulance transport in the area executed? For example, estimates of the shares (%) of the rescue service, the hospital district, and private actors?

4. Rent

On what grounds are the rental cost of fire station properties determined to the rescue services?

The share of real estate / property used by emergency care? (%)

Are rents fully allocated to the emergency services? yes - no, why?

5. Repair debt, estimate and description of the current situation

- Oil spill response equipment, accumulation by 2022? (€ / description). What kind of equipment do these apply to?
- Rescue equipment investment, accumulation by 2022? (€ / description). What kind of equipment do these apply to?
- Fire station properties (or repair debt share of rents), accumulation by 2022? (€ / description) How many properties are subject to repair debt?

6. Leasing liabilities of the rescue service

- Leasing liabilities on 31.12.2020? (€)
- New leasing liabilities planned for 2021? (€)
- New leasing liabilities planned for 2022? (€)
- Proportion and duration of leasing liabilities in 2023 and beyond?
 - o 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, n. (€)

7. Contract personnel and operating costs, 2019

- Salary costs for part-time personnel? (€)
- Salary costs paid by contract fire brigades to the emergency departments? (€)
- Contract fire brigade compensation? (€)
- Grants paid to contract firefighters? (€)
- Rents and property compensation paid to contract fire brigades? (€)

8. Rescue service funding gap, estimate

Operational capability/readiness improvement: resources and additional costs? (man-year (permanent and contract.) And €)

Standby replacement system: resources and additional costs? (man-year (permanent and contract.) And €)

The funding gap for operational readiness and standby is divided into 2021–2030, please provide a more detailed plan for allocating the funding gap on an annual basis: 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030? (€)

Do you think that the rescue service's current ICT human resources are sufficient?

Yes. If not, in what tasks are resources considered insufficient?

What would be the need for human resources (HR)? And the corresponding financing need (€)?

9. Municipal ownership and governance

Define the 3—4 most important guiding indicators (functional and / or financial) with which corporate governance is implemented in your area?

- 1
- 2
- 3
- 4