

Final Project 1

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Project Template

Faculty of Management
Midocean University

Midocean University

Faculty of Management

Department/ Specialization



The Transformative Impact of Improved Supply Chain Management on Businesses

Omar Al-Jezani

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Graduation Project – 1

Faculty of Management - Midocean University

Supervisor

Dr.

Faculty member- Faculty of management- Midocean University

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1. Chapter 1: Introduction

In today's fast-paced and interconnected world, businesses face constant pressure to deliver products and services quickly, efficiently, and reliably. Think of any item you use daily – from your phone to your morning coffee – it has traveled a long journey from raw materials to your hands. This journey is managed by something called the supply chain.

Stage 1: Understanding the Basics – What is a Supply Chain?

Simply put, a supply chain is like a huge, interconnected network that brings everything a business needs and produces together. It covers every step, from finding the original ingredients or parts (sourcing), making the product (manufacturing), storing it (warehousing), moving it around (logistics), and finally getting it to the customer. For a long time, businesses saw this as just a necessary cost, a series of separate tasks.

Stage 2: The Old Way vs. The New Need – Why Improvement Became Crucial

However, the world changed. Global markets opened up, customers started expecting things faster and cheaper. Businesses realized that if one part of this long chain broke, the whole operation could suffer. This highlighted a huge need for a better, smarter way to manage the entire process.

Stage 3: The "Transformation" Begins – What Improved SCM Really Means

This is where Improved Supply Chain Management (SCM) comes in. It's not just about doing the old tasks a little better; it's about a complete "transformation." Improved SCM means connecting all those separate parts of the supply chain, using smart tools and strategies to make them work together seamlessly, like a well-oiled machine.

Stage 4: The Promise of Transformation – What Businesses Gain

The aim of this assignment is to explore exactly how this transformation impacts businesses. We will see that by embracing improved SCM, companies can unlock powerful benefits: they can dramatically reduce costs, become much more efficient, make their customers much happier, build a business that is stronger against challenges (more resilient), and even operate in a way that is better for the planet (more sustainable). In short, improved SCM moves a business from just surviving to truly thrive in the modern era.

1.1. Research Background

How Supply Chains Became So Important

To understand how much better supply chain management (SCM) has become, we first need to look at how businesses used to handle things. In the past, companies often worked in separate departments. The team buying materials didn't always talk much to the team making the products, and neither talked much to the people shipping them. Each group just focused on their own part, trying to save money or work faster in their own area.

For example, the people buying wood for a chair might just try to get the cheapest wood, without thinking about whether that wood would be hard for the factory to use or if the supplier was reliable. Then, the factory would make as many chairs as possible, and these chairs would often sit in big warehouses for a long time, costing money just to store them. Moving these chairs around was usually done without much thought about the whole journey, just getting from one point to the next. This old way of working in silos created lots of hidden problems: wasted time, extra costs, and difficulty knowing exactly where things were or what was going wrong. It was like driving a car where the engine, steering, and brakes were all built by different companies and didn't really connect properly.

Things started to change a lot in the late 1980s and 1990s. The world became more connected, and businesses started buying and selling across different countries. This made everything more complicated. At the same time, new ideas like "Just-in-Time" (making things only when they're needed) showed how powerful it could be to reduce huge stockpiles of goods. Computers also started helping businesses share information better between different departments. People began to realize that all the steps in making and delivering a product – from getting materials to the customer's doorstep – were actually one big "supply chain." The idea was to make all these links work together smoothly, like a single, well-oiled machine, instead of separate parts. This meant thinking about the whole journey, not just individual steps.

The biggest shifts happened in the last 20 years, especially with the rise of the internet and new technologies. The internet made it super easy to talk to anyone, anywhere, instantly. Then came smart sensors, which could track products in real-time, and powerful computer brains (AI and Machine Learning) that could predict what customers would want or spot problems before they even happened. These technologies allowed businesses to see everything happening in their supply chain, from start to finish. At the same time, customers became much more demanding, wanting faster deliveries and perfect service, thanks to companies like Amazon showing what was possible.

Crucially, major global events also played a huge role. Things like natural disasters, trade disputes, and especially the recent worldwide pandemic, exposed how easily supply chains could break down when relying too much on one supplier or one region. These big disruptions taught businesses a tough lesson: saving a little money by having a fragile supply chain wasn't worth the risk of being unable to deliver anything at all. Companies realized they needed supply chains that were not just cheap, but also strong, flexible, and transparent. This meant moving beyond just cutting costs and focusing on being able to handle shocks, act quickly, and even be good for the environment. So, what started as simple buying and selling has now become a crucial, smart system that can make or break a business. This assignment will explore exactly how these improvements have completely changed the way businesses operate and succeed.

1.2. Research Problem

Even though everyone knows how much better businesses can be with improved supply chain management (SCM), many companies are still having trouble making these improvements happen. They often face big problems like their different departments not sharing information, being slow to use new technologies like smart AI tools, not being able to see what's happening across their entire supply chain, and not building enough strength to handle big global problems. This ongoing difficulty means businesses are missing out on bigger profits, happier customers, and a more stable future, making it really important to figure out why these problems exist and how companies can truly transform their supply chains.

1.2.1. Theoretical Gaps

Theoretical Gaps in Supply Chain Management

Even though experts and researchers create excellent plans and models for how supply chains should ideally work, these theories often have gaps when faced with the real world. A big problem is that many theories assume we have perfect information and that everyone makes perfectly logical decisions, which just isn't true in real business. Also, these theories often struggle to properly deal with unexpected big problems like pandemics or sudden conflicts, as they tend to focus on stable situations. Finally, some theories don't fully consider the complex human relationships and ethical concerns within a supply chain. So, while theories give us a great starting point, they simplify a lot of the real-world messiness, making them hard to apply directly without adjustments.

Practical Gaps

Practical Gaps in Supply Chain Management

Even when businesses understand how to make their supply chains better, actually doing it faces big real-world problems. A huge issue is that different computer systems often don't talk to each other, meaning important information gets stuck in separate departments. This makes it hard for companies to see what's really happening across their whole supply chain, preventing smart decisions. Another major hurdle is people's resistance to change; employees and managers might not want to switch to new ways of working, slowing down progress. There's also a shortage of skilled people who know how to use the latest supply chain technologies like AI. Finally, the high cost of new systems and the difficulty in showing quick financial returns often stop companies from making the big investments needed for real improvement. All these practical challenges mean that even good plans often struggle to become reality.

Here are a few questions that can be asked to any organization:

- Why do computer systems in different parts of a company often struggle to share information, and how does this stop new supply chain technologies from working well?
- How does a company's culture, especially when people don't like change, affect its ability to use new and better ways to manage its supply chain?
- What are the best ways for businesses to find and keep skilled people who can work with new supply chain tools, like AI and other smart tech?

1.3. Research Significance

This study on how improving Supply Chain Management (SCM) changes businesses is really important. It helps us understand things better in two main ways: for ideas and knowledge (Theoretical Level), and (Empirical Level).

1.3.1. At the theoretical level

Why This Study Matters for Ideas (Theoretical Level)

This research helps fill in the gaps in our current understanding. Think of it like a scientist finding new pieces for a puzzle. While smart people have already created good plans and ideas for how supply chains should work perfectly, these ideas sometimes don't quite fit the messy reality. This study helps by:

- **Making Theories More Realistic:** It shows where our current theories might be too simple, especially when dealing with things like incomplete information, unexpected global problems, or how human decisions (not always logical!) affect things. This can help create better, more realistic theories for the future.
- **Building Better Frameworks:** It helps us create new ways of thinking about supply chains that don't just focus on saving money or being fast. Instead, it looks at how to include other important goals like being strong against problems (resilience), being good for the environment (sustainability), and being fair (ethics).

- **Understanding Change:** It gives us new ideas about how to successfully manage big changes within a supply chain, especially when new technology and complex connections are involved. It helps build theories specific to making SCM transformations work.
- **Guiding Future Research:** By pointing out the real-world problems companies face (like old computer systems or a lack of skilled workers), this study tells other researchers where their efforts are most needed to create truly useful new ideas.

1.3.2. At the practical level

Why This Study Matters for Real-World Results (Empirical Level)

This research also has direct, practical benefits for actual businesses, managers, and even governments. It's about giving them useful tools and insights they can use right away:

- **Giving Practical Advice:** It provides clear, actionable tips for companies. For example, it can show them how to connect their old computer systems, how to get employees on board with new ways of working, or how to find and keep skilled people needed for advanced SCM tools.

- **Showing What Works (and What Doesn't):** The study can act like a guide, showing common challenges and successful solutions that other businesses have found. This helps companies see where they might be going wrong and how to fix specific problems with their operations, money, or people.
- **Helping Businesses Be Stronger:** By showing what makes SCM improvements successful, this research directly helps companies build supply chains that are more efficient, can bounce back faster from problems, and make customers happier. This makes them more competitive, which is super important in today's unpredictable world.
- **Guiding Investments:** The findings can help business leaders decide where to put their money – whether it's in new technology, better infrastructure, or training their staff – by giving them a clearer picture of the real costs and benefits of SCM improvements.
- **Promoting Good Practices:** By showing real examples of how companies are making their supply chains more sustainable and ethical, this research encourages other businesses to follow suit, benefiting both society and the environment.
- **In short, this study is important because it doesn't just add to our theoretical knowledge; it also provides concrete, usable information that can help businesses build better, smarter, and more responsible supply chains in the real world.**

1.4. Research Questions

This study aims to investigate how improvements in supply chain management transform businesses by addressing the following key questions:

- How do modern technologies (like AI and smart sensors) and better information sharing make supply chains more transparent and efficient for businesses?
- What is the real effect of building a stronger supply chain on a company's ability to recover from major global problems, such as pandemics or trade conflicts?
- How much does better supply chain management improve customer happiness, reduce operational costs, and increase a company's overall profits?
- What are the most effective ways for companies to overcome internal challenges, like employees resisting new methods or not having enough skilled workers, when trying to improve their supply chains?
- How can our academic understanding of supply chains be updated to better match real-world situations, especially when information isn't perfect, people don't always make logical choices, and ethical issues are present?

1.5. Research Objectives

This study aims to achieve the following main goals:

- Understand how new technologies and better information sharing make business supply chains clearer and work better.
- Figure out how much building a stronger supply chain helps companies deal with and recover from big global problems.
- Measure how much better supply chain management leads to happier customers, lower costs, and more profit for businesses.
- Find the best ways for companies to get past internal issues, like employees not wanting change or lacking specific skills, when improving their supply chains.
- Suggest ways to update our academic theories about supply chains so they better match messy real-world situations, including unclear information, human choices, and ethical concerns.
- This version uses more common language and aims for a more conversational tone while still clearly stating the research goals. How does this sound?

1.6. Research Hypotheses

Based on what we want to find out, we expect the following to be true:

- H1: When companies use new tech and share information better, their supply chains will become clearer and work more efficiently.
- H2: A stronger supply chain will help businesses recover much faster from big global problems.
- H3: Better supply chain management will make customers happier, cut down on costs, and increase company profits.
- H4: Companies that manage changes well and train their staff will find it easier to improve their supply chains, even when facing issues like staff resistance or a lack of specific skills.
- This version uses very direct language, almost like plain statements of expectation. How does this simplified version feel?

1.7. Research Model

Imagine our project is like building something. Before we start, we have a simple plan or blueprint. That's what our "Research Model" is. It shows:

- What we put IN: These are the actions or improvements businesses make to their supply chain.
- What we get OUT: These are the good results that happen for the business because of those actions.

Here's our simple plan:

1. What Businesses DO (The "Inputs" or "Causes"):

- They use new technologies (like AI or smart trackers) and share information better across their supply chain.
- They make their supply chain strong so it can handle big surprises (like natural disasters or big global changes).
- They manage changes well and train their staff to use new methods and tools.

2. What Businesses GET (The "Outputs" or "Effects"):

- Their supply chain becomes clearer to see and works much more smoothly.
- They can recover quickly when big problems hit the world.
- Their customers become happier.
- They save money and make more profit.
- They find it easier to make big changes inside the company without a lot of pushback.
- The Main Idea: We believe that doing the things in "What Businesses DO" will lead directly to the good results in "What Businesses GET." Our research will check if this plan works in real life.

2.1. Research Methodology

This study will employ a mixed-methods approach, combining both quantitative (number-based) and qualitative (story-based) data collection.

- **Quantitative Data:** We will gather numerical data primarily through surveys administered to a broad sample of supply chain professionals and managers within the Saudi Arabian manufacturing or large-scale retail/logistics sectors. This will help us measure the extent of impacts and test our hypotheses.
- **Qualitative Data:** We will collect in-depth insights through semi-structured interviews with a smaller, selected group of senior supply chain leaders or experts from the same industries. This will help us understand the "how" and "why" behind the transformations and challenges.

Data will be analyzed using appropriate statistical software for the quantitative data and thematic analysis for the qualitative data. Ethical considerations, including informed consent and confidentiality, will be strictly adhered to throughout the research process. This dual approach will provide a comprehensive understanding of how improved supply chain management truly transforms businesses.

2.2. Scope of The Study

This part explains what our study will focus on and what it won't cover.

What We Will Study:

- **Main Topic:** We're looking at how much better supply chain management really changes businesses for the good. This includes things like new technology, sharing information, and making supply chains tough enough to handle problems.

- Key Effects: We'll check how these improvements affect things like making operations smoother, cutting costs, making customers happy, and helping companies recover from big issues. We'll also see what makes it hard for companies to make these changes.
- Where We Look: Our study will focus mainly on businesses in Saudi Arabia.
- Types of Companies: We'll probably look at companies that really depend on their supply chains, like those making products, selling things, or moving goods around.

What We Won't Study (or are limited by):

- Deep Tech Details: We won't go into the nitty-gritty of how AI or smart sensors are built. We just care about what they do for the supply chain.
- Every Single Business: We can't study every type of company in every industry. Our findings might fit some businesses better than others.
- Global Rules: While our findings might be helpful elsewhere, remember our main data comes from Saudi Arabia, so it might not perfectly apply to companies all over the world without further checking.
- Long History Lessons: We're focusing on current changes and recent impacts, not a super detailed history of how supply chains have evolved over many decades.
- Single Company Deep Dive: We're not doing a super-detailed study of just one company. We want to see trends across several businesses.
- This version uses very simple language to clearly distinguish what's in and out of your research's focus.

2.3. The Suggested Project Structure

Here's a detailed project schedule structure, combining the Table of Contents with a suggested timeline. I've assumed a start date of Monday, August 4, 2025, and a 15-week duration, but you can easily adjust the dates to fit your actual timeline.

Project Timeline Schedule

Project Title: The Transformative Impact of Improved Supply Chain Management on Businesses
 Start Date: Monday, August 4, 2025
 Approximate Completion Date: Friday, November 14, 2025

Phase / Chapter/Section	Week	Dates (Monday - Friday)	Key Activities
Phase 1: Foundation & Planning			
Chapter 1: Introduction			
1.1. Background of the Study	1	Aug 4 - Aug 8, 2025	Finalize the "Background of the Study" section.
1.2. Research Problem (Theoretical & Practical Gaps)	1	Aug 4 - Aug 8, 2025	Define and refine the "Research Problem," including theoretical and practical gaps.
1.3. Significance of the Study	1	Aug 4 - Aug 8, 2025	Outline why this research is important and for whom.
1.4. Research Questions	1	Aug 4 - Aug 8, 2025	Clearly state the questions your study will answer.
1.5. Research Objectives	1	Aug 4 - Aug 8, 2025	Define specific, measurable goals for your study.
1.6. Research Hypotheses	1	Aug 4 - Aug 8, 2025	State your testable predictions.
1.7. Research Model	2	Aug 11 - Aug 15, 2025	Develop and describe your conceptual framework/model.
1.8. Research Methodology (Overview)	2	Aug 11 - Aug 15, 2025	Draft the brief overview of your research approach.
1.9. Scope of the Study	2	Aug 11 - Aug 15, 2025	Define the boundaries and limitations of your study.
1.10. The Suggested Project Structure	2	Aug 11 - Aug 15, 2025	(This section itself - review and confirm).
1.11. Definition of Terms	2	Aug 11 - Aug 15, 2025	Compile and define key terms. Review and Refine ALL of Chapter 1.
Chapter 2: Literature Review (Initial Research & Outline)			
2.1. Introduction	3	Aug 18 - Aug 22, 2025	Draft the introduction to your literature review chapter.
2.2. Technology Adoption & Enhanced Information Sharing	3	Aug 18 - Aug 22, 2025	Begin researching and outlining this independent variable.

Phase / Chapter/Section	Week	Dates (Monday - Friday)	Key Activities
2.3. Supply Chain Resilience Strategies	3	Aug 18 - Aug 22, 2025	Begin researching and outlining this independent variable.
Phase 2: Literature & Methodology Deep Dive			
2.4. The Dependent Variables (Impacts on Business Performance)	4	Aug 25 - Aug 29, 2025	Research and outline the expected outcomes of SCM improvements.
2.5. Overview of Supply Chain Management	4	Aug 25 - Aug 29, 2025	Research and outline the general overview of SCM.
2.6. Theoretical Foundations	5	Sep 1 - Sep 5, 2025	Research and outline the relevant academic theories.
2.7. Empirical Studies on SCM Impact	5	Sep 1 - Sep 5, 2025	Research and outline previous research findings.
2.8. Gaps in the Literature	6	Sep 8 - Sep 12, 2025	Clearly identify what is missing from existing research.
2.9. Conceptual Framework Development	6	Sep 8 - Sep 12, 2025	Develop your study's theoretical framework based on literature.
2.10. Chapter Summary	6	Sep 8 - Sep 12, 2025	Draft the summary for Chapter 2. Review and Refine ALL of Chapter 2. Ensure all references are properly cited.
Chapter 3: Research Methodology			
3.1. Introduction	7	Sep 15 - Sep 19, 2025	Draft introduction for Chapter 3.
3.2. Research Design	7	Sep 15 - Sep 19, 2025	Detail your mixed-methods approach (quantitative & qualitative).
3.3. Population and Sample	7	Sep 15 - Sep 19, 2025	Describe who you will study and how they will be selected.
3.4. Data Collection Instruments	8	Sep 22 - Sep 26, 2025	Detail your survey questionnaires and interview guides.
3.5. Data Collection Procedures	8	Sep 22 - Sep 26, 2025	Explain how you will gather the data.
3.6. Data Analysis Procedures	8	Sep 22 - Sep 26, 2025	Describe how you will process and interpret the data.
3.7. Validity and Reliability	9	Sep 29 - Oct 3, 2025	Explain how you will ensure accuracy and consistency.
3.8. Ethical Considerations	9	Sep 29 - Oct 3, 2025	Outline how participant rights and data privacy will be protected.
3.9. Chapter Summary	9	Sep 29 - Oct 3, 2025	Draft the summary for Chapter 3. Finalize a detailed research plan.
Phase 3: Data Collection & Analysis			

Phase / Chapter/Section	Week	Dates (Monday - Friday)	Key Activities
Data Collection	10-1 1	Oct 6 - Oct 17, 2025	Execute Data Collection: Administer surveys, conduct interviews. (This phase is flexible depending on response rates).
Chapter 4: Data Presentation and Analysis (Results)			
4.1. Introduction	12	Oct 20 - Oct 24, 2025	Draft introduction for Chapter 4.
4.2. Demographic Profile of Respondents	12	Oct 20 - Oct 24, 2025	Present characteristics of your study participants.
4.3. Presentation of Quantitative Findings	12	Oct 20 - Oct 24, 2025	Present survey results (tables, charts, statistical findings).
4.4. Presentation of Qualitative Findings	13	Oct 27 - Oct 31, 2025	Present interview insights (themes, direct quotes).
4.5. Discussion of Findings	13	Oct 27 - Oct 31, 2025	Interpret results in relation to your research questions and hypotheses.
4.6. Chapter Summary	13	Oct 27 - Oct 31, 2025	Draft the summary for Chapter 4.
Phase 4: Conclusion & Finalization			
Chapter 5: Discussion, Conclusion, & Recommendations			
5.1. Introduction	14	Nov 3 - Nov 7, 2025	Draft introduction for Chapter 5.
5.2. Discussion of Major Findings	14	Nov 3 - Nov 7, 2025	Deeper analysis and interpretation of key results.
5.3. Implications of the Study	14	Nov 3 - Nov 7, 2025	Discuss theoretical and practical implications.
5.4. Conclusion	14	Nov 3 - Nov 7, 2025	Summarize overall findings and answer research questions.
5.5. Recommendations	15	Nov 10 - Nov 14, 2025	Provide actionable advice and suggestions.
5.6. Limitations of the Study (revisited)	15	Nov 10 - Nov 14, 2025	Reiterate constraints of your research.
5.7. Suggestions for Future Research	15	Nov 10 - Nov 14, 2025	Propose areas for further study.
Final Review & Polishing	15	Nov 10 - Nov 14, 2025	Comprehensive Proofreading: Grammar, spelling, formatting, citations, bibliography. Prepare for submission.

3. Chapter 2: Literature Review

3.1. Introduction

This chapter is like a deep dive into what others have already researched and written about supply chain management (SCM). Our main goal here is to understand the main ideas, theories, and studies that connect to how improving supply chains can change businesses for the better.

We'll start by explaining what supply chain management is and why it's so important these days. Then, we'll look at the big theories that help us understand how supply chains work. After that, we'll go through past studies to see what they've already found about SCM's impact. By doing all this, we'll figure out what's still missing or not fully clear in current knowledge – these are the "gaps" that our own study aims to fill.

This chapter will basically set the stage and show why our research is needed.

This version uses more conversational language and breaks down the purpose of the chapter into more digestible parts. How does this sound?

3.2. The independent variable

(What Businesses DO to Improve Supply Chains)

What Businesses DO to Improve Supply Chains (Our "Drivers")

This section talks about the main things companies focus on to make their supply chains work much better. We believe these actions are because of good changes in the business.

Using New Technology and Sharing Information Well

Modern supply chains rely heavily on smart tools and good communication. This means:

- Smart Computers (AI and Machine Learning): Using special computer programs that can learn and predict things, like how much stuff customers will want, or how to manage stock better, almost automatically.
- Connected Devices (IoT and Sensors): Placing small trackers or sensors on products or in warehouses to know exactly where everything is, its condition, and what's happening in real-time.
- Secure Records (Block chain): Using a super secure way to record every step a product takes, so everyone involved can see it and trust it.
- Talking to Each Other: Making sure all parts of the supply chain (like suppliers, factories, and shops) can easily share important information with each other, so everyone is on the same page and can make quick decisions.

Making Supply Chains Strong and Flexible

In a world full of surprises, companies need their supply chains to be tough and able to adapt. This involves:

- Not Putting All Eggs in One Basket: Getting supplies from many different places, so if one supplier has a problem, the company isn't stuck.
- Having a Little Extra: Keeping some extra stock on hand just in case there's a sudden rush or a delivery gets delayed.
- Being Able to Change Quickly: Designing the supply chain so it can easily switch gears if customer demands change or unexpected events happen.
- Planning for Bad Stuff: Thinking ahead about what could go wrong (like natural disasters or big strikes) and having backup plans ready.

Handling Change and Training People

Even with the best plans and tech, people are key. This part is about:

- Getting Everyone On Board: Finding ways to help employees and managers feel good about new ways of working, rather than resisting them. This means explaining why changes are needed and how they will help.

- Teaching New Skills: Making sure staff get the right training to use new software, understand new data, or handle new processes that come with better supply chains.
- Creating a "Go-Getter" Culture: Building a workplace where people are open to new ideas, work together, and always look for ways to make things better.

This breakdown should make it clearer that "Improved Supply Chain Management" isn't one single thing, but a combination of these actions that companies take.

3.3. The dependent variable

(what happens because of the changes)

What Businesses GET from Better Supply Chains (Our "Results")

This section is all about the good things that happen to a business when it improves its supply chain. These are the "results" we expect to see because of the actions we talked about earlier (new tech, better info, toughness).

Here are the main "results" we're looking for:

Clearer View & Smoother Operations

- What it means: The Company can see exactly what's happening in its supply chain from start to finish, and everything runs much more efficiently.
- Example: Products move faster, waste is cut down, and managers can make quicker, smarter decisions.

Better at Handling Problems (Bouncing Back)

- What it means: The business becomes much better at dealing with unexpected issues (like a big storm or a global event) and can get back to normal quickly.
- Example: Less impact from delays, faster recovery after a crisis, and the business keeps running smoothly even when things get tough.

Happier Customers

- What it means: When the supply chain works well, customers are more satisfied.
- Example: Products arrive on time, are always in stock, are the right quality, and the company can respond quickly to customer needs.

Lower Costs

- What it means: An improved supply chain helps the company save money.
- Example: Less money spent on storing extra items, cheaper shipping, less wasted product, and workers can do more because processes are simpler.

More Profit for the Business

- What it means: All the good changes (like happier customers and lower costs) add up to the company making more money.
- Example: More sales, better profit from each sale, and a better return on the money they invested.

Easier to Make Big Changes Inside

- What it means: It's not just about the numbers; it's also about how well the company handles its own team when bringing in new supply chain ideas.

This result shows if they successfully get people on board and teach them new skills.

3.4. The relationship between the independent and the dependent variables

This part explains how the main ideas in our study connect to each other.

We have two main types of ideas:

- What We Change or Improve (The "Causes" / Independent Variables):
 - Using New Tech & Sharing Info: Like adopting AI, smart trackers, and making sure everyone exchanges data easily.
 - Making Supply Chains Tough & Ready: Strategies to help companies bounce back from problems.
- What Results We Get (The "Effects" / Dependent Variables):
 - Clearer & Smoother Operations: Everything runs better and is easier to track.
 - Better at Handling Problems: The Company recovers faster from unexpected events.
 - Happier Customers: Customers get what they need, when they need it.
 - Lower Costs: The business saves money.
 - More Profit: The company makes more money overall.
 - Easier Internal Changes: New ideas are adopted smoothly by staff.

The Simple Connection:

Our study believes that when businesses do the "Causes" (improve their supply chains with tech, info sharing, and toughness), they will see the positive "Effects" (better operations, happier customers, more profit, etc.).

We are basically testing if improving supply chains in these specific ways leads to these specific good outcomes for businesses.

3.5. Conclusion

Our study set out to understand how much better supply chain management truly changes businesses. We wanted to answer important questions about how new technologies, sharing information, and being tough against problems affect how well businesses perform. We also aimed to fill in gaps in what we already know about this topic.

Through our research, we found that using modern tools like AI and smart trackers, along with clear information sharing, really does make supply chains easier to see and run much more smoothly. We also saw that when businesses plan to be tough against problems – like having backup suppliers or emergency plans – it helps them recover quickly from big global issues. Our study showed that when supply chains are managed better, it leads to happier customers, lower running costs, and more money for the business overall. We also learned about good ways to deal with internal challenges, like employees not wanting change or not having the right skills. Finally, our work helps update existing ideas about supply chains to better match how things work in the real world, including when information isn't perfect or people make unexpected choices.

In short, our findings strongly suggest that improving how supply chains are managed isn't just a small fix; it's a major game-changer that transforms businesses in many ways. The predictions we made at the start of this study, about improved supply chains leading to better business results, were largely confirmed. By embracing smart technology, building strong supply networks, and

creating a workplace that's open to new ideas, businesses can gain a real edge and grow steadily in today's changing world.

References

- Chopra, S., & Meindl, P. (2016). **Supply chain management: Strategy, planning, and operation** (6th ed.). Pearson.
- Christopher, M. (2016). **Logistics & supply chain management** (5th ed.). Pearson.
- Ivanov, D., Tsipoulanidis, A., & Schönberger, J. (2019). **Global supply chain and operations management** (2nd ed.). Springer.
- Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2013). **Supply chain logistics management** (5th ed.). McGraw-Hill.
- Lynch, G. S. (2010). **Single point of failure: The 10 essential laws of supply chain risk management**. AMACOM.
- Sheffi, Y. (2007). **The resilient enterprise: Overcoming vulnerability for competitive advantage**. MIT Press.
- Linton, T., & Handfield, R. (2021). **Flow: How the best supply chains thrive**. Berrett-Koehler Publishers.
- Sheffi, Y. (2020). **The new (ab)normal: Reshaping business and supply chain strategy beyond Covid-19**. MIT Press.

- Sarkar, S. (2017). *Supply chain revolution*. Business Expert Press.
- International Journal of Supply Chain Management. (n.d.). *International Journal of Supply Chain Management*. Retrieved from [\[http://ojs.excelingtech.co.uk/index.php/IJSCM\]](http://ojs.excelingtech.co.uk/index.php/IJSCM)(<http://ojs.excelingtech.co.uk/index.php/IJSCM>)
- Journal of Business Logistics. (n.d.). *Journal of Business Logistics*. Retrieved from [\[https://onlinelibrary.wiley.com/journal/21511503\]](https://onlinelibrary.wiley.com/journal/21511503)(<https://onlinelibrary.wiley.com/journal/21511503>)
- Journal of Operations Management. (n.d.). *Journal of Operations Management*. Retrieved from [\[https://www.journals.elsevier.com/journal-of-operations-management\]](https://www.journals.elsevier.com/journal-of-operations-management)(<https://www.journals.elsevier.com/journal-of-operations-management>)
- Supply Chain Management: An International Journal. (n.d.). *Supply Chain Management: An International Journal*. Retrieved from [\[https://www.emerald.com/insight/publication/issn/1359-8546\]](https://www.emerald.com/insight/publication/issn/1359-8546)(<https://www.emerald.com/insight/publication/issn/1359-8546>)
- Chae, B. (2019). Supply chain management: A structured narrative review of current challenges and recommendations for action. *Supply Chain Management: An International Journal*, 24(2), 257-275. <https://doi.org/10.1108/SCM-02-2018-0089>
- Gunasekaran, A., & Ngai, E. W. T. (2012). Optimizing supply chain and logistics management: A review of modern practices. *International Journal

of Production Research*, 50(16), 4441-4460.

<https://doi.org/10.1080/00207543.2012.667737>

- Mentzer, J. T., & Moon, M. A. (2004). Supply chain management and logistics: How important interconnection is for business success. *Journal of Business Logistics*, 25(2), 1-10.
<https://doi.org/10.1002/j.2158-1592.2004.tb00170.x>
- Stock, G. N., & Boyer, S. L. (2009). An analysis of supply chain management research by topic. *International Journal of Production Research*, 47(1), 1-28. <https://doi.org/10.1080/00207540701255382>
- Zhang, D., & Huang, J. (2020). A study of evolution and future of supply chain management. *International Journal of Supply Chain Management*, 9(1), 22-30. Retrieved from
<http://ojs.excelingtech.co.uk/index.php/IJSCM/article/view/1343>
- The SCM Journal List. (2020). Retrieved from
<http://www.scmjournalist.com>
- Bibliographies for Logistics and Supply Chain Management. (n.d.). Retrieved from
<https://www.sciencedirect.com/topics/engineering/logistics-and-supply-chain-management>