

Impact of accounting information systems on supply chain decision making in Eagle Kulje- tus Oy.

Abstract

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Title of the thesis Impact of accounting information systems on supply chain decision making in Eagle Kuljetus Oy		
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Abstract <p>This research paper investigates the impact of accounting information systems (AIS) on supply chain decision-making in Eagle Kuljetus Oy, a logistics company operating in the highly competitive postal delivery industry in Finland. The study aims to analyze how AIS influences organizational strategies and operational effectiveness in the context of supply chain management.</p> <p>The research begins by exploring the evolution of AIS in supply chain management, highlighting their transformation from basic financial transaction tracking systems to comprehensive tools that gather and analyze data from various facets of the supply chain. The growing complexity of global supply chains and technological advancements, such as cloud computing, big data analytics, and artificial intelligence, have played significant roles in shaping the capabilities of AIS.</p> <p>The effect of AIS is positive for supply chain management. Such systems help to increase supply chain visibility, which allows the business to notice and deal with disruptions immediately. Through them organizations can make decisions on the choice of suppliers, the best inventory, logistics optimization, and many other important factors. This helps reduce costs and improves overall efficiency.</p> <p>Supplies chain management decision-making, inventory management system evaluation, and vendor relationship management in Eagle Kuljetus Oy are research objectives. The study focuses on issues surrounding the relationship between AIS and supply chain decision-making within the company; this encompasses research questions on AIS and supply chain decision-making.</p>		
Keywords Accounting information systems, AIS, supply chain decision-making, supply chain management, Eagle Kuljetus Oy		

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1 Introduction

The Accounting Information System (AIS) refers to the system that a company employs to accumulate, keep, organize, manipulate, retrieve, and present its financial information and data (Belfo & Trigo, 2013). AIS is a computer-based accounting activity tracking system that utilizes information technology resources. It integrates traditional forms of accounting including GAAP with contemporary information technology capabilities.

Organizations are now increasingly aware that effective supply chain management is vital to achieving sustainable competitive advantages in the current business arena. However, the development of more sophisticated AIS is one of the most significant aspects that may contribute to better supply chain decision-making as technology continues to advance.

The competition, global supply chains, and the increasing demand for lean processes are the backdrop against which businesses operate today. Supply chain management cannot be overemphasized in such an environment. Such organizations not only seek to satisfy customer demands efficiently but they endeavor to accomplish it at minimum costs and overall effectiveness. Therefore, it entails a full grasp as well as an adequate utilization of all the available technological tools; in which case, the AIS becomes an indispensable aspect.

In the fourth industrial revolution where digital technologies are becoming integrated with AI and data analytics, it starts to become obvious that AIS can revolutionize supply chain decision-making. Businesses must embrace change or face their gradual demise; they must embrace new methods as traditional methods are slowly being replaced by scientific, data-driven, technologically facilitated approaches. This thesis examines the consequences of AIS on supply chain management, exploring the different ways such systems alter organizational strategies and operational effectiveness.

1.1 The Evolution of AIS in Supply Chain Management

Accounting Information Systems (AIS) have undergone significant transformations over the years, profoundly impacting supply chain management (SCM) practices (Lourenço & Ravetti, 2017). While AIS was initially confined to tracking financial transactions and generating basic reports, its capabilities have expanded far beyond these rudimentary functions. Modern AIS can now gather and analyze data from every facet of the supply chain, encompassing inventory levels, supplier performance, and logistical operations (Nurdiono, et al., 2018). This comprehensive data collection and analysis empower businesses to make

informed decisions, optimize processes, and streamline operations, ultimately reducing costs and enhancing supply chain efficiency (Sabti, et al., 2023).

The evolution of AIS is driven by several key factors. One prominent factor is the growing complexity of supply chains, characterized by global expansion and intricate interdependencies (Al-Rawashdeh, et al., 2023). Navigating these complex networks effectively necessitates enhanced visibility and control, which AIS has proven invaluable in providing.

Technological advancements have also played a pivotal role in shaping the evolution of AIS. Cloud computing, big data analytics, and artificial intelligence (AI) have emerged as transformative forces, enabling the collection, analysis, and utilization of data in unprecedented ways (Lee & Mangalaraj, 2022). These advancements have paved the way for the development of sophisticated AIS applications that deliver even greater value to businesses striving to optimize their supply chains.

The impact of AIS on SCM has been multifaceted and overwhelmingly positive. AIS has enhanced supply chain visibility, enabling businesses to identify and address potential disruptions promptly and effectively. By providing access to a wealth of data, AIS empowers businesses to make informed decisions regarding supplier selection, inventory management, and logistics optimization, ultimately reducing costs and improving overall efficiency.

Eagle Kuljetus Oy is a subcontractor of Posti which is the postal delivery company in Finland. Eagle Kuljetus was established on the year 2020. Eagle Kuljetus Oy company is a logistic company that relies on an effective supply chain to meet its objective. It manages the flow of postal services and information systems in this highly competitive and fast business environment. Account Information System enhances data accuracy and provides real-time data analytics which enables well-informed decisions and helps in strategic choices for sustainability (Suh & Lee, 2018). By the key performance indicator, the constant evaluation helps Eagle Kuljetus Oy to make the data-driven decision. This empowers the company to plan better routes, allocate the resources efficiently and effectively, and improve the service quality. The Accounting Information System compliances with the financial regulations which is an integral part of shaping Eagle Kuljetus Oy.

1.2 The objective of The Study

The main objective of the study will be to analyze the Impact of accounting information systems on supply chain decision-making in Eagle Kuljetus Oy.

The Subsidiary objectives of the research work will be:

- To identify supply chain decision-making in Eagle Kuljetus Oy.

- To evaluate the inventory management system in Eagle Kuljetus Oy.
- To examine vendor relationship management in Eagle Kuljetus Oy.

1.3 Research Question

This study addresses the following research questions:

- Is there any relation between supply chain decision-making and information management systems?
- Is there any relation between supply chain decision-making and vendor relationship management?

1.4 Limitations of The Study

Every study has its limitations, and this one is no exception. Here are some potential constraints that might affect our findings:

Sample Representativeness: The survey is carried out for this study, and this survey is distributed via hard paper. This means our findings might not represent all possible categories of respondents.

Response Bias: Another limitation is response bias. Some respondents might not answer the survey honestly, or they might not fully understand the questions. This could affect the accuracy of our data.

Limited Scope: While this research aims to understand the impact of accounting information systems on supply chain decision-making, our study might not cover all aspects of this complex issue. For example, there are many different types of issues, and our study might not be able to consider all these variations.

Self-reported Data: Our study relies on self-reported data, which means we're depending on the respondents to accurately report their answers to the questions provided. This could lead to inaccuracies if respondents forget or misinterpret their behavior.

1.5 Thesis Process

The thesis process entailed several important steps and actions that were crucial to carrying out the research and writing the thesis. The following outline describes the thesis process:

Literature Review: To understand the existing knowledge and research gaps as regards the issue at hand, a comprehensive literature review was done. It helped to identify the key theories, concepts, and previous studies that had relevance to the research questions.

Research Design: The study design and methodology were quantitative. They defined the target population, sampling techniques, data collection methods, and data analysis procedures.

Data Collection: The nature of research defined the methods used to collect data as surveys. Data collection adhered to ethical considerations.

Data Analysis: The data was analyzed using appropriate statistical techniques. The quantitative data analysis involved descriptive statistics, correlation analysis, and regression analysis. This analysis was aimed to answer the research questions or to test the hypotheses in the research. Analysis of the results gave insights and supported the assertions from the data set.

Results and Discussion: The results of the research were discussed. These results were presented by using tables, and graphs, on the nature of the data and research design. The data were interpreted, discussed the implication for this study, and compared with previous studies or the existing theories.

Conclusion and Recommendations: The conclusions were drawn from the findings, providing a summary of the main findings and their implications. These suggestions were also provided on possible future research or practical applications.

2 Literature review

2.1 Accounting Information System (AIS)

The accounting information system includes various data collection methods, as well as ways of processing, analyzing, and interpreting of financial status of an organization. It provides real-time financial analysis enabling cost tracking to monitor the performance of an organization. In this contemporary era, the integration of organizational resource planning and accounting information systems can be efficient for making systematic decisions. Research has revealed that accounting information systems can provide actual financial data which improves performance and cost minimization (Monteiro & Cepêda, 2021). Accounting information system facilitates the process of decision-making, pricing of product, selection of supplier, and sound management of inventory (Putra & Khalisa, 2023). Accounting information systems also support auditing and facilitate budgetary accounting through computer-based mechanisms for enhancing performance (Dalle, et al., 2021).

AIS as a foundation in modern business is very important for increasing financial transparency and real-time decision-making. It seamlessly interacts with organizational frameworks thus enabling decision-makers to have easy access to critical financial metrics that enable proactive management of resources as well as the whole supply chain (Fruto, 2020). AIS is important in monitoring and evaluating the financial health of an organization for a range of stakeholders, for instance, accountants, consultants, business analysts, managers, chief financial officers, auditors, regulators, and tax agencies (BinSaeed, et al., 2023). In today's fast-growing business environment, the ability to make instant and informed decisions can determine whether a firm stays afloat or not, and therefore this real-time visibility becomes especially critical.

With AIS, one can continually monitor the cost with a high level of detail in financial inflows and outflows. It is a crucial feature that aids in cost management ahead of time, enabling companies to uncover areas of waste or excessive expenditure quickly. Provision of cost-related information on time helps in making decisions that are necessary to implement corrective measures immediately leading to cost-effectiveness and efficacy of the operations (Saad, 2023). The system can collect, store, manage, process, retrieve, and report on the daily financial operations of the organization. This improves the quality and assurance of financial information and conforms to the set guidelines. AIS, therefore, represents a centralized source of financial data, which supports the decision-makers in understanding the whole of the organization's financial situation.

2.1.1 Integration with Organizational Resource Planning

Integrating AIS with organizational resource planning improves the decision-making process by looking at resources both financially and operationally (Lata, 2021). Such integration results in coordination within the organization, therefore enhancing the quality of decisions. The effectiveness of AIS implementation under enterprise resource planning (ERP) depends on the fit of the systems with the dominant view in the organization, technology appropriateness, and cultural correspondence (Agwanda & Ondoro, 2023). Other literature reviews have established a connection between AIS Implementation under ERP, accountant competency, useful information, and good decision-making. Firstly, the use of AIS with Enterprise resource planning (ERP) leads to coordination in the organization which improves the quality of the decisions. Another research highlighted how new and emerging technologies including big data analytics, business intelligence, and machine learning are used to improve the decision-making performance within AIS. Also, there has been a discussion about incorporating financial information for real-time monitoring and analysis into AIS, highlighting the significance of real-time reporting in accounting information systems. The second research perspective focuses on how AIS improves financial performance through on-time financial reporting, financial processes, management decisions, and financial analysis. (Basoglu, et al., 2007)

2.1.2 Decision-Making, Product Pricing, and Supplier Selection

AIS helps in making decisions regarding product pricing and supplier selection among other issues in supply chain management (Ahn & Kim, 2023). When it comes to product pricing, AIS is crucial because it ensures that prices are competitive while at the same time reflecting the real costs incurred at different stages of production and distribution. AI-driven pricing can result in better accuracy, quicker decision-making, and bigger margins (Stühler, 2023). Nevertheless, many disadvantages need to be considered to avoid such things as decreasing human input into this process and privacy issues. AIS provides insights into the financial stability, reliability, and performance history of possible suppliers which are critical in creating stable and sustainable supply chains. In the stage of assessing a vendor's financial stability during the due diligence process, businesses can check if the vendor is a sustainable partner for the long term (Barnes, 2023). Modern, resilient supply chain management depends on AI-enabled decision-making as technologies like predictive analytics and real-time monitoring provides real-time updates on changes to arrival times and detect potential risks and opportunities. Additionally, AI is changing supply chain management through monitoring the sustainability of suppliers and materials, adopting responsible sourcing, and

achieving transparency in supply chains. As sustainability and responsible sourcing are increasingly emphasized, AI emerges as a crucial tool for businesses interested in upgrading their supply chain management.

2.1.3 Auditing and Budgetary Accounting

AIS is important in the audit trail, transparency, and other compliance issues in supply chain management which are made possible through an electronic trail of financial transactions (Simpson, 2020). In addition, this simplifies the auditing, improving the reliability and accuracy of financial reporting. Besides, AIS assists in budgetary accounting, whereby companies can allocate resources wisely, trace expenses, and examine their supply chain activities' financial performance.

The use of computerized AIS ensures efficiency in tasks such as budgeting, accounting, and reporting of organizational activities, external audits, and internal control. The fit of the systems with the organization's dominant view, technology appropriateness, and cultural correspondence affect the effectiveness of AIS implementation under Enterprise Resource Planning (ERP). Earlier studies have observed that information usefulness, decisions, and competent accountants are linked with AIS implementation under ERP.

In essence, AIS not only supports day-to-day operational aspects of supply chain management but also ensures transparency and compliance. AIS, as a real-time system, offers information on stock level, order fulfillment, and demand patterns that enable the management of sound inventory levels and thus mitigate the likelihood of stockouts and overstocking. The system also ensures financial control through mechanisms such as budgetary accounting so that the financial resources are spent efficiently to support operations in the supply chain. In addition, AIS streamlines auditing processes and helps in decision-making, product pricing, supplier selection, and inventory management.

2.2 Supply Chain Decision Making

Supply chain decision-making in an organization includes settling on complex decisions and methodologies to streamline operations at bonded warehouses and conveyance of direct mailing through e-commerce platforms by numerous suppliers in modern days (Xu, et al., 2019). Design thinking comprises arranging productive transportation networks, planning organizations to limit conveyance times, overseeing stock for postal supplies, and booking the labor force to guarantee opportune and financially savvy administrations (Elsbach & Stigliani, 2018). Trend-setting innovations, like mechanized arranging frameworks and continuous following, are significant for further developing dynamic cycles. Supply chain

management is an integral part of an organization that supports manageability through economics, effective strategy choosing, and financially savvy strategic management (Meiryani, et al., 2020). Supply chain management is significant for guaranteeing solid and proficient services with conveyance administration, particularly as client requests change and internet business promotes a positive work culture.

In the current business environment, the essence of supply chain decision-making extends beyond routine operational choices. Design thinking principles are increasingly employed to orchestrate efficient transportation networks, plan organizations to minimize delivery times, manage postal supplies inventory, and schedule the workforce to ensure timely and cost-effective services (Schabasser, 2023). The amalgamation of creative problem-solving and strategic planning inherent in design thinking becomes crucial for organizations seeking not only operational efficiency but also strategic agility in responding to the ever-changing demands of the market.

The landscape of supply chain decision-making is evolving with the integration of trend-setting technologies. Automated planning frameworks and real-time tracking have emerged as significant enablers for enhancing decision-making processes (Wagner & Włochowicz, 2021). These technologies not only streamline logistics operations but also provide decision-makers with the timely and accurate information necessary to adapt to dynamic market conditions. The incorporation of such technologies is pivotal in ensuring that supply chain decision-making remains agile and responsive to the challenges posed by global markets and evolving consumer expectations.

Supply chain management serves as an integral facet of an organization's overall strategy. Effective supply chain decision-making contributes to manageability through economic efficiency and strategic alignment. (TIEN, 2019) emphasize the role of supply chain management in navigating economic considerations, making strategic choices, and fostering cost-effective strategic management. The ability to make sound decisions within the supply chain has a direct impact on an organization's bottom line, influencing costs, revenue generation, and overall financial performance.

Beyond the operational intricacies, supply chain management is pivotal for ensuring the delivery of reliable and efficient services. Particularly in the context of evolving customer demands and the prominence of e-commerce, supply chain decision-making becomes a critical factor in meeting and exceeding customer expectations. As the dynamics of e-commerce continue to reshape consumer behavior, organizations must leverage effective supply chain strategies to maintain a positive work culture and deliver services that align with the expectations of the modern consumer (Meiryani, et al., 2020).

2.3 Inventory Management System

Inventory management is a crucial area within supply chain operations, and the AIS has a vital role in ensuring its effectiveness. (Orobia, et al., 2020) noted that AIS provides real-time data on critical parameters including inventory levels, order fulfillment, and demand patterns thereby helping in inventory management. Real-time visibility gives organizations the ability to act in real-time, allowing them to dynamically adjust the inventory levels to reflect changing demand. In turn, the supply chain becomes more agile and responsive by avoiding the risks that are associated with cases such as stockouts and overstocking. Additionally, AIS improves financial control through budgetary accounting. It enables effective usage of financial resources towards supply chain activities. Such financial oversight eliminates bottlenecks, connects budgets with key objectives, and creates a single picture of financial flows all over the supply chain.

Besides, AIS also provides accurate cost data for use in inventory management. This accuracy has implications on the pricing strategies that should be competitive and based on real costs from production to distribution, according to (Ashok, 2023). The system allows for an exact measurement of these costs such that organizations can price their products competitively while maintaining reasonable profits.

Furthermore, AIS has effects on supplier selection within the supply chain. According to (Fontinelle, 2023) mentioned that AIS helps to gauge the financial status, dependability, and performance history of the partners. This due diligence is an important factor in building resistant supply chain networks. Assessing the financial stability of a vendor will help the businesses to examine the long-term viability of the partnership so that the suppliers can be not only capable of meeting present needs but also reliable and tough partners for the future.

However, it means that AIS should not be seen as merely a data management system. It is a strategic tool that reduces inventories, offers financial control, guides pricing strategies, and creates supply chain networks that are resilient and sustainable. The supply chain management landscape is becoming more dynamic. As a result, such features as real-time data support and the ability to inform decisions make such a tool essential. (Max, 2022).

2.4 Vendor Relationship Management

Vendor Relationship Management (VRM) emerges as a cornerstone in the ongoing evolution of buyer-driven postal planned operations, fostering incremental willingness among

suppliers to contribute to organizational sustainability, as highlighted by (Awan, et al., 2020). VRM encompasses the establishment and maintenance of critical areas of strength for providers and service organizations involved in the delivery cycle. This comprehensive approach extends to logistics coordination, inventory management, and transportation planning facilitated by third-party logistics, contributing to sustainable coordination in supply chain management, as observed by (Kmiecik, 2022).

A pivotal aspect of VRM is ensuring optimal access to quality resources, vehicle maintenance, and technical support. This, in turn, enhances the reliability and efficiency of postal delivery operations, as emphasized by (Agwanda & Ondoro, 2023). The effectiveness of VRM lies in its ability to facilitate the seamless integration of logistics and transportation services, thereby improving the overall performance of the supply chain.

Key components of VRM encompass contract negotiation, continuous monitoring of vendor performance, and the promotion of open communication channels to swiftly address and resolve issues. This proactive approach not only resolves challenges promptly but also fosters a culture of innovation and continuous improvement within the supply chain. The strength of vendor relationships is integral to meeting customer needs, adapting to market changes, and optimizing cost and service quality in the postal coordinated operations industry.

An illustrative example within this context involves three Nepalese vendors whose sister company is Eagle Kuljetus Oy, actively contributing to the timely distribution and delivery of mail. These vendors operate as independent entities, and their collaboration exemplifies the symbiotic nature of vendor relationships. Such partnerships are instrumental in achieving operational efficiency, ensuring timely deliveries, and navigating the complexities of the postal operations industry.

In essence, VRM transcends transactional interactions and evolves into a strategic approach that nurtures strong and sustainable partnerships. By emphasizing effective communication, performance monitoring, and collaborative problem-solving, VRM becomes a catalyst for operational success in the dynamic landscape of postal coordinated operations.

2.5 Empirical Review

A study by (Mohamed, et al., 2013) titled “Information System Integration: A Review of Literature and a Case Analysis” provides a comprehensive literature review on the integration of accounting information systems and supply chain management. While not specific to Eagle Kuljetus Oy, the review offers valuable insights into the impact of accounting

information systems on supply chain decision-making processes. The study highlights the benefits of integrating these systems, such as improved financial analysis, enhanced inventory management, and effective vendor relationship management. It also identifies challenges and future research directions in this area.

The article "Improving Accounting Information Systems to Facilitate Supply Chain Management" (Hezabr, 2018) investigates the impact of accounting information systems on supply chain performance in the transport industry. The findings suggest that a well-integrated accounting information system positively influences supply chain performance indicators such as cost reduction, inventory accuracy, and on-time delivery. The research highlights the importance of leveraging accounting information systems to enhance decision-making capabilities in supply chain management.

Another study titled "Intelligent e-vendor relationship management for enhancing global b2c e-commerce ecosystems" by (Lam, et al., 2021) examines how accounting information systems can enhance vendor relationship management. The study explores the use of accounting information systems in supplier selection, negotiation, and performance monitoring processes. It investigates the impact of these systems on building collaborative and mutually beneficial relationships with suppliers. The findings reveal that an effective integration of accounting information systems enables improved communication, increased transparency, and better coordination with vendors, leading to enhanced supply chain decision-making and performance.

2.6 Theoretical Framework and Hypothesis Testing

A theoretical framework has been developed based on a review of prior literature and existing research findings.

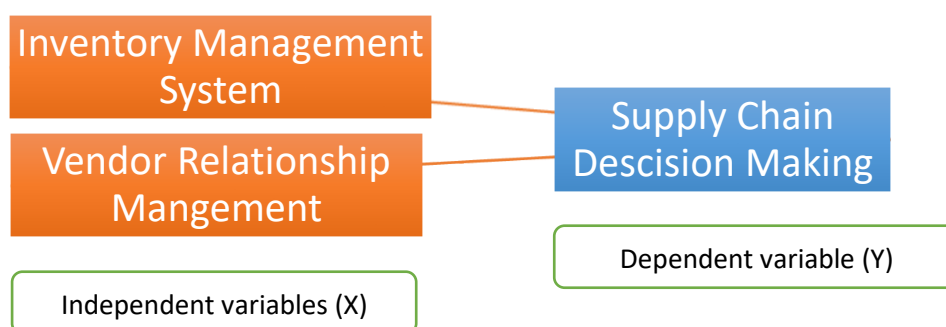


Figure 1. Theoretical Framework

Hypothesis testing is a statistical method employed in research to make inferences about population parameters based on sample data (Emmert-Streib & Dehmer, 2019). First and

foremost, it provides a structured and systematic approach to evaluating research questions and making informed decisions based on empirical evidence. By formulating clear hypotheses, researchers establish specific expectations about the relationships or effects they aim to investigate. Through hypothesis testing, researchers can rigorously assess whether their data supports or contradicts these expectations, enabling them to draw meaningful conclusions. This method involves formulating two competing hypotheses—a null hypothesis (H0) and an alternative hypothesis (H1). The purpose of hypothesis testing is to determine whether there is enough evidence in the sample data to reject the null hypothesis in Favor of the alternative hypothesis.

The hypothesis for testing the research:

H1: Effective Inventory management systems improve supply chain decision-making.

H2: Effective vendor relationship management improves supply chain decision-making.

2.7 Research Gap

Considering the dynamic nature of accounting information systems (AIS) and their potential implications for organizational decision-making, prior research underscores the necessity for additional studies to gain deeper insights into the connection between AIS data and its influence on strategic choices, operational efficiency, and various facets of organizational functioning.

Limited Exploration of Integration Challenges: While studies acknowledge the importance of integrating AIS into supply chain management, there may be a research gap in understanding the specific challenges and complexities organizations face during the integration process. Investigating the barriers, technological hurdles, and organizational resistance could provide valuable insights for practitioners seeking to implement AIS effectively.

Contextual Analysis in Diverse Industries: Many existing studies may focus on broad theoretical frameworks or single-industry case studies. A research gap may exist in exploring the impact of AIS on supply chain decision-making across diverse industries, considering that different sectors may have unique challenges and opportunities. Comparative analyses across industries could offer a more comprehensive understanding.

Human and Organizational Factors: Many studies might emphasize the technological aspects of AIS, leaving a research gap in the exploration of human and organizational factors. Investigating how organizational culture, employee training, and leadership support

influence the successful implementation and utilization of AIS in supply chain decision-making could provide practical insights.

Cultural and Global Variances: Cross-cultural and global variances in the impact of AIS on supply chain decision-making might be an underexplored area. Investigating how cultural differences and diverse regulatory environments influence the effectiveness of AIS in different regions could provide a nuanced perspective.

3 Research Methodology

3.1 Research Design and Sample Size

The research design for this study is descriptive research. A descriptive research design is suitable when the topic is relatively new, and there is limited existing knowledge or understanding of the subject matter. It aims to explore and gain insights into the impact of accounting information systems on supply chain decision-making in Eagle Kuljetus Oy. In a descriptive research design, the primary focus is on understanding the phenomena and generating hypotheses or research questions for further investigation. It does not seek to establish causation but rather to identify potential relationships and patterns in the data.

The sample size of 20 respondents is selected to ensure a substantial representation of this demographic group. It allows for a comprehensive understanding of the impact of accounting information systems on supply chain decision-making in Eagle Kuljetus Oy within the specific socio-cultural context of Finland. While the sample size of 20 participants might not be fully representative of the entire population in Finland's corporate environment, it provides valuable insights into the research questions and objectives of the study.

3.2 Sampling Technique

The sampling technique used for this study is a combination of convenience sampling and stratified. Convenience sampling is used to select participants based on their accessibility and ease of inclusion in the study. In this case, data is collected from employees of Eagle Kuljetus Oy. Convenience sampling allows for the efficient and practical collection of data without the need for complex selection procedures.

3.3 Sources of Data and Data Analysis Techniques

The methods such as surveys, interviews, and possibly observation to collect data from the target population.

For data analysis in this study, Excel and SPSS are used as the primary tool. Excel and SPSS provide a range of functions and tools that allow for efficient data calculation, and visualization. The following data analysis techniques can be applied using those tools.

Descriptive Statistics: SPSS offers various functions for calculating descriptive statistics, such as mean, median, standard deviation, and frequency distributions. These statistics can be used to summarize and describe the data collected from the surveys and interviews.

Descriptive statistics can help provide a clear understanding of the central tendencies and variability of the data.

Data Visualization: Microsoft Excel provides a variety of charts and graphs that can be used to visualize the data. Bar charts, line graphs, pie charts, and scatter plots can effectively present the findings and patterns in the data. Visualization helps in easily communicating complex information and making data-driven interpretations.

Simple Linear Regression: Simple linear regression is used because it is a simple and effective way to model the relationship between two variables. It is used to:

- Predict the value of a dependent variable based on the value of an independent variable.
- Estimate the strength of the relationship between two variables. The stronger the relationship, the more accurate the predictions can be.
- Identify outliers. Outliers are data points that fall far outside the rest of the data. Simple linear regression can be used to identify outliers, which helps to identify errors in data.

Correlation Analysis: Microsoft Excel allows for the calculation of correlation coefficients between different variables. Spearman's correlation analysis is used to explore the relationships between supply chain decision-making with inventory management systems and vendor relationship management. Spearman correlation is used because the data is ordinal, categorical, or not normally distributed. It operates on ranked or ordered data.

4 Results and Discussion

4.1 Demographic data

Demographic data refers to information and statistics that describe the characteristics of a population or a specific group of people. These characteristics typically include various factors related to individuals' personal and social attributes. The demographic data gained through the survey is interpreted below: -

1. Gender of Respondents

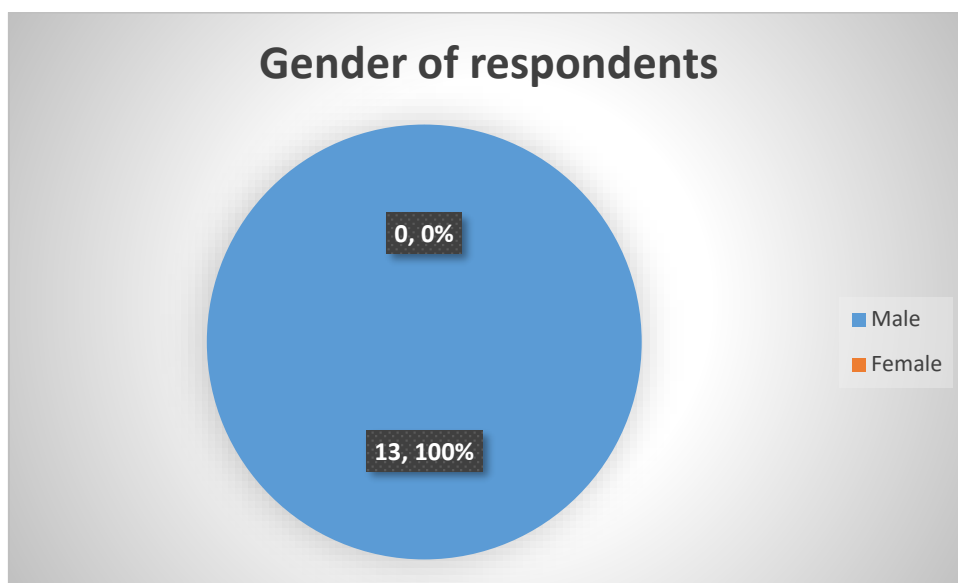


Figure 2. Gender of Respondents

Table 1. Gender of Respondents

Gender	Frequency	Percentage
Male	13	100%
Female	0	0%
Total	13	100%

Interpretation

The above figure and table show the frequency and percentage of male and female employees of Eagle Kuljetus Oy. A total of 13 male employees (100%) are currently working in the company. While no number of females seems to be working in the company.

2. Age of Respondents

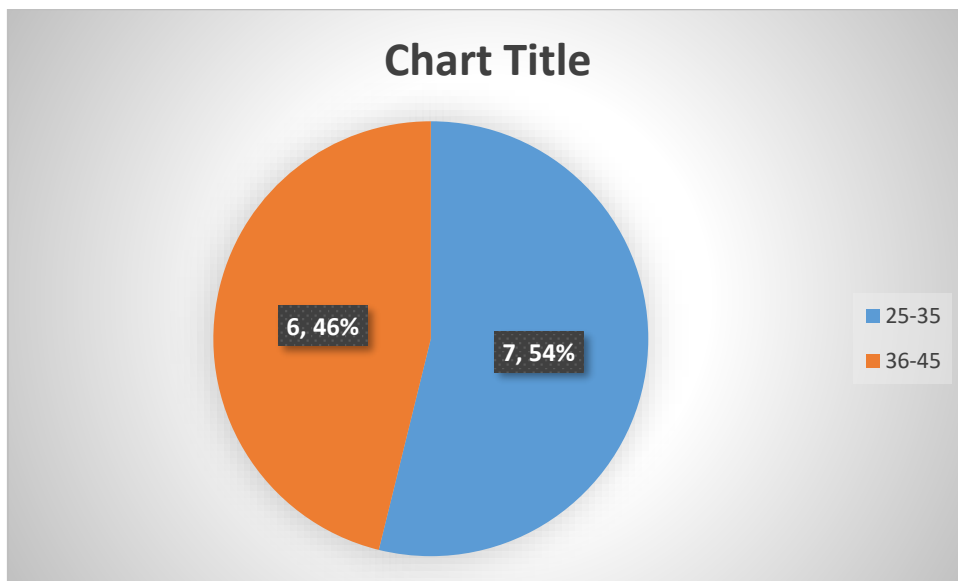


Figure 3. Age of Respondents

Table 2. Age of Respondents

Age	Frequency	Percentage
25-35	6	46%
36-45	7	54%
Total	13	100%

Interpretation

The above figure and table show the age of the employees of Eagle Kuljetus Oy who participated in the survey. A total of 6 employees were aged between 25 to 35 and 7 employees were aged between 36-45.

3. Job Title of Respondents

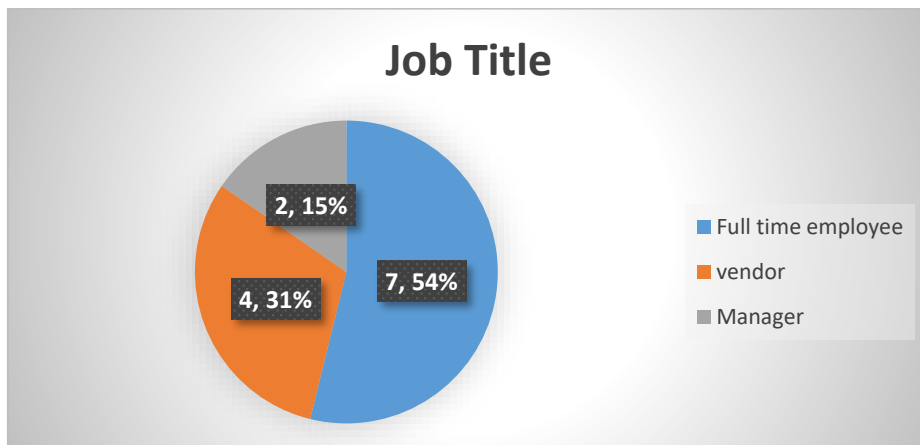


Figure 4. Job title of response

Interpretation

In the company, 7 people were full-time employees and there were 2 managers and 4 vendors.

4.2 Testing Hypothesis

Hypothesis testing helps to establish the validity and reliability of research findings. By subjecting hypotheses to statistical analysis, researchers can determine whether observed differences or relationships are statistically significant, meaning they are unlikely to have occurred by random chance. This statistical rigor enhances the credibility of research results and provides a basis for generalization to larger populations.

I. H1: Effective inventory management systems improve supply chain decision-making.

The null and alternative hypotheses are: -

Null hypothesis (H0) = Effective inventory management systems do not improve supply chain decision-making.

Alternative Hypothesis (H1) = Effective supply chain decision-making improves inventory management systems.

a. Descriptive Statistics for H1

Table 3. Descriptive Statistics for H1

Descriptive Statistics								
inventory management systems	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error
	13	0.8	4	4.8	4.5384	0.2063	-1.4206	0.0572

Interpretation

N (Number of Observations): There are 13 observations (data points) in the dataset.

Range (Range of Values): The variable's values range to 0.8, indicating that employees' responses to the impact of AIS on their company fall within this range.

Mean (Average Value): The average impact of AIS on the company through the employee's perspective is approximately 4.5384 on a scale of 1 to 5.

Std. Deviation (Spread of Values): The values are spread out around the mean (4.5384) with a standard deviation of approximately 0.2063. This means that there is a relatively consistent relationship between supply chain decision-making and inventory management systems. In other words, changes in supply chain decision-making are likely to have a predictable impact on inventory management systems.

Skewness (Asymmetry of Distribution): The skewness value of -1.4206 that the data is slightly skewed to the right, with a few outliers at the higher end of the scale. This means

that there are a few instances where the relationship between supply chain decision-making and inventory management systems is stronger than usual. This could be due to factors such as particularly effective supply chain decision-making or particularly efficient inventory management systems.

b. Simple Linear Regression Analysis for H1

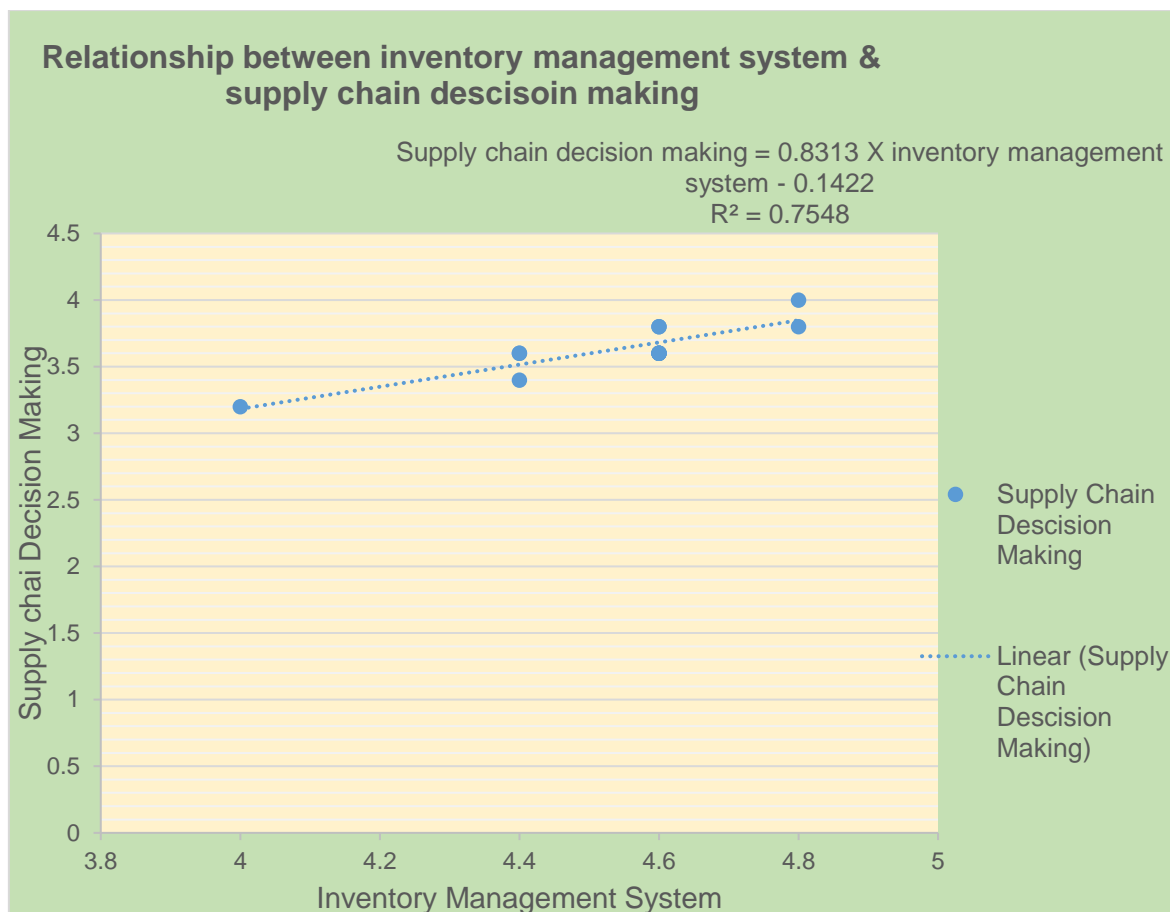


Figure 5. Simple Linear Regression H1

Interpretation

The above figure shows a simple linear regression model of the relationship between supply chain decision-making and inventory management system (H1). The y-axis represents the inventory management system, and the x-axis represents supply chain decision-making. The blue line represents the best-fit line for the data, and the shaded area represents the 95% confidence interval.

The equation of the best-fit line is:

$$\text{Supply chain decision making} = 0.8313 \times \text{inventory management system} - 0.1422$$

This equation states that for every one-unit increase in the inventory management system, supply chain decision-making is expected to increase by 0.8313 units.

The equation shows that there is a strong and positive relationship between supply chain decision-making and inventory management systems. This means that companies that have more efficient inventory management systems are more likely to make better supply chain decisions.

c. Correlation Analysis for H1

Table 4. Correlation Between Supply Chain Decision Making and Inventory Management System

		<i>Inventory Management System</i>	<i>Supply Chain Decision Making</i>
Inventory Management System	Correlation Coefficient	1	0.8687
	N	13	13
	P Value	-	0.0001
Supply Chain Decision Making	Correlation Coefficient	0.8687	1
	N	13	13
	P Value	-	0.0001

Interpretation

The above table highlights the relations that exist between supply chain decision-making and inventory management systems. This correlation coefficient of 0.8687 is very strong which indicates a positive relation between effective supply chain decision-making and inventory management system. Also, the P value is 0.0001 which is less than 0.05. When the p-value is less than 0.05, there is enough evidence to claim that as the inventory management system improves the supply chain decision-making improves too. A better inventory management system results in better demand forecasting, improved lead time management, and more efficient transport and warehousing.

Therefore, the alternative hypothesis (H1) "Effective Inventory management systems improve supply chain decision-making" is not rejected.

II. H2: Effective vendor relationship management improves supply chain decision-making.

a. Descriptive statistics for H2

Table 5. Descriptive Statistics for H2

Descriptive Statistics								
vendor relationship management	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error
	13	0.6	4	4.6	4.4153	0.0575	-0.7039	0.0575

N (Number of Observations): There are 13 observations (data points) in the dataset.

Range (Range of Values): The variable's values range to 0.6, indicating that the relationship between supply chain decision-making and vendor relationship management is more relative.

Mean (Average Value): The average impact of supply chain decision-making on the vendor relationship is approximately 4.4153 which possesses a strong relationship.

Std. Deviation (Spread of Values): The values are spread out around the mean (4.4153) with a standard deviation of approximately 0.0575. This means that any changes in vendor relationship is likely to have a predictable impact on supply chain decision-making.

Skewness (Asymmetry of Distribution): The skewness value of -0.7039 indicates that the data is slightly skewed to the left, with a few outliers at the lower end of the scale. this suggests that there are a few instances where the relationship between the two variables is weaker than usual.

b. Simple Linear Regression Analysis for H2

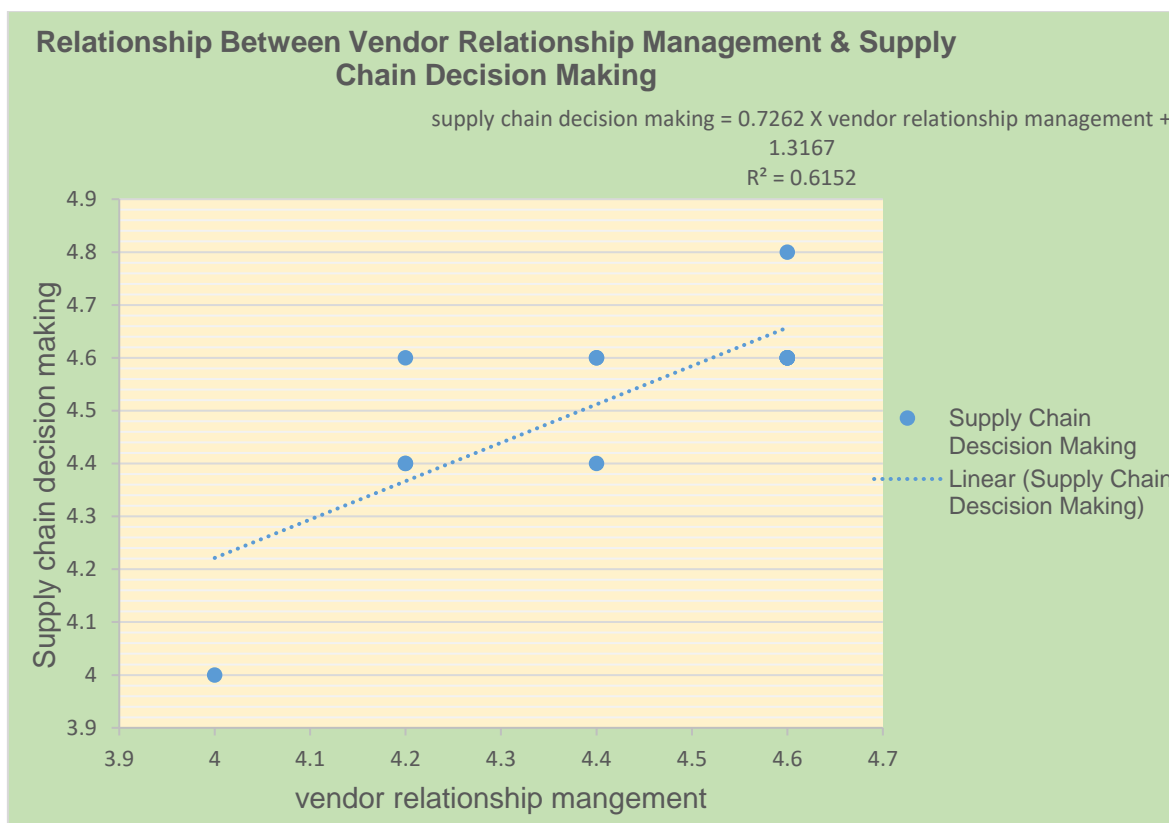


Figure 6. Simple Linear Regression H2

Interpretation

The above figure shows a simple linear regression model of the relationship between supply chain decision-making and inventory management system (H1). The y-axis represents the inventory management system, and the x-axis represents supply chain decision-making. The blue line represents the best-fit line for the data.

The equation of the best-fit line is:

$$\text{supply chain decision making} = 0.7262 X \text{ vendor relationship management} + 1.3167$$

This equation states that a one-unit increase in vendor relationship management is associated with an increase of 0.7262 units in supply chain decision-making. The R-squared value of 0.6152 means that approximately 61.52% of the variance in the supply chain decision-making ('Y') is explained by the variation in the vendor relationship management ('x') according to this regression model.

The equation shows that there is a relatively strong and dependent relationship between supply chain decision-making and inventory management systems. This means that the company's vendor relationship management is likely to affect supply chain decision-making.

c. Correlation Analysis for H2

Table 6. Correlation Between Supply Chain Decision Making and Vendor Relationship Management

		<i>Vendor Relationship Management</i>	<i>Supply Chain Decision Making</i>
Vendor Relationship Management	Correlation Coefficient	1	0.7843
	N	13	13
	P Value	-	0.001
Supply Chain Decision Making	Correlation Coefficient	0.7843	1
	N	13	13
	P Value	-	0.001

Interpretation

The above table highlights the relations that exist between supply chain decision-making and vendor relationship management. This correlation coefficient of 0.7843 is relatively strong which indicates a positive relation between effective vendor relation management and supply chain decision making. Also, the P value is 0.001 which is less than 0.05. When the p-value is less than 0.05, there is enough evidence to claim that vendor relationship management has a significant impact on supply chain decision-making.

Therefore, the alternative hypothesis (H1) "Effective supply chain decision-making improves inventory management systems" is not rejected.

4.3 Major Findings

I. Acceptance of Hypothesis 1 (H1): Effective supply chain decision-making improves inventory management systems.

Justification

A strong and positive relationship is observed between supply chain decision-making and inventory management systems. The regression equation indicates that for every one-unit increase in supply chain decision-making, inventory management systems are expected to increase by 0.8313 units.

The correlation coefficient of 0.8687 is very strong, indicating a positive relation between effective supply chain decision-making and inventory management systems. The p-value of 0.0001 is less than 0.05, providing significant evidence that as supply chain decision-making improves, inventory management systems also improve.

Practical Implications

The findings have practical implications for Eagle Kuljetus Oy, suggesting that focusing on improving supply chain decision-making processes can lead to more efficient inventory management.

This aligns with industry best practices, where companies that make better supply chain decisions tend to have more streamlined and responsive inventory management systems.

II. Acceptance of Hypothesis 2 (H2): Effective vendor relationship management improves supply chain decision-making.

Justification

The regression equation indicates a relatively stronger relationship between supply chain decision-making and vendor relationship management. The R-squared value of 0.6152 is significantly higher, explaining about 61.52% of the variance in the supply chain decision-making.

The correlation coefficient of 0.7843 is considered very strong, indicating a directly proportional relation between vendor relationship management and supply chain decision-making. The P-value of 0.001 is less than 0.05, suggesting that there is not enough evidence to claim a significant impact of vendor relationship management on supply chain decision-making.

Practical Implications

The findings suggest that improvements in vendor relationship management result in effective supply chain decision-making.

This emphasizes the need for Eagle Kuljetus Oy to consider a strong vendor relationship and specific strategies and interventions to enhance vendor relationship management for a convenient supply chain decision-making process.

5 Summary, Conclusion & Implication

5.1 Summary

This study investigated the impact of AIS on supply chain decision-making in the case of Eagle Kuljetus Oy in Finland. The study relied on the descriptive research design using a sample of 13 respondents from the company. Data collection is through surveys, interviews, and observation among the employees. The analysis utilized descriptive statistics, data visualization, simple linear regression, and correlation analysis to examine the connections between supply chain decision-making with inventory management systems and vendor relationship management.

Demographic analysis was also done in this study which revealed the characteristics of the respondents such as distribution according to gender and age. Thereafter, the study tested two hypotheses on the impact of accounting information systems (i.e., inventory management systems & vendor relationship management) and supply chain decision-making.

5.2 Conclusion

The findings of this research study provide valuable insights into the relationships examined about the research questions. The results confirm the presence of a significant relationship between supply chain decision-making and inventory management systems at Eagle Kuljetus Oy, thereby justifying the first research question. The data analysis, including descriptive statistics, simple linear regression, and correlation analysis, consistently demonstrated a strong and positive association between effective supply chain decision-making and efficient inventory management systems.

Regarding the second research question regarding the relationship between supply chain decision-making and vendor relationship management, the findings indicate a relatively strong and predictable connection. The analyses revealed that improvements in the management of relationships with vendors improve supply chain decision-making.

In summary, this research study provides robust evidence supporting the relationship between supply chain decision-making with inventory management systems and vendor relationship management at Eagle Kuljetus Oy, as indicated by the acceptance of hypothesis 1 and hypothesis 2.

5.3 Implications

The outcomes of this research have several implications for both theory and practice:

For Academic Research:

- The study contributes to the literature on supply chain management, accounting information systems, and their interplay.
- The findings highlight the importance of distinguishing between the impacts of supply chain decision-making on different aspects of business operations, such as inventory management and vendor relationships.

For Eagle Kuljetus Oy:

- The positive relationship between supply chain decision-making and inventory management systems suggests that the company should continue to invest in and enhance effective decision-making processes for inventory optimization.
- The positive relationship with vendor relationship management indicates that the company should maintain a good relationship with vendors to enhance an effective supply chain decision-making process.

Limitations and Recommendations for Future Research:

- The study acknowledges limitations such as the small sample size and potential biases in self-reported data.
- Future research could explore the dynamics of supply chain decision-making and its impacts in more extensive samples or across various industries to enhance generalizability.

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6 Appendix

QUESTIONNAIRE

Part 1: General Information

- **Demographic Information of Respondent (Students)**

Age:

18-24

25-35

36-45

46 and above

.....

Gender: Male () Female ()

Part 2: Quantitative Questionnaires

As per the Likert five scale questionnaire, kindly tick mark:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

I.	Supply Chain Decision Making	1	2	3	4	5
1.	Accounting information system used in our organization influences in supply chain decision making processes.					
2.	Supply chain decision making is positively influenced by the integration of accounting information.					
3.	The system supports for strategic decision making in our supply chain management.					

4	The system adequately supports the risk management system in supply chain decision making.					
5	The decisions are based on comprehensive analysis of accounting information.					

II.	Inventory Management System	1	2	3	4	5
1.	The real time visibility into inventory levels helps in decision making.					
2	The system provides analytics for better inventory decision making.					
3	The inventory system effectively integrated overall business processes and efficiency.					
4	The current inventory system helps in maintaining the optimal sock levels					
5	I believe that the systems help in minimizing over-stock situations.					

III.	Vendor Relationship Management	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)
1	The vendor relationship management practice has the positive impact in our supply chain.					

2	There is effective communication with vendors.					
3	It identifies the supply chain disruptions.					
4	It contributes to timely deliveries and reduces lead times.					
5	This action supports the development and implementation of socially responsible practices in the supply chain of Eagle Kuljetus Oy.					