“DEVELOPING A FRAMEWORK FOR SUPPLY CHAIN MANAGEMENT DISRUPTIONS IN INDIA AUTOMOBILE INDUSTRY”

by

SAMUEL JOHN FERREIRA DE SOUZA GONZALEZ

DISSERTATION

Presented to the Swiss School of Business and Management Geneva

In Partial Fulfillment

Of the requirements

For the Degree

DOCTOR OF BUSINESS ADMINISTRATION

SWISS SCHOOL OF BUSINESS AND MANAGEMENT GENEVA

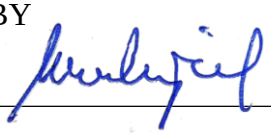
MARCH 2023

DEVELOPING A FRAMEWORK FOR SUPPLY CHAIN MANAGEMENT DISRUPTIONS IN INDIA AUTOMOBILE INDUSTRY

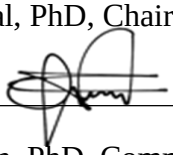
by

SAMUEL JOHN FERREIRA DE SOUZA GONZALEZ

APPROVED BY



Jaka Vadnjal, PhD, Chair



David Annan, PhD, Committee Member

Saša Petar, PhD, Committee Member

RECEIVED/APPROVED BY:

_____

SSBM Representative

DEDICATION

Firstly, to my Lord Almighty, that has given me all the strength, wisdom, and knowledge to complete this research successfully despite of all the adversities along with good and hard times over this journey. Also, to my beautiful and supportive wife Yasiel, and my beloved sons, Ethan John, Aby Hope and Ellie Jemie, for always believing in me, giving me their encouragements words to “keep on keeping on”, and never stop loving and admiring me. Grateful for my family.

ACKNOWLEDGMENTS

During my Doctoral journey, I have many people that contributed to helping me with their continuous support, by giving their inputs, words of encouragements, and expertise on their fields, so I could grant a good analysis and perform useful research that can contribute and add knowledge to the world.

I want to specially thanks priorly, to my great DBA mentor and teacher, PhD. David Annan, because without him, I wouldn´t be able to perform such high-level research, that can really add value to the small and medium size organizations and firms, for them to follow a framework of business excellence. Doctor Annan, without your guidance and great experience, it would have been impossible to learn that much, and complete this research work properly and on time.

Secondly, I would like to offer a deep word of thanks and appreciation to my good friend Mr. Tanmoy Chakrabarty, TATA Sons Government Affairs Officer, for his willingness and kindly help into opening the doors of the most highly and prestigious business conglomerate of the entire India, Tata Group. I am such a blessed and fortunate person, for this great honour it's been conferred to me, in being able to conduct my research study with what I considered the best business conglomerate of the entire world, not only because they generate so much value, but because their main asset is their own people and their beloved country India.

Finally, I want to say a word of special thanks to my two most amazing MBA professors from INCAE Business School, Dr. Esteban Brenes, because he was the person who encouraged me to consider studying a Doctorate in Business Administration (DBA),

and gave me his personal insights in how valuable it was, and Dr. Roy Zuñiga, for all his classes and lessons on Supply Chain, that have been really valuable to complete my entire research in terms of analysis. He also gave me a lot of input in the different drafts I wrote over this journey. Thank you, and God bless you all, and give you so much more than you have ever expected, with good health, happiness, and heart wealthiness.

ABSTRACT

DEVELOPING A FRAMEWORK FOR SUPPLY CHAIN MANAGEMENT DISRUPTIONS IN INDIA AUTOMOBILE INDUSTRY.

The study´s overall objective is to analyze what strategies organizations use to succeed in supply chain production during the pandemic and what type of analysis they have made to adjust their corporate decisions in post-pandemic. The target recipients are stakeholders in India, involved in the global supply chain, such as ports, warehouses, retailers, and organizations that needed to be aware of constant changes because of disruptions.

This research aims to use qualitative descriptive research to analyze data on managerial decision processes, especially on customer satisfaction and its impact on supply chain disruptions in Indian organizations. The research seeks to answer the extent to which post-pandemic actions are needed to maintain holistic supply-chains and how will an organization's strategies assist in overcoming supply-chain disruptions. The research will also analyze the business perspective for the strategic direction and strategic profile of a company.

Hence, this research seeks to demonstrate that holistic managerial decisions taken on a transformational framework of very structured criteria and assessment methods can help small and medium-size organizations to use levers of business excellence and innovation to improve in a world of competitiveness and performance.

The research implications are to help firms and supply chain managers to rediscover their potential and capacity to achieve innovation and business excellence by using performance levers.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Key Words

INCCA- Indian Network for Climate Change Assessment, Ministry of Environment and

Forests, Government of India

GHG- Greenhouse gas

NDCs- Nationally Determined Contributions

UNFCCC- United Nations Framework Convention on Climate Change

ESG´s- Environmental, Social, Corporate Governance

UNPD- United Nations Population Division

SSCM- Sustainable supply chain management

SCM- Supply chain management

GRI- Global Reporting Initiative

SDG´s- Sustainable Development Goals

DEI- Diversity, Equality, and Inclusiveness

NGOs- Non-Governmental Organisations

SME´s- small and medium enterprises

CPPR- Customer-product-process-resource

FC- Formulation criteria

EC- Evaluation criteria

BCM- Business continuity management

CSR- Corporate social responsibility

CHAPTER 1: INTRODUCTION

1.1 Introduction

The world is currently experiencing uncomfortable situations that were not anticipated during this period, such as COVID 19, a backward approach to the provision of products and services, and a pandemic impacting the supply chain (Sheibe & Blackhurst, 2018). This thesis defines supply chain strategy as a network of organizations with the purpose of determining how individual components influence overall performance and how operations can be optimized and coordinated to achieve a shared goal. In the thesis, this term serves as the foundation for finding the supply chain paradox after the post-pandemic. The paradox arises when businesses are only concerned with enhancing their own competitive edge at the cost of benefiting the entire supply chain.

When a disturbance happens at a company, the impacts are frequently felt all the way through the supply chain. The likelihood of disruptions spreading across all countries increases as supply networks become more global and businesses strive for speed and efficiency. India is no exception to the global shocks of disruptions.

Supply chain disruptions may occur due to climate change or human factors as well.

Based on data from the Indian Network for Climate Change Assessment, Ministry of Environment and Forests, Government of India (INCCA, 2010), the agricultural sector in India is responsible for 18% of gross national greenhouse gas (GHG) emissions in the country, mainly through rice cultivation, burning of crop residues, livestock production, and fertilizers use. This growth in agriculture and associated emissions might occur mostly in

Asian Countries, where a high number of their population strictly depends on agriculture and allied sectors for their livelihoods.

Given the significance of agriculture to the total national GHG emissions, India has identified agriculture and allied sectors as a national priority area for emissions reduction in their Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC), under the 2015 Paris Agreement (Richards et al.,2018). The key point for evaluating the mitigation potential of the agricultural sector is to quantify baseline emissions and analyze different sources that contribute to these emissions. Researchers such as Whittaker et al., (2015), define appropriate mitigation strategies that can be developed based on available options and their implementation costs, so this information can be useful to the stakeholders and governmental officials for policy developments that are consistent with environmentally sustainable goals, national food security, and economic development.

Also, some natural disasters that happened in Asia, like the Thailand flood and Japan´s earthquake and tsunami, which both happened in 2011, affected as an imminent fact the supply chains of several important firms like Toyota Motor, Apple, Toshiba, General Motors, and Nissan Motors among others, impacting with negative effects their competitiveness and business earnings (Salmi et al., 2020).

On the other side, some human factor disruptions also affect the supply chains. For instance, the tariffs imposed on many products for US importers, especially aluminum and steel, to Asian Countries, like China, have led to import delays, based on the inability of the companies to adjust their current customs clearance processes, and absorb the extra cost. (Jasiulewicz-Kaczmarek, 2015). The civil war in Syria and recently in Ukraine, has created

humanitarian logistic issues with refugee flows in Turkey, India, and the EU, because of the situation, they needed to change supply chain strategies from serving populations to serving static groups of people, by supplying some of the refugees' camps (Dubey et al., 2023). Finally, due to the coronavirus outbreak, transport hubs and industrial chain activities, have been severely impacted and restricted on production and transportation routes worldwide (Araz et al., 2020). Today, the markets are full of turbulence and business operations are facing unforeseen challenges, so it´s important that firms might take their action plans for mitigating any unexpected consequences.

The world was not prepared to deal with such an awkward situation, according to a United Nations Population Division study (UNPD, 2019). According to the findings of this study, the worldwide supply network is now uncertain as a result of all these occurrences. "Disruption happens when the firm keeps doing the same choices that once brought them success, but now caused them to fail," says Gans (2016). He defines disruption as being associated with an organization's failure. These choices show ways to deal with interruptions in all aspects of our everyday lives, including access to travel, cargo delays, and transit, flight, and transportation problems.

The conventional methods of managing the supply chain, such as gathering raw materials, giving them to the manufacturer, packaging, shipment, and dispatch, might no longer be used. The current crescendo of business risks and possible pandemics has shown how important it is to be ready for unforeseen disruptions, much like the recent episode involving the M.V. EVERGIVEN transporting cargo at the Suez Canal (Lawrence, 2021). The organizations, end-users, retailers, wholesalers, and fabrics have understood how fragile the supply chain is, and in any event, they must be prepared and ready to keep moving forward

with their activities. Without the supply chain working, there is no food or goods to arrive safely at any location at any time.

Supply Chain disruptions concerns have become an important threat to focusing on short term and longer-term strategy and risk management, for all the stakeholders around the world, and especially for the organization's strategic planning to rethink.

It is certainly important to study how India is facing the supply chain disruptions, in the context of how the organizations, stakeholders, and end-users can transform and adjust their managerial decisions to create value, from the perspective of ESG´s strategies (Environmental, Social, Corporate Governance) and risk management (Kotsantonis et al., 2016).

According to World Meter's analysis of the most recent United Nations data, this ESG's strategies are particularly crucial in a nation with a population of almost 1.4 billion people, where every product communicates to be a crucial connection in the entire ecology of trade activities.

The good news is that, despite the significant effects supply chain disruptions have on global trade, they can be reduced by a number of managerial choices made by strategic decision-makers within the organization using a comprehensive and transformative framework with a structured assessment and criteria method. The goal of the study is to analyze and assess managerial approaches that can lessen the effects of supply chain disruptions on the global economy, particularly the Indian economy, which is the one we used for this research, and that can help small businesses make more informed managerial decisions and increase their competitiveness in a globalized environment.

1.2 Research Problem

Taking into perspective, the Indian economy, the decision-makers, and stakeholders involved in the global supply chain such as ports, warehouses, retailers, and organizations needed to be aware of constant changes because of disruptions, such as those created by climate change, human factors, and global pandemics such as demands drops and surges, reduction of productivity, restrictions on access and storages, raw material shortages among others.

Based on strengthening relationships for economic interaction in fields of Economic Value Added (EVA) for the supply chain such as energy, technology, innovation, pharmaceutical goods, and commodities, India is providing a framework for global trade since this century, expanding its scope for economic cooperation, and becoming a global force in the world, similar to their engagement with the African continent (Biswas, 2016).

Finding new tools for transformational managerial decisions and comprehensive approaches to deal with the overall situations of the companies, logistics, and customer satisfaction is necessary due to the emergence of new organizations, entrepreneurs, and businesses that are unable to generate value (Amankwah-Amoah et al., 2021). This data can provide light at the end of the tunnel by providing benefits and generating information for small and midsize organizations.

The study intends to highlight the importance of providing strategies to mitigate challenges faced in the different types of supply chain disruptions, applying them to small and midsize companies' areas that are crucial to many nations by evaluating and updating research methods. In a post-COVID-19 world with greater social and economic uncertainties and the expectation of accelerated adoption of technological innovations by several key

industries (Isabelle et al., 2020) encourages researchers to use the five forces of Michael Porter and beyond, as a way to improve their decision-making processes and be more effective in their respective business environments.

There are many theories in supply chain management, but I will refer specifically to 2 of them. One is sustainable supply chain management (SSCM), which generally refers to inter-organizational business management adding environmental and social considerations, to the traditional focus on economic factors (Allen et al., 2021). SSCM seeks a contrast with traditional supply chain management (SCM) and brings to attention different concepts between SSCM and SCM. It also includes long-term thinking, by incorporating the product lifecycle into SSCM.

The other theory is Circular Economy (CE), introduced to investigate the sustainability of organizations and their respective supply chains (Geissdoerfer et al., 2017). CE literature streams have focused on defining linear economy problems instead of managing circular economy processes. These processes have been studied under different circumstances such as industry-level, supply-chain level, organizational level, or product level (Allen et al., 2021). The globalization level of CE has been also proposed recently, by scholars (Geng et al., 2019). So, having excellent theories and frameworks for making strategic business choices can help businesses and decision-makers to gain clarity in their decisions and help reduce conflicts and uncertainty in business performance (Annan, 2021).

1.3 Purpose of Research

The general goal of the research is to examine how organizations use supply chain production strategies to thrive during the epidemic and what kind of analysis they use to revise their business choices. The intended audience consists of Indian participants in the

global supply chain, including ports, warehouses, merchants, and other businesses that must be informed of ongoing changes due to disruptions. The implications are for decision-makers and shareholders who are pursuing value generation and seeking to incorporate new meaningful changing strategies of planning and implementation, to create a positive feedback loop of improvement and assessment in particular areas like strategic planning, customer focus, leadership, measurement, analysis, and knowledge management, workforce focus, operations focus, and results (Mithas, 2015), to optimize their operation flows, and earnings (EBITDA).

Specific Aims

- To examine the core values and concepts of organizations' strategic decision making in the supply chain.

This study intends to dig up various pieces of information related to the Malcolm Baldridge criteria (Asruddin, 2020) for business excellence, by making observations (previous data research), interviews, and analysis based on areas of management described by this method.

Malcolm Baldridge has 7 criteria that can be used in the framework of an integrated approach in areas of management and business: leadership, strategy, customers, measurement analysis and knowledge management, workforce, operations, and results. The data collected from the interviews intends to follow the criteria of the Baldridge Programme as the way to analyze and make final reports as a result of this study.

1.4 Significance of the Study

The significance of the research will help businesses around the globe rediscover their ability and potential to achieve business success and innovation by using performance levers. The study will encourage decision-makers and shareholders to focus on creating value for themselves and to participate in crucial areas such as new products and services that can be offered to improve operational flows and earnings before incomes, taxes, depreciation, and amortizations (EBITDA), which can be valued by suitable evaluators in the public markets. The research will also examine how they contend with one another in terms of structure, policies, investments, and cultural practices.

This research will help firms worldwide rediscover their potential and capacity to achieve innovation and business excellence by using performance levers.

India´s challenges are many, particularly organizations that are fighting to remain alive. It´s not easy to sustain a business in the world as it is today. Many challenges are encountered, and only the decision-makers capable of taking better transformational decisions will get better results. Having a framework useful to lever business excellence and innovation will be helpful for organizations around the world to rediscover their potential and make the transformation possible.

1.5 Research Purpose and Question/Hypothesis

This thesis looks into the relationship between the automotive industry and integration design within the context of creating supply chain strategies following the outbreak Covid 19. The objective is to perform a comprehensive evaluation of the body of literature and identify cutting-edge methods and tools for creating supply chain strategies.

The study's aim is to identify and combine existing tools and processes in order to show them in a research framework for business growth prevention. This study will provide useful information and holistic options for the development and economic growth of small and medium-sized businesses engaged in supplier trade activities that are currently experiencing failures and losses in their everyday operations.

Research Question/Hypothesis

- To which post-pandemic actions are needed to maintain holistic supply chains?
- How will Organizations' strategies assist in overcoming supply-chain disruptions?
- The study hypothesis the extent to which the supply chain differentiates organizational performance in global disruptions.

1.6 Summary

The general goal of the research is to examine how organizations use supply chain production strategies to thrive during the epidemic and what kind of analysis they use to revise their business choices. The intended audience consists of Indian participants in the global supply chain, including ports, warehouses, merchants, and other businesses that must be informed of ongoing changes due to disruptions.

This research aims to use qualitative descriptive research to analyze data on managerial decision processes, especially on customer satisfaction and its impact on supply chain disruptions in Indian organizations.

The research seeks to answer the extent to which extreme losses influence post-pandemic actions to maintain supply-chain and how an organization's strategies assist in overcoming supply-chain disruptions.

The research will also analyze the business perspective for the strategic direction and strategic profile of a company. Therefore, the goal of this study is to show how holistic managerial choices based on a transformational framework of highly structured criteria and evaluation techniques can assist small and medium-sized businesses in utilizing levers of business excellence and innovation to enhance performance in a competitive environment.

The research's contribution will be significant in that it will aid businesses all over the world in rediscovering their potential and ability to use performance tools to achieve innovation and business success.

The next chapter introduces the conceptual and theoretical framework the study emphasizes and links it with the study methodology.

1.7 Conclusion

Chapter one presents the study and research on supply chain strategy development for the Indian automobile Industry. The chapter begins by introducing the study's context and the significance of supply chain strategy as a research topic. The study's overall goal and aims are then explained. The chapter provides background for the case study by introducing the impact of the post-pandemic that has massively affected supply chain. The following chapter examines the study's books, important concepts, and theoretical ideas.

1.8. Outline of the thesis

Chapter One shows and summarizes the substance of the thesis, including the context of the study, the issue that was investigated, the purpose and objectives of the study, and a brief summary of the supply chain challenge of the Indian automobile industries and businesses after the post-pandemic including the research process.

The second chapter describes the techniques found in academic literature and examines the theories, methods, and procedures associated with supply chain strategy that can be found in extant literature. The key ideas and approaches are critically examined in order to define the key areas of literature that provide insight into the character of supply chain strategy development.

The third chapter describes the research methodology and methods used in this thesis, as well as the rationale for the research strategy selected. It describes the theoretical stance for studying supply chain strategy formulation. The research employs a case study and a qualitative method based on the interpretivist pattern seeking approach. The chapter describes the strategy in depth, including the research techniques used and the research principles associated with the planning and implementation of field work. The chapter presents the case study chosen for implementing and verifying the synchronous inductive and deductive theory building approach.

Chapter four describes the data sources as well as the data gathering and analysis method. There are specifics of the data gathering method used in the field work, as well as a talk of the strategy to data analysis in light of the research's constraints.

Chapter 5 - The framework's debate and findings are highlighted. In the process of developing a theory, the results from this chapter are generalized based on the diversity of the unique case study sample population examined.

Chapter six concludes the thesis with the summary, research implications and recommendations for future research.

CHAPTER 2: REVIEW OF LITERATURE

2.1 Introduction of Framework

The literature review investigates the study's key ideas and critically analyzes the methods that were not explored. The overview starts with a talk of supply chain strategy management (SCM) and strategy development, including stakeholder theory and what is required to maintain a comprehensive supply chain, as well as the actions that organizations must take to maintain and surmount supply-chain disturbances. The assessment then takes into account formulation factors in order to gain a better grasp of the connection between business and supply chain strategy.

The review focuses on the debate over developing supply chain strategies that go beyond sustainable SCM, which addresses the following topics: models and methodologies for developing supply chain strategies, developing products and supply chains, developing logistics and supply chains, and developing supply chains' performance.

2.1.1 Definition and Evolution of Supply-Chain Structure.

According to Bozarth et al., (2009) and Pathak et al., (2007), the supply chain is a complicated adaptive system with interlinking structural design, that encompasses external aspects, and system-relevant internal components (Melnyk et al., 2014). By assessing expenses, advantages, and trade-offs in the practical components of the supply chain, the supply chain strategy element is viewed as an inquiry into how the supply chain should function effectively to compete.

The process of converting basic materials into a finished product, on the other hand, is known as supply chain management. This method offers a long-term objective where

validation should happen over time (Mentzer et al., 2001; Saad et al., 2002). The distinction between the two topics is made clearly in Perez-Franco et al. (2010), Schnetzler et al., (2007), Martinez-Olivera and Shunk (2006). The research focuses on the formulation element of a supply chain strategy and the development of a research paradigm for supply chain strategy mitigation from Indian perspective.

2.1.2 Sustainable Supply Chain Management: Sustainable Debate

The threats of climate change are real. The sea level globally has rose around 20 centimeters in the last century, as same as the global temperature has risen in couple of decades more than ever before. In this regard, industry, electricity generation, heat production, and transportation, account for the 60% of the global greenhouse gas emissions (IPCC, 2014). The emissions stemming from the supply chain also account for the majority of the emissions in the industry as well, such as packing products, transportation of goods, extraction of materials. (Stubbs & Downie, 2013).

Most studies on sustainable supply chain management (SSCM) and supply chain management (SSM) explain the sustainability concept though the framework of the triple bottom line (3BL), as mentioned by Schulz and Flanigan (2016). The 3BL approach surrounds elements of environmental quality, social justice, and economic prosperity (Vafadarnikjoo, 2020). In the case of India, and the Tata Group of companies, CEO, Chandrasekaran (2020) indicated that they are focus on six themes as follows: The Indian consumers, formalization of the economy, sustainability, digital and technology, nation building and supply chain resilience.

The operations of a firm are sustainable when they are efficient in management of residuals to the environmental, also by optimizing the usage of energy, recyclable materials in their production process, special care to their employee´s welfare and safety, avoiding child labor, performs business activities with financially vulnerable persons (Alexander, 2016).

Moreover, the 3BL framework has been the base of sustainability standards such as the Global Reporting Initiative (GRI). This standard suggests the top executives must identify the sustainability aspects that are material for the firm and their stakeholders. New concepts such as Environmental, Social and Governance (ESG), Diversity, Equality, and Inclusiveness (DEI), and Sustainable Development Goals (SDG´s), are driven goals aligning with the financial goals of the stakeholders, along with ethical business decisions (Saetra, 2021).

Hence, it is imperative to mention that it proposes aspects for each dimension of the 3BL, for example, within the environmental dimension, it suggests biodiversity, CO2 emissions mitigation, water consumption management, among others, within the social dimension also suggested human rights, product´s responsibility and society impact, same as India is doing on their "Building the Nation" concept (Steenkamp, 2021). After each aspect and criteria, the standard presents indicators which help top executives to monitor and measure the sustainability aspect that are material to the firm It is impossible to successfully manage an operation if you cannot measure it and monitor it (Zuñiga, 2005).

Even with the process of reporting on sustainability aspects, there is some issues and tension in the literature regarding the relation that exists between the sustainability practices and the organization´s economic and financial performance. Moreso, there is a positive attitude regarding the evidence that exists suggesting that social supply chain practices and

environmental, have a really positive impact on social, environmental and economic performance (Kim, 2021).

These studies suggest that it does pay to be sustainable. On the other hand, there are some studies that documented evidence on the negative effects of social and environmental performance on organization´s economic and financial performance (Nguyen et al., 2022), or the inability to establish causal relationships between social and environmental practices on the organization´s performance. The logic behind these results is that environmental, social and governance practices consume resources that can be used to better enhance the economic performance of the companies (Alareeni, 2020).

Other scholars argue that this mixed evidence is because of the non-existence of mediators between these relationships (Golicic & Smith, 2013). In this regard, if it really pays to sustainability, the field needs research about contextual factors and the conditions, that provide synergies between the dimensions of the 3BL (Golicic & Smith, 2013). Finally, we need to understand how value is created in SSCM and SSM, and if this created value satisfies the firm´s stakeholder's expectations and targets.

2.1.3 Value Creation in the Context of the Triple Bottom Line

The concept of value creation within the framework of the 3BL is not explicitly stated. Some scholars argued that firms need to address their social, environmental, and economic aspects to serve their stakeholders better (Elkington, 1998).

Ambrosini and Bowman (2000) defined value creation as the way in which the utility consumer gets when buys a service of good. Exchanged value is the total amount paid by the consumer or buyer for the sold product they got. In this sense, an organization creates value

when it creates use value. A firm gets value when it realizes exchange value. These authors also argued that value is created through the actions of organizational members for transforming tangible resources into services and products that might be considered as valuable at the moment of the exchange. This approach of value creation focuses on the activities that are perceived as valuable by the consumer. However, with the supply-chain debacle, many of these value chains is not problematic as many companies are struggling to align the production process both within the auto industry and the food industry in Indian. Most companies are therefore ignoring the dimensions and rather transferring costs to the consumers.

Ambrosini and Bowman (2000) posit value without reference of use from some stakeholders that might prefer to be related to the social and environmental dimensions of the 3BL. Even though consumers are starting to incorporate social and environmental criteria in their use of value perceptions (Devinney et al., 2010), in where this vision is not enough for accounting the value creating process in the context of SSM and SSCM. On a different perspective, some stakeholder's scholars argue that value is created when the process of transforming resources and materials into products and services added the use value of firm´s stakeholders (Freeman et al., 2010).

Hence, top executives must create their business processes to harmonize the perceived use value from all their stakeholders. A firm creates value when it makes profits for its shareholders; create long-term business relationships with its suppliers, providing services and goods that fulfills consumer's needs; satisfies orders without damaging the society and environment, providing a safety work environment for their workers.

The stakeholder theory trajectory of value also argues the potential conflicts between the use values of several stakeholders. For example, many overseas manufacturing would create value for customers via lowering prices, but also puts pressure on suppliers to reduce cost of production, which has a ripple effect that can lower salaries for the supplier´s workers.

The creation of value for the stakeholders finds situations were fulfilling the interest of one stakeholder does not damage the interest of other one (Freeman et al., 2010), therefore, the challenge for top executives to find a way to mitigate supply chain to bring sustainable social and environmental solutions to people.

Furthermore, Freeman (2010) argues that conflicts between stakeholders' interests can be seen as an opportunity for value creation.

Freeman (2010) argued:

"*Stakeholder theory focuses on the jointness of stakeholder interests rather than solely on the trade-offs that sometimes must be made. It does not deny that such trade-offs are necessary but suggests that they also represent opportunities to think beyond trade-offs to a question of value creation. Stakeholder theory solves the value creation question by asking how we could redefine, redescribe, or reinterpret stakeholder interests so that we can figure out a way to satisfy both, and to create more value for both*."

2.1.4 Contextual Stakeholder Relationships in SSCM

There are three types of stakeholder relationships in the sustainable supply chain industry. According to (Delmas & Toffel, 2008), they are exerting-pressure relationships, accountability-based relationships, and collaborative relationships. Some papers also use stakeholder theory to study stakeholders' relationships from an exerting-pressure point of view. These authors follow the resource-dependence theory logic, and they argue that some stakeholders have resources which permit them to put pressure on the firm to implement

sustainable practices. For example, top executives do engage in environmental or social sustainability projects because of pressures from other stakeholders (Delmas & Toffel, 2008).

The accountability process for some stakeholder relationships are the ones based on the responsibility had by top executives about the issues that might happen in the supply chain (Gualandris et al., 2015). We studied how the exposure to stakeholders affect the monitoring and evaluation of sustainability issues, the factors affecting the liability of focal firms, and the effect that exposure to stakeholders have on the relationship between organization capability and sustainability outcomes.

Lastly, there are also studies argued that stakeholder relationships from a cooperative perspective. These relationships are the ones used for complementary resources purposes, sharing knowledge and industry self-regulation (Alvarez et al., 2014). Scholars in stakeholder management identify these stakeholders according to their liaison to the firm (Clarkson, 1995; Donaldson and Preston, 1995; Freeman et al., 2010; Mitchell et al., 1997). They determine those insights through transactions, power, and legitimacy as the first important stakeholders.

The first stakeholders are customers, shareholders, suppliers, government, etc. (Clarkson, 1995). These stakeholders are also named in some papers in SSM and SSCM as internal stakeholders (Klassen & Vachon, 2012). On the other side, those outsiders' constituencies who do not have formal contractual bond or exert direct legal authority over the firm but that can influence the firm are considered secondary stakeholders (Clarkson, 1995; Eesley & Lenox, 2006). For instance, some secondary stakeholders are Non-Governmental Organisations (NGOs), consumer activists, universities, the national media, and so on.

Klassen and Vachon (2012) indicated that the secondary stakeholder has great and dynamic influences on the supply-chain industries and can sometimes trigger many challenges for managers to handle as they must constantly deal with the issues that arises from those stakeholders.

2.1.5 Environmental Innovativeness to Overcome Trade-offs in Supply-Chain

The logic of green operations is that environmental excellence drives operational excellence (Corbett & Klassen, 2006; King & Lenox, 2002; Pil & Rothenberg, 2003). These authors argued on Green Operations and Green Supply Chain Management suggest that firms with lean production practices are more likely to adopt environmental management practices, green technologies, or practices (Curkovic et al., 2008; King & Lenox, 2001; Wiengarten & Pagell, 2012). Other scholars also indicate that an excellent supply chain management practice (e.g., supplier development, supplier assessment and certification, supplier input for product development, cooperation with customers) have a great and positive response on the environmental performance of the firm (Ciliberti et al., 2008, 2011; Gimenez & Tachizawa, 2012; Miemczyk et al., 2012; Schneider & Wallenburg, 2012).

However, these practices have been complained or challenged because they only focus on low-hanging profits; they only address environmental gaps if they do not hurt economic performance (Montabon et al., 2016; Pagell and Shevchenko, 2014). Hence, further environmental improvement requires investment in technology and knowledge acquisition to bring radical changes and reengineering of existing processes, situations which can hurt the short-term economic performance. Consequently, more research is needed on the antecedents and the development of firm-level environmental innovation.

The current pandemic and global war between Russian and Ukraine has worsen the burden of SCM and global recession in many economics are becoming rampant. The Indian economy is struggling with mitigation on higher prices, South Africa is on the verge of economic collapse in electricity and the USA is struggling to realign it economic to curve inflation and recession.

Hence, an innovation and competitiveness quote from Elon Musk states “Innovation often does not come through one breakthrough idea, but through a relentless focus on continuous improvement”.

For progress to happen in the world where supply-chain management is fuel effectively, managers and stakeholder must design and realign better strategies to overcome the global challenges after the Covid 19 so that all stakeholder involved can move on to a better and sustainable world.

Kemp and Pearson (2007) in their writing mentioned that environmental innovation is of essence in today’s world. The authors defined Environmental innovation is as “the production, assimilation or exploitation of a product, production process, service or management or business methods that is quite important to organization, and which results, throughout its life cycle, in a reduction of environmental risk, pollution and other negative impacts of resources use compared to relevant alternatives” Environmental innovation is systemic, and complex because it has changes of business processes, products portfolio, organizational structures, and the creation or adoption of expensive and high-uncertainty technology (Rennings, 2000).

Compared to economic innovation, it is more difficult to capture economic value added (EVA) from environmental innovation because the cost of adopting environmental

innovations is lower for late adopters than early adopters. In essence, top executives have no incentives to initiate environmental innovation projects (Rennings, 2000), and it is affecting the pattern of supply-chain process across the globe.

Indian economy regarding supply chain environmental innovation is a slow starter although when it comes to IT technologies, the economy is on the threshold of competing with powerhouse of IT innovation. Sad to say that with supply chain in environmental innovation, many stakeholders do not fully concentrate attention on, and this has the potential to turn this up for the better of the economy.

In addition, innovation differs from innovativeness. Innovation is the iterative process of developing inventions that respond to market opportunities and at the same time are successfully produced and commercialized (Garcia & Calantone, 2002). On the other side, innovativeness refers to the organization´s capability to adopt new ideas that lead to the development of new products, processes, or organizational procedures. As result of the difference in their adoption and usage (Tsai & Yang, 2013). Posited that "innovativeness precedes innovation".

However, previous research uses the concepts of environmental innovation and innovativeness interchangeably (Cainelli et al., 2012, 2015). Moreso, some studies on environmental innovation focus on the characteristics that make environmental innovators different from non-environmental innovators (Ghisetti & Pontoni, 2015), but has been few observed how firms could develop environmental innovativeness capability.

In addition, it is also suggested that firms possess less knowledge on the activities required to perform environmental innovation (Hall & Clark, 2003), while scientific organizations (i.e., universities and public research institutes) possess highly specialized

human capital, distant and different knowledge from industry, and the capability and time to developing costly technology with longer time-to-market (Agrawal, 2001).

In this regard, it has been found that cooperation with scientific organizations fosters firm-level environmental innovation (Ghisetti et al., 2015). There is few research about how innovation resources, such as knowledge from scientific organizations, are deployed within the firm to develop environmental innovativeness capability.

2.1.6 Supply-Chain Strategy

Businesses frequently fail to link their supply chain strategy to their rival strategy, according to Mckone et al. (2009). Because inter-organizational and collaborative integration of the supply chain participants needs a relationship that combines resources, extends combinatorial thinking, and promotes behavior and collaboration, these findings raise concerns about how strategy is created.

For a supply chain plan to be successful, partners must be committed to long-term partnerships, share similar objectives, integrate processes, behave cooperatively, and share information, risks, and benefits (Mentzer et al., 2001). Narasimhan et al., (2008) stated that strategic "alignment," which represents a blend of viewpoints from each member and affects how the others perform, is what makes the group successful.

It is even more concerning that progress toward "adapting" supply chain principles is slow in some industries (Saad et al., 2002) and that supply chain decisions are frequently based on individual company profitability goals considering the findings of Mckone et al. (2009) that in practice, supply chain strategy is frequently unrelated to competitive strategy (Leng & Chen, 2012).

These results are concerning because there is substantial evidence in the literature to support the idea that a supply chain strategy is a unique entity system that incorporates all the supply chain players (Mintzberg et al., 1998; Narasimhan et al., 2008; Schnetzler et al., 2007; Perez-Franco et al., 2010; Ivanov, 2010).

According to Mentzer et al., (2001), the supply chain as a philosophy involves a network of businesses and complex organizational structures brought about by numerous strategic alliances. For this reason, he defined the supply chain as a confederation and a single entity rather than as a collection of parts carrying out distinct tasks.

Strategic partnerships must develop in order to integrate demand management, manufacturing, distribution, and capacity planning, as well as quality and materials management, product delivery, and interactions throughout the supply chain (Narasimhan et al., 2008). According to Ivanov (2010), the supply chain is a "networked organization" made up of a number of businesses working together to obtain raw materials, transform them into finished goods, and then transport those goods.

The term "supply chain" typically refers to a group of players (companies or people) who transport goods, services, money, or information from the place of inception to the consumer in an incoming and outgoing fashion, also known as "upstream and downstream" (Mentzer et al., 2001). The issue of alignment is put into perspective by the networked organization operating as a union of independent entities, but the process of effectively "aligning" the supply chain activities still poses significant challenges (Sakka et al., 2011).

This is surprising because some of the early research on supply chain integration (Stevens, 1989) found that managing supply chain integration as a singular entity, thinking about it as

a strategic choice, along with using the right tools and methods, produced market share advantages and low-cost base asset.

Sakka et al., (2011) argued that knowledge elicitation, containing, mapping, and/or merging should be the starting point for simulations by adapting and applying existing models to address the complexity of "adapting" and "aligning" supply chain problems. They also presented the fundamentals of semantic alignment. Since supply chain strategy represents a "single entity system" and "confederation" (Mentzer et al., 2001), "networked organization" (Ivanov, 2009), and requires integration and cooperation for sharing information, risks, and rewards (Mentzer et al., 2001), combining resources and capabilities, the approach proposed by Sakka et al., (2011) is applied in this study to build conceptual logic (Narasimhan et al., 2008). Whereas McKone (2019) points out that there are no connections between supply chain strategy and competing strategy.

2.1.7 Supply Strategy Formulation

Fisher (1997) suggests that the market's characteristics for the supplied product should be examined as the first stage in creating a supply chain strategy. Other crucial factors include market norms, product variety, product life cycle, predictability of demand, and impacts like the percentage of demand satisfied by in-stock products (Fisher, 1997). As an alternative, Narasimhan et al. (2008)'s plan viewed internal and exterior factors as the cornerstone for developing a supply chain strategy. In order to create a functional level supply chain plan, it is necessary to "assess the internal and external variables that contribute to or limit its economic success," according to the study Narasimhan et al., (2008).

Frohlich and Westbrook (2001) make a further addition to the subject by empirically classifying various supply chain strategies into five valid categories, where different types vary in their orientation toward suppliers and/or customers and degree of integration. Although familiarity with the categories is beneficial, the method is limited to focusing solely on integration, which diminishes other characteristics that define a particular supply chain strategy, such as 'efficiency' and ‘responsiveness,' which Fisher (1997) contend are critical to a company's success.

Mentzer et al., (2001) provided a set of values in which they described "trust" and "commitment" as enhancing elements for building faith with supply chain partners and meeting stated goals. Because the Mentzer et al., (2001) approach is centered on supply chain'orientation' and' management,' it does not address the issue of strategy formulation.

Nonetheless, several ideas in this paradigm provide valid postulates for formulation methods. These are the postulates: To begin, agreement on a goal, essential procedures, and the selection of a supply chain leader is critical in supply chain coordination. Second, businesses must eliminate their preferred functional strategies in a supply chain. Third, companies must create a process approach incorporating the reorganization of all important supply chain functions.

As a result, the literature reviewed on the supply chain strategy formulation problem points to: (1) predicting a product's demand, market standards and influencers, product variety, and life cycle; (2) examining internal and external factors; (3) concentrating on supplier or customer and level of integration; and (4) taking into account trust and commitment, or interdependence and organizational cohesion (Mentzer et al., 2001). The rationale for why the supply chain formulation criteria have not been merged and put into practice to develop a supply chain strategy framework was explained in this document.

2.1.8 Supply-Chain Realignment

Martnez-Olvera and Shunk (2006) developed the 'customer-product-process resource' (CPPR) paradigm and provide supply chain structural components based on six business models. This framework connects the suggested business models to the supply chain structural components that define a supply chain strategy.

The CPPR framework is a realignment instrument that should be used in tandem with a realignment approach. The realignment process consists of four steps: assess the current operation of the company's supply chains using the CPPR framework, define the possibility of transferring each of the models in the CPPR framework, calculate the cumulative effort of realignment, and choose the model that requires the least effort from the company.

Martnez-Olvera and Shunk (2006) intended to develop a reformulated strategy by realigning the supply chain strategy to one of six pure kinds. Their model's limitation clashes with the numerous aspects resulting from multiple supply chain players and participation with individual company strategies all interconnected to the supply chain strategy. Another weakness of the framework is its emphasis on transitioning from the current to the desired strategy while ignoring the company's primary goal and goals in the process. This model, for example, made no distinction between the variables of the company's goal and the route to getting there. In this regard, the model appears to have failed to apply the supply chain strategy phenomenon's intricacy. They developed in their subsequent work.

The emphasis on configuration and absence of thought for formulation is the most limiting element in this framework in the context of this study. However, the value of their methodology to this study is the implementation of a value chain-based approach that needed the supply chain strategy to be conceptualized as 'one company'. Their paradigm offers

business-driven criteria for supply chain strategy design, implying that the value chain represents the business models of individual businesses cooperating to form a supply chain.

2.1.9 Transport and Logistic Integration

Logistics is described as the process of planning, executing, and managing the efficient movement and storing of products, services, and information from point of inception to point of usage in order to satisfy the needs of customers (Bowersox et al., 1999). Given the breadth of activities, logistics allows cross-functional integration and management of integrated activities (Morash et al., 1996; Langley & Holcomb, 1992). In general, competitive supply networks have tightly integrated logistics operations (Stank et al., 2001).

The emphasis of some literature is on functional logistic integration within a business (Bowersox & Closs, 1996), while other literature is on logistic integration across supply chain companies (Stock et al., 1999). Logistics integration is described in this context as the integration of activities across functional divisions and business activities with activities of other supply chain participants (Stock et al., 1999). This supports the idea that logistics can be used not only to coordinate supply chain participants, but also to provide consumer value and competitive benefits (Chen & Paulraj, 2004).

Increased logistic cooperation within and across business and supply chain operations results in improved organizational and practical performance, according to the research. Larson (1994), for example, determined that there is a strong connection between inter-organizational logistic integration and cost reduction, whereas Ellinger et al., (1997) verified that improved customer service performance can be accomplished through integrated logistics management.

Stock et al., (1999) also stated that internal and exterior logistic integration improves efficiency in long manufacturing supply networks. Empirical data supports the connection between logistic integration and improved operational efficiency (Bowersox & Closs, 1996, Stank et al., 2001). The broad scope of logistics activities allows for cross-functional integration and management of combined activities (Morash et al., 1996; Langley & Holcomb, 1992). However, study on supply chain strategy design has largely overlooked the importance of logistic integration in strategy development.

Frohlich and Westbrook (2001) examined upstream supplier and downstream customer integration and provided evidence that increased supplier and customer integration improves supply chain performance. Their research found that because larger joint tactical activities must be advanced through integration, the strategy issue becomes one of degree. The writers stated that without an "overarching" operations plan, an isolated manufacturer will most likelyprevent supply chain players from performing to their full potential.

Now, our research was based in two theories, by using the qualitative descriptive analysis for the industries of automotive, consumable goods and technology, that companies in India produces and trades. Based on the suggested research questions, the study conducted conversations with the management team to understand their real strategy character and goals. The suggested study served as the basis for the data analysis, which focused on the modifications or mitigating actions the automotive sectors are taking in the face of the world's unstable economic conditions.

2.1.10 Theory of Research

From the reviews above, it is indicative that India´s challenges are many, and particularly organizations that are fighting to remain alive after the pandemic as supply chain has come to a halt in some industries. The models and theories discussed are based on a strategic alignment model that includes six areas to support mitigation.

First off, choosing an excellence framework like Baldrige or Deming suggests that organizations should concentrate on efficient administration of business performance in order to foster excellence and raise their level of competitiveness. The second step is choosing the plan that best fits the way the business operates. Thirdly, by having a staff that is prepared and educated to coordinate with and accomplish the corporate goals and objectives. The choice of a solid business integration of alternatives in accordance with the firm business model, along with the required tools for training, assessment, and growth, is the fourth factor. Fifthly, it is crucial to have a solid process in place, such as ISO, Six Sigma, or any other capacity developed model, depending on the unique business requirements. Finally, it is crucial to have a solid culture focused on consumers and a positive work atmosphere, with defined organizational values. In the current state of the globe, maintaining a company is difficult.

Many challenges are encountered, and only the decision-makers capable of taking better transformational decisions will get better results. Having this framework model is useful to lever business excellence and innovation, helpful for organizations around the world to rediscover their potential and make the transformation possible.

When we talk about innovation and competitiveness, can quote Elon Musk, “Innovation often doesn´t come through one breakthrough idea, but through a relentless focus on continuous improvement”.

Hence, these complications can be handled by using an ontological approach for semantic alignment (OASA), in which knowledge elicitation, containing, mapping, and combining serve as the basis for modifying or aligning supply chain strategy principles (Sakka et al., 2011).

To handle the phenomenon of strategy 'absence' (SA) in strategy formulation, the method should conceptualize strategy as a set of options, patterns, or judgments (Inkpen & Choudhury, 1995). The process should begin with an agreement on strategy goals, but it should avoid prescriptive and detailed methods, and it should handle the operationalization elements of formulation (Platts et al., 1996).

2.1.11 Human Society Theory

According to Agrawal and Gupta (2020), the lockdown in India had a significant impact on supply networks, the movement of raw materials, and industrial activities. For some businesses, this resulted in a halt to operations or even a closure as a result of these effects. If you can't measure and monitor an activity, you can't handle it effectively (Zuñiga, 2005).

However, for some people, all of these adjustments and alterations may lead to the fastest growth and development seen in recent memory. The efficiency and times to prevent disturbance tails may be impacted by the outcomes in the manufacturing and delivery networks. Therefore, it is necessary to evaluate the policies that must be created for the shift from the recovery to the disruption-free operations mode, which will result in the normality

of the peaks or valleys encountered by the organizations and prevent disruption tails (Ivanov, 2019).

India has been providing a good framework for global trade in the present century, based on strengthening relations for economic interactions, by bringing value to the supply chains (Jain, 2020). The projections of growth for Gross Domestic Product (GDP) in India could stay at 9.5% (IMF, 2021), for the benefit of the country that has encountered a lot of difficulties in this pandemic situation.

The process to overcome the supply chain challenges should begin with an agreement on strategy goals, but it should avoid prescriptive and detailed methods, and it should handle the operationalization elements of formulation (Platts et al., 1996).

Furthermore, stakeholder's discussions in this context should consider dividing the subjects of strategy and operations to prevent misunderstanding about what is being asked (Menda & Dilts, 1997; Platts et al., 1996). The method, process, and participation, which necessitate communication mechanisms to allow idea comprehension, can be clarified further by employing formulation criteria (FC) (Inkpen & Choudhury, 1995). Evaluation factors should be used for idea comprehension. The evaluation criteria (EC) can be used as a technique for distilling innovation to strategy in the process of systemic innovation (Sheu & Lee, 2011).

2.1.12 Summary

This chapter reviewed pertinent literature to the thesis subject and explained how supply chain strategy evolved as a field. The necessity to integrate and build organizational competencies to produce value, as well as the primary improvement techniques, methods, and methodologies, were outlined within that field.

By making observations (previous data research), interviews, and analysis based on areas of management described by these methods in supply chain management, this study diagnosed various theoretical concepts related to the Malcolm Baldridge and Deming criteria for business excellence (Weerasinghe & Thisera, 2016), and various models.

It is a technique for enhancing total organizational performance and can actively contribute to ongoing performance improvement by using measurement and demonstrating input on the organization's performance (Fauzi, 2021). The next chapter will discuss the methodology used to address the supply chain gap identified from the review and introductory problem statement.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter describes the study methods used to develop and validate the conceptual framework. It contains the methodology's justification, methodology specifics, ethical concerns for the study, and chapter conclusions. Eisenhardt's (1989) advice on creating management theories is consistent with the methods outlined. The units of analysis, the data was performed, and the data collection methodology are all described. Concerns about reliability and authenticity are addressed with specifics. The data checking procedures, including recording techniques and data modifications, are detailed, followed by a discussion of missing data and implicit knowledge discovered in the answers. Lastly, the data analysis methods used are described, followed by an explanation of why these techniques were chosen.

3.1.1 Overview of the Research Problem

Decision-makers and stakeholders in the worldwide supply chain in the Indian economy, such as ports, warehouses, merchants, and organizations, needed to be conscious of ongoing changes due to disruptions such as those created by climate change, human factors, and global pandemics such Covid 19 disruptions has resulted in supply chain demands drops and surges, reduction of productivity, restrictions on access and storages, raw material shortages among others.

Hence, small and medium enterprises (SME´s) leadership constantly determine the style used to make decisions, and the good coordination of resources allocation to ensure

business continuity management (BCM), against competitors and larger corporations (Riglietti et al., 2022).

It is very often seeing how SME´s lack strategies to assist in overcoming supply-chain disruptions, especially in this moment in where post-pandemic actions are needed to maintain holistic supply-chain and managerial decisions, necessary to mitigate the gap on supply chain disruptions in the global markets.

With this perspective, if organizational leadership is dedicated, then holistic managerial decisions will be made in the right way and at the right time, using a transformational framework of structured criteria and assessment methods to improve in a world of competitiveness and performance, so it will assist businesses all over the world in rediscovering their potential and capacity to achieve innovation and business excellence by using performance levers.

3.2. Literature Review

The Partnerships between organizations and secondary stakeholders have progressed from an influence on where firms were pressured to modify their ways of behavioral supply chain practices, to be more collaborative in where it looks for having joint ventures drives (Gómez-Miranda, 2015). Some studies in the past, related to SSCM and SCM, have ended in stating that secondary stakeholders persuade the phenomenon of socially and environmentally sustainable practices (Pekovic & Delmas, 2013). The literature review discussed many models of integration from the concept of sustainability in the context of supply-chains using an ontological approach for semantic mitigation.

3.2.1 Socially Sustainable Supply Chains

The sustainable supply chain management is described as per carter and rogers (2008), in moving toward a new theory, the sustainable supply chain management framework defines it as *"strategic, transparent integration and achievement of a firm's social, environmental, and economic goals, in the systemic way of key inter organizational business processes for improving the long-term economic performance of the individual company and its supply chains.""*.

Socially, supply chain involves compliance with the accountability of negative impacts in the society, integration of vulnerable groups, practice of ethical values (Abbasi, 2017).

Some practical examples of socially sustainable practices might be labor certification and supplier's audits, welfare and safety programs for employees, suppliers' development programs for poor suppliers, codes of conducts (Boyer et al., 2016).

There´s come confusion related to corporate social responsibility (CSR) and social sustainability. Social sustainability and CSR combine areas such as accountability, value creation and balance of stakeholder interests. The idea of CSR relates more to the area of accountability, and sustainability is more focused on balance and value creation. (Montiel, 2008).

There is value creation in social sustainability supply chains economic and social value are created. Economic value refers profitability, but social value is as stated by Austin, et al., (2006), "*the pursuit of societal betterment through the removal of barriers that hinder social inclusion, the assistance of those temporarily weakened or lacking a voice, and the*

mitigation of undesirable side effects of economic activity". So, we conclude to refer to value creation in this present study as the joint creation of social and economic value, both together.

3.2.3 Operationalization of Theoretical Constructs

There are many research methods, can be used, in which the most common are the qualitative and quantitative methods. For the purpose of our study, for overviewing and understanding of concepts, thoughts and perspectives, surrounded by experiences faced by organizations, the methodology used was the qualitative descriptive research method using a case study to analyze the supply chain (Atmowardoyo, 2018). This is a learning technique in which the researcher faces a particular problem. Data analysis allows the researcher to enter a new field in which can be discovered the unknown within well-known borders while continually monitoring performance, scalability as well as general existing knowledge (Mfinanga et al., 2019).

This research is based on qualitative descriptive analysis for the industries of automotive, technology and consumable goods, that companies in India produces and trades in India. It intends to perform interviews with the managerial team, to understand their actual strategic profile and purposes, based on the research questions proposed. The data analysis will be guided by the proposed research to dive into what changes or strategies automotive industries are implementing during global unstable economic activities.

The study drive decision-makers and shareholders to pursue their value generation, and becoming part of important aspects like new products and services can be provided to optimize the operation flows and EBITDA on final figures, which can be rated by adequate valuators in the public markets. Also, the study will analyze how they compete, based on structure, policies, investments, and culture with people.

3.2.4. Case Study

Case study research is an inquiry that does not involve experimental control or modification of the phenomenon being studied, and if the limits of the phenomenon and the context are not clear, they can be specified after the question is formulated (Benbasat et al., 1987). Meredith (1998) demonstrated that case study techniques can be applied to fields of research where few studies have previously been conducted. A study into current methods and methodologies for handling the greenfield project formulation issue is one possibility.

Furthermore, case study research allows for the use of supplementary data from earlier studies. The ability to study a case as an area of research where studies have previously been conducted generates 'outstanding strengths' (Meredith, 1998), which is helpful in reducing the scope of the strategy formulation issue in the supply chain context. The method by which supply chain strategies are developed in industry provides very little or almost no opportunity for the researcher to affect or direct the events. The absence of control over events produces uncertainty, which increases the worth of having the flexibility to use multiple research techniques, but not the obligation, based on different formulation scenarios.

Developing a supply chain strategy for automotive initiatives entails the intricacy and risks that arise from researching an idea in a real-world situation. In the framework of automobile integration strategy, the connection between supply chain formulation and company strategy is not obvious. In such cases, case study research allows for greater freedom in analyzing different data sources (Benbasat et al., 1987). To address these complications and doubts, a new strategy to supply chain formulation is required, as is discarding the conventional practices used in current supply chain literature to pursue conceptual truth.

A case study method allows for "close examination of the hypothesised function of 'causal processes" (George & Bennett, 2005). Investigating the supply chain as a system of various components, derived from the sum of activities, allows for the systematization of causal processes in such a way that they produce a specific type of result, such as overall strategy. According to George and Bennett (2005), a case study is defined as an instance of a series of activities, such as an event of scientific significance, that the researcher chooses to examine with the goal of creating a theory or new knowledge.

The phenomenon of scientific interest chosen for this research is the occurrence engaged in determining the operational activities of individual participants, which includes the formulation as well as the relationships between the activities and the participants. This study investigates and evaluates how the introduction of one activity affects a potentially complicated configuration of equally independent activities from various organizations as a direct consequence.

According to Gerring (2007), a researcher cannot create a valid research query unless they have a general understanding of all components. Yin (2015) agreed, stating that a case study research design must include five elements: 'the study's query, its proposition, its units of analysis, the reasoning connecting the data to the propositions, and the criteria for understanding the results'. According to Yin (2015), these components will effectively impose the assembly of an opening theory related to the topic of the research study. In other words, whether the study is aimed at creating or testing a theory, the preliminary plan creation stage must precede the data gathering stage. This research's preparation for theoretical creation has taken a long time.

In order to address some research questions, the study was able to use secondary data from earlier research to create a conceptual structure for the case study (Chapter 5) The framework contains duties that must be completed as part of the process of creating a thorough greenfield project planning framework. Secondary data refers to previously gathered data for a different reason and by a different scholar (Ritchie & Lewis, 2003). Secondary data is used in accordance with current literature suggestions to save time, money, and work burden while also avoiding repetition of research effort and investment (Given, 2008).

3.2.5. Research Investigation

The method of gathering, using, and analyzing evidence is represented by research philosophy. In the Western scientific research heritage, there are two main research philosophies: positivist (or scientific) and interpretivist (or anti-positivist) This research falls under the purview of interpretivist philosophy.

The first stage in the study was to pinpoint the source of the observed variation in strategy absence and its connection to the variables under consideration: formulation and integration. Obtaining approval from top executives to manipulate the running business and supply chain strategy of multiple businesses in the same supply chain, on the other hand, is extremely unlikely. To guarantee validity in a complex and dynamic supply chain setting, case studies were used to conduct real research, while generalisability relevance was continuously addressed with a grounded theory method.

3.3 Research Purpose and Questions

The general goal of the research is to examine how organizations use supply chain production strategies to thrive during the epidemic and what kind of analysis they use to

revise their business choices. The intended audience consists of Indian participants in the global supply chain, including ports, warehouses, merchants, and other businesses that must be informed of ongoing changes due to disruptions.

The implications are for decision-makers and shareholders who are pursuing value generation and seeking to incorporate new meaningful changing strategies of planning and implementation in order to create a virtuous cycle of improvement and assessment (Mithas, 2015), optimize their operation flows, and earnings before interest, taxes, depreciation, and amortization (EBITDA).

Research Specific Aims

- To examine the core values of organizations' strategic decision-making in the supply chain.
- To examine the core values and concepts of organizations' strategic decision-making in the supply chain
- Identify manager mindset and frameworks of how business excellence can be used in mitigating organisational performance, to create excellence and improve their competitiveness.

Research Question

What are the post-pandemic actions needed to maintain holistic supply-chains and how will your organizations' strategies assist in overcoming supply-chain disruptions?

Hypothesis

The study hypothesizes how supply chain management differentiates organizational performance in global disruptions.

3.4 Research Design

To answer the proposed research questions, the study intended to use a qualitative method. The study shall use case study research as mentioned by (Schoch, 2020) is an in depth investigation of a contemporary phenomenon within its real-life context. Typically relies on multiple data sources and is bound by both space and time. The key is to understand the case and ensure that the research questions support the case study design.

Fauzi (2021), describes the researcher as the source of the instrument, namely the direct data collector. Then, will analyze something that is being sought until the research is declared complete. By conducting observations (based on prior data research), interviews, and analyses based on management areas covered by these techniques, this study aims to unearth various bits of information regarding the Malcolm Baldridge and Deming Criteria (Ayubi, 2020) for business success.

It is a method used to improve overall organizational performance and can play an active role in improving performance continuously by using measurement and proving feedback on the performance of the organization (Fauzi, 2021).

Malcolm Baldridge and Deming has several criteria that can be used in the framework of an integrated approach in areas of management and business such as: leadership, strategy, customers, measurement analysis and knowledge management, workforce, operations, and results. The data collected from the interviews intends to follow the criteria of the Baldridge and Deming Program as the way to analyze and make final reports as a result of this study.

The research employs a triangulation strategy to help validate the study's trustworthiness. The triangulation technique is a strategy for increasing the credibility and validity of study results (Cohen, 2000). Triangulation aids in explaining and investigating

complicated human behavior through a variety of techniques in order to provide readers with a more balanced account of the study (Murdock, 2019).

3.5 Population and Sample

Top management senior managers and directors in executive roles from the international Indian company Tata Group and Mahindra Automotive served as the study's populace. The following areas were evaluated during the interviews: core values and skills, client endurance, viewpoint on rival performance and comparison, effectiveness, and efficient methods of development assessment.

The selection of samples and cases to use is clear, due to the uniqueness of the companies or organizations, with Tata Consultancy Services, and Tata Consumer Products, and Mahindra suggesting 35 applicants for the interviews and surveys and gathering all the data in accordance with the structure of data required to support and integrate this study from Automotive senior management.

In addition, over 70 practitioners, businessmen and top managers from various organizations over the globe were substantially surveyed with 14 semi structured questions about the criterion of Deming and Malcolm Baldridge covering the areas of: establish a reason for improvement, embrace the new attitude, stop relying on inspection to ensure quality, collaborate with a single provider to cut costs, practice continuous improvement, on the-job training, and leadership to drive out fear and dissolve silos. Eliminate annual reviews, implement self-improvement initiatives, and engage all employees in the change. The people interviewed and surveyed are top executives and decision-makers, with experience in their respective diversity of industries such as automobile, consumer products, and technology

industry, as they are in constant search looking for strategies to mitigate the supply-chain disruptions in their institutions and improving economic growth of the country.

3.6 Participant Selection

It is important to base 9 semi-structured interview questions about business excellence and leadership mindset in improving SME´s performance. The interview will be confidential and allow research participants to answer confidently. The semi-structured interview will be conducted with SME´s leaders to ascertain the necessary loops and strategies for leadership performance in their businesses. Email letters will be sent to them in advance to solicit their permission to conduct the interview. Upon receiving confirmation of the participant's willingness to participate in the study, I will send them an informed consent form and a date that is suitable and convenient to them.

Tong and Dew (2016) noted that in qualitative case study design, the researcher must focus on selecting respondents who can express viewpoints related to the research question in order to achieve data saturation with SME´s leaders on business excellence and supply chain management strategies to enhance business results and to ensure an overlap of data to achieve saturation and the study objectives.

Morse (2015) claimed that only after data saturation is reached, then the study phenomenon becomes purer and more understandable. Any variables that, if understood, would alter the outcomes of the study, all overlapping information would potentially eliminate the unknown issues (Morse, 2015).

Moreover, for the interviewee to communicate openly, Sivell et al., (2019) mentioned that the researcher must conduct interviews in a setting that is comfortable for the interview

respondent. In addition, the researcher must always be flexible and diligent in supplying the research participants with the various places of convenience and scheduling to ensure that the interview takes place, the study interviews at the time and date selected by the convenience of the interviewee.

Even in purposeful sampling, a limitation may emerge as the researcher can leave a quality sample out of the collection and not capture the entire essential to fully explore the study questions (Sivell et al., 2019). Nevertheless, these researched participants were intentionally selected for participation because they have intimate knowledge of the organization, the staff, and the association's success history.

The permission of the study subjects to perform the interview was obtained. The participants were chosen on the basis of their personal involvement in small company administration.

The next subheading of the research explains the subject selection.

3.7 Instrumentation

Qualitative research can help researchers to access the thoughts and feelings of the interviewee participants, which can enable development of an understanding of the meaning that people attribute to their experiences (Austin & Sutton, 2015). The data collection from qualitative work requires reflection on the part of researchers, both before and during the research process, as a way of providing context and understanding for readers. Essential details of the study phenomenon, including the observation on the emotions, feelings, and thought processes is a very important area of the work (Silverman, 2016).

The study researched data was taken through primary and secondary methods. The study used the semi-structured interview with questionnaire as the primary source of data to

get some general insights of the supply chain management disruptions, and the implication of help firms worldwide to rediscover their potential and capacity to achieve innovation and business excellence by using performance levers. The primary methods were collected through personal one-on-one semi-structured interviews with questionnaires and surveys. The secondary method reviewed documents, government websites, and academic journal articles. It enabled the researcher to focus beyond the literature on the problem of interest in the study.

Adeoye-Olatunde (2021) states that semi-structured interview methods allow the researcher to provide the flexibility to the participants to freely express their thoughts, on a structured way, by clarify responses with some follow-up questions for better understanding from the interviewed. Roberts (2020) states that the interview allows the researcher to gather the business leader's knowledge and experiences and analyzed the meanings of their exposure to business and experiences.

Moreover, the one-on-one interview is essential in that it assists in establishing rapport with the interviewee and gets the support needed to obtain accurate data for validation. Document analysis is essential as it can be used by the researcher to collect documents to develop an understanding of the study phenomenon (Schneider, 2018). Hence, the source of evidence the study chooses includes interviews, direct observation, and document analysis as a secondary means of data collection.

Four sources of evidence, as stated by Roberts (2020) in qualitative research, that can be used are (i) interviews, (ii) documentation, (iii) direct observation, and (iv) archival records. The original document gathered helped in explaining the business leadership approach to supply chain management disruptions. Besides, the study reviewed policy documents and structures associated with customer satisfaction from journals from the INCAE Business

School in Costa Rica, and academic journals. The use of multiple evidence sources, such as interviews, record analysis, and observation, form an important part of methodological triangulation, according to Dzwigol (2020).

The problem of choosing research methods in the field of strategic management is always relevant in strength, which can be provided by a profitable and competitive method depending on the managerial situation.

A high level of dynamic processes in strategic management requires constant development of research methodology and tools. In many respects, and precisely because of this, one of the key features of research is the limited limitation of possibilities of using the approaches for choosing a method precisely in strategic management. Under these conditions, one of the main problems of this type is the problem of effective applications of qualitative methods, as well as the possibility to reveal the results of statistical observations and list groups.

In strategic management, it is noted that qualitative research can be defined as the type of research, in which the forms are observed that are determined with the corresponding logic (strategies) of the research topic, including missions and knowledge, joining them. Special qualitative methods are aimed at determining causality (Dzwigol, 2020). Therefore, the study used several sources such as methodological triangulation to enhance the reliability and conformability of the data. Triangulation is often viewed as the use of a set of various methods so that to achieve coherent foundations for empirical inferencing (Kosorok, 2008).

Methodological triangulation ensures validity and richness of the research as it offers a variety of datasets such as the research interviews, documents obtained from literature reviews, and observations before and during the collection of the data.

The study considered prior interviews and experiences that were thoroughly done in preparing for the interview, forming in mind the attributes of balance within the interview.

3.8 Data Collection Procedures

The information gathered from the conversations is intended to be analyzed and presented in final reports according to the standards of the Baldridge and Deming Program. The following methods of analysis and processing were used mainly for the qualitative data collection:

The data was arranged and prepped with the questionnaire in hand and shared with the interested party. All of the notes, transcripts, and additional materials, including papers and books notes from various works, were compiled in order to comprehend the corporate cultures of the group of businesses.

The information was examined and researched using a variety of sources, including annual reports from public groups, statements from publicly traded businesses, reading materials about the group of companies, and books.

- Codes were created using thematic analysis matching the Deming theory criteria.
- The Thematic themes allow to identify the respondent's views on supply-chain disruptions, so they can be valuable statements to be considered.

The interview procedure was followed to maintain a safe and good relationship with the interviewees before, during, and after the interview period to build trust and collect accurate data. The interview protocol is attached in Appendix B.

In a convenient date and time, the researcher called each of the interviewees and began the interview by expressing appreciation and presenting a summary of the research subject. I sent a copy of the consent form and received from everyone a signed copy.

The time for the interview was 30-60 minutes approximately, and all the interview protocol is attached in the appendix of the study, which explains how the researcher conducted the interview with the research participants.

To ensure conformity and to obtain a detailed overview of the participant's experiences, Bauman (2015), Bowden and Galindo-Gonzalez (2015) claimed that it is important for the researcher to provide participants full disclosure of the interview process. In addition, conducting interviews for qualitative case study analysis is the primary method of data collection. The interviews assist the research in accessing the depth of personalized knowledge of the respondents (Hancock & Algozzine, 2021).

Furthermore, the researcher warranted data saturation to explore supply-chain management disruption strategies that small and medium enterprises use to advance performance and reach business excellence. Data saturation can be determined by the study's uncontainable issues, such as the participant's knowledge and familiarity with the research questions, and I ensured standardization of the sample size.

The lack of research participants to fully answer the research question can put the study in jeopardy to reach data saturation. The sample size standardization also requires all respondents to answer the same questions in the same format in a standard way, and the investigator must interpret the responses in the same way (Malterud, 2016).

The use of interviews helps the researcher to gain a better understanding of the stories of those questioned and, if possible, succeed in asking probing questions (Granot & Greene, 2014). It is essential to highlight that one of the merits of conducting semi-structured interviews with open-ended questions much helped explore the lived experiences of the researched participants.

Finally, to avoid the demerits of collecting documents such as edited documents that lose literal meaning or exposure to confidentiality infringement, the study collected data and ensured member controls to establish a proper understanding and validity of the data collected. According to Roberts (2020), data collection instruments must be explicit, the researcher tried as much as possible to accessed and used documents within the last five years that are relative to the study, and this ensured the reliability and generalizability of the study.

3.9 Data Analysis

Roberts (2020) stated that in qualitative research, the researcher is the instrument used to collect the data. The study uses purposive sampling. The data will be collected through personal one-on-one semi-structured interviews and open-ended questions to the study respondents. All the collected data that will form the interviews, and docu5ments will be triangulated.

Fusch and Ness (2018) argue that triangulation is the use of many strategies that the research examines, such as interviews, reports, and observation, and the degrees of the perspective of the same phenomenon. They are using triangulation for the study to assist in validating the study results. To identify common patterns, triangulation will help to cross reference the data obtained from the interviews and equate the transcripts with the secondary sources. The study created a matrix for each participant interview to easily find themes and connect the data.

According to Merriam and Tisdell (2015), a two-way analysis and interpretation is a primary way to get positive input from the interviewee, which the researcher uses to validate the validity, interpretation, and understanding of the interviewee's statements. A copy of the

interview's research explanations was sent to the interviewee, and no corrections were needed during the member checking process. Also, as a result of numerous interviews and the difficulty of data organization and analysis in qualitative studies, the study used computer-assisted qualitative data analysis tools, such as Microsoft Office.

The themes of the study were compared to those indicated in the themes or instructions of Malcolm Baldridge and Deming Theories, including (i) leadership, (ii) strategy, (iii) customers, (iv) workforce, (v) operations, (vi) and results.

The study themes were associated with the different dimensions of the conceptual structure to gain an informed understanding of the strategies for supply-chain disruptions required to enhance levers of excellence and innovation to improve in a world of competitiveness and performance of small and medium enterprises in India.

Reliability and Validity of the Study

Roberts (2020) mentioned that qualitative study quality depends on withstanding the test of reliability and validity. To have a trustworthiness of the study, the researcher ensured reliability and validity by addressing the four most essential components of dependability, transferability, credibility, and conformability advocated by Shoaib and Mujtaba (2016).

3.9.1 Reliability

Reliability alludes to the accuracy with which, if replicated, the analysis would yield the same results. Fusch and Ness (2018) suggested that qualitative researchers must use different viewpoints on the importance of the analysis. The study focused on all the changes influencing the analysis procedure to ensure data compatibility to guarantee data consistency, data strength, and reliability. During an interview procedure, coherent and transparent

interview questions, an interview transcript, and a copy of the transcript were given for confirmation by the research participants.

3.9.2 Validity

To ensure the research results' trustworthiness, the researcher must confirm adherence to the standards of the research by conforming to the principles of integrity, transferability, and reliability. Roberts (2020), posits that the research's validity will compromise the quality of the research if impaired during the research process. Hence, validity is the principal meter of research quality, which guarantees an accurate interpretation of the data to accomplish valid conclusions.

Procter et al., (2017) said that because the qualitative researcher relies on subjective, interpretive, and contextual data, the findings of the researcher must shift to ensure the reliability and validity of the study results. Hence, the research findings must be consistent, believable, applicable, and credible if they are useful to readers and other scholars. Again, to withstand the scrutiny, scholars should take crucial factors of integrity, transferability, reliability, and conformability into account. The analysis must ensure the precision, richness, and trustworthiness of the data rather than the data's quantity to gain legitimacy (Procter et al., 2017).

Triangulation is very critical as it ensures precision from various viewpoints by cross-checking data interpretation with research respondents. The use of member checks helps to create credibility and provide the analysis of the data is correct via constant interaction, constant observation, and external job audits, the study demonstrated.

3.9.3 Credibility of the Study

The researcher must ensure that the findings are generalizable and acceptable to other environments, according to Procter et al., (2017), for the study to achieve transferability. To help readers extend the results correctly to different contexts, the report carefully explained the analysis context.

The study also guaranteed compliance by adhering to objectivity during the analysis process and ignoring the research participants' prejudices.

Malterud (2016), cautioned that the probability of data saturation would be jeopardized if respondents did not thoroughly address the research questions. The study achieved saturation of the survey with ten (11) top executives and a Survey of Graduate students of MBA and DBA, through standardization of the sample size. Standardization allows respondents to respond in a standard manner to the same questions using the same format, and the researcher must interpret the answers in the same way.

3.10 Research Design Limitations

Roberts (2020) stated that assumptions are facts that have not yet been verified but validate the study. Hence, the researcher made some assumptions when developing and analyzing the research design. The researcher assumed that TATA Group and Mahindra Automotives were overall representative of India´s SME´s business sector and leaders.

Furthermore, the researcher assumed that the small sample population represents the SME´s business sector's demographic characteristics in India.

Moreover, it is difficult to presume that interview questions were responded to honestly and accurately by the top executives. The researcher also anticipated that all the researched

participants would have appropriate knowledge of effective strategies to assist in overcoming supply chain disruptions, achieve innovation and business excellence.

Finally, the limitations that pose a vital weakness of the research design are the study's no generalizability and the chances of the research participants being hesitant to share their information openly.

3.11 Conclusion

The study methodology and theory that guided the research strategy were given in this chapter. The interpretivist approach to understanding the intricacies in supply chain strategy formulation and the Tata and Mahindra group's reactions to strategy formulation heavily impacted the techniques used. The use of qualitative research was deemed suitable in order to comprehend societal reality from the perspectives of respondents and to gather detailed and rich data. The study employed a case study strategy and a variety of qualitative methodologies, including in-depth interviews, observations, and secondary data collection. The primary technique of data collection was semi-structured in-depth interviews, which were organized using convenience and purposive sampling methods. The case study's primary business is Tata and Mahindra group.

The chapter outlined the methodology, research design, and sample size, using a case study to analyze methods used by SME´s to overcome supply chain disruptions, achieve innovation and business excellence.

The study stressed the importance of reliability and validity by conducting triangulation. Top executives from SME´s can use the study results to improve the performance of both workers and businesses to benefit the communities.

The findings from the case study are to help firms worldwide to rediscover their potential and capacity to achieve innovation and business excellence by using performance levers.

Research is not free of limitations. Since the study performed case study research, the research emphasizes internal validity over external validity. In this sense, the researcher advises the readers to kindly generalize the results to conceptually different contexts than the studied in this research. Furthermore, the interpretations are based on the interactions between two Indian Companies. Finally, the reader should keep in mind that we observed inter-organizational fit conditioned by firm´s strategy alignment.

It would be interesting to consider that in future research by considering Supply Chain Visibility as a key factor of decision-makers, and Ports, warehouses, stores, and other organizations that are part of the worldwide supply chain needed to be conscious of ongoing changes due to disruptions.

The next chapter introduces the findings obtained from the research on the developing of a framework for supply chain management disruptions in India.

CHAPTER 4: RESULTS

4.1 Introduction

Chapter 4 discussed the methodology, design, and data collection for this research study, emphasizing that using triangulation is an important factor to validate the research findings. This chapter presents the findings of results from the interviewed participants of our present study. All the data from them was obtained through interviews, and surveys. Although many surveys are classified by different authors as quantifiable, it can be used as qualitative as it assists in delving deep into open-ended questions (Yin, 2015). The study used surveys to support the interviews as the research felt the need to include it in the data collection. Surveys are great for conducting qualitative research because they are able to pull in such profound and diverse feedback from respondents. They can even make researchers aware of insights they had not previously considered as a possibility. Hence, the study used it to get more data to generate themes through the study triangulation.

For the qualitative case study, the research question was: to which post-pandemic actions are needed to maintain holistic supply-chains? and how will your organizations' strategies assist in overcoming supply-chain disruptions?

To attain the answers to the question, the researcher carry-out a semi-structured interview with 35 top executives and other 35 members from the team in structured survey questionnaires who also play a crucial part in managerial decisions of the firm from Tata Group and Mahindra Automotives. Each executive had more than 10 to 20 years of experience in decision-making ranked positions over their respective organizations. The structured survey questionnaire was also responded to by the 35 executives and additional 35 managers within

the organisation who did not take part in the interview. The reason was for the researcher to validate the findings with what the 35 executives interviewed responds were in the study.

As we mentioned before over the chapter of methodology, each interviewee answered 9 questions, and it was supplemented with 14 survey questions to express their free opinion. The research conducted interviews with the executives from prominent leading companies in India. The interviews were between September and January 2023. The interviews were between 30 to 60 minutes long. As mentioned in the methodology chapter, the study used E1 to represent executives' leaders and alphanumerical (1,2,3, etc.) to indicate the type of position and age categories from the sample population. The E1 used in the results section gives a break of age categories, educational background, and the time span for each participant during the one-on-one semi-structured interview for the study.

Table 1 provides the necessary details which can be seen in the data coding.

The research provides a framework that explains among other alternatives how economic and non-economic actors use traditional supply chain management practices to create socially sustainable supply chains, innovative, in the context of no foreseen synergies between economic and social performance.

The study primary contribution comes from showing how transformational frameworks of organized criteria and evaluation techniques can assist small and medium sized businesses in using tools of business excellence and innovation to enhance performance in a competitive environment.

The research also shows that traditional supply chain management practices are successfully used by organizations to improve the social sustainability of both the community and firms operating in the community. This research could assist firms all over the world in

rediscovering their potential and ability to achieve innovation and business success through the use of performance tools.

The paper is structured as follows. Firstly, the study reviews the literature that shapes and explains the phenomenon of interest in supply chain disruptions. Then the study describes and justifies research methodology employed. Again, the analysis and results are presented with regard to discussion of relevance of the study findings. Lastly, study conclusions are drawn from the study hypothesis using the structural survey questionnaires to supplement the study findings. In structural survey questionnaire, the participants respond to prompts by selecting from predetermined answers (Lai & Waltman 2008). Hence, the study used the Deming criteria to place a strong emphasis on quality development. The process of using interviews and structural surveys has been explained below to validate the research findings.

Deming cycle indicates that the focus on Check is more about the implementation of a change, with success or failure. Hence, the study focus was on predicting the results of an improvement effort, studying the actual results, and comparing them to validate the research work.

4.1.2 Primary Data

This research was able to derive an early business strategy from secondary data, which aided in creating the framework of supply chain strategy integration and development. Prior to adding new data sources, the original data collection was used to generate theories.

A number of electronic communications were traded with the supply chain head business to verify the derived vision and formulation areas. As a consequence, a preliminary theory was developed that explicitly outlined the integration and formulation elements.

Primary data collection with the group of businesses was used to supplement the secondary data collection stage: interviews, direct observation, and participant observation. These results serve as the basis for developing theory, which will be followed by a data gathering procedure to validate the generated theory on strategic integration are:

Phase 1: Interviews

A set of open, semi-structured, and concentrated interviews with directors, managers, supervisors, and engineers from the five partnership firms, chosen through convenience, snowball, and purposive selection, on the subject of supply chain integration and formulation. The interviews were focused on a variety of topics pertaining to their unique supply chain practices and strategies.

The interview durations differed, and the data was subsequently analyzed qualitatively. One flaw in using interviews for data gathering was that the outcomes were influenced by what the person thought was needed or what the participant thought the interviewer wanted to hear.

This prompted interview design with an emphasis on activities targeted at gathering feasible strategic ideas from participants rather than the intended outcomes from the supply chain strategy. To ensure data veracity, qualitative content analysis was used after an interview and previous to the following interview as a strategy to prepare concentrated questions for the following interview and subsequently as a technique for data analysis.

Because of the qualitative content analysis, the data gathering method was able to use three distinct approaches: conventional, guided, and summative (Hsieh & Shannon, 2005). The primary differences between these three methods are: coding systems, code origins, and threats to trustworthiness, which makes data gathering more thorough and impartial.

a) Semi structured interviews with pre-selected participants in the process of developing individual company and supply chain strategies. The participants were actively engaged in the strategy's development. The purpose of the discussion was to determine their strategy vision and objectives in the framework of development and integration of supply chain.

b) Semi-structured discussions with pre-selected managerial function members. This group had a smaller role in planning but was still engaged in functional and practical tasks. The interview was designed to find areas of business and supply chain strategic activity and investigate how these areas link to strategy formulation and integration.

4.1.3 Structural Survey Questionnaires

Survey questionnaires were distributed to 70 people from the Tata and Mahindra group of companies supply chain partners. The executives and some members of the managerial team took part in the survey. The surveys were designed to assess the advantages and disadvantages of integrating and collaborating the practical functions of the participants' businesses and supply chain strategy.

The data collection method is accompanied by ongoing efforts to develop and evaluate theory and expand on extant literature. The objective of these efforts is to redesign the environment for developing an integrated greenfield project supply chain strategy framework that would connect individual businesses' business strategies and supply chain functions toward a shared goal.

4.1.4 Data Coding

The Data to be coded were mostly qualitative and came from primary and secondary sources. Primary data included the transcripts from the interviews, presentations by top

executives of both companies, and the research´s field notes. Secondary data came from reports, brochures, and related information available if open and public sources.

Table 1 details of Top Executives (TCS-Tata Consultancy Services, TCP-Tata Consumer Products). The total number of has been summarized and shortened in the table below.

Table 1: Sample details of business executives

Executives	Age Range	Education Background	Company Name	Working Experience	Type of Business	Interview Time
E1-E3	51-60	Master´s Degree	TCS	29 years	Business Strategist	35 min
E4-E6	41-50	Bachelor´s Degree	TCS	18 years	Supply-Chain Strategist	55 min
E7-10	41-50	Master´s Degree	Mahindra	19 years	Business Planning	40 min
E11-14	31-40	Master´s Degree	Mahindra	11 years	Product Development Strategist	44 min
E15-E18	41-50	Master´s Degree	Tata Sons	17 years	Business Development	50 min
E19-E23	51-60	Bachelor´s Degree	TCP	13 years	Management and Leadership	48 min
E24-E28	41-50	Doctorate Degree	TCS	20 years	Management and Leadership	45 min

E29-E 31	51-60	Master´s Degree	TCS	24 years	Management and Leadership	43 min
E31-E33	31-40	Master´s Degree	TCS	16 years	Management and Leadership	39 min
E34-E35	51-60	Doctorate Degree	TCP	22 years	Management and Leadership	52 min

The qualitative data for the present study was consolidated using thematic analysis. The themes that were taken from the research questions were analyzed properly. The interviews were transcribed into Microsoft word files. During the study, these themes emerge on the post-pandemic actions necessary to maintain universal supply-chains, and how establishments' tactics assist in overcoming supply-chain disruptions.

Theme 1: Business Strategy

Theme 2: Core Values and Competences

Theme 3: Competitor´s Performance

Theme 4: Measurement Analysis

Theme 5: Effective Leadership

The study introductory questions were based on demographic information, age categories, educational background and the role each participant played in the organization. Below are the distribution graphs that represent the percentages of the research participants.

4.2 The demographic information

The qualitative case studies on top executive's actions required after the pandemic to keep comprehensive supply networks and how their companies' plans help them deal with supply chain disruptions, started by a narrative background about themselves, age, education background, and working experience. Below is the graphical presentation of the demographic of the interviewee participants,

4.2.1 Age distribution of participants

The age distribution of the interviewee participants ranged 30-60 years.

Figure 1 below illustrates the age distribution.

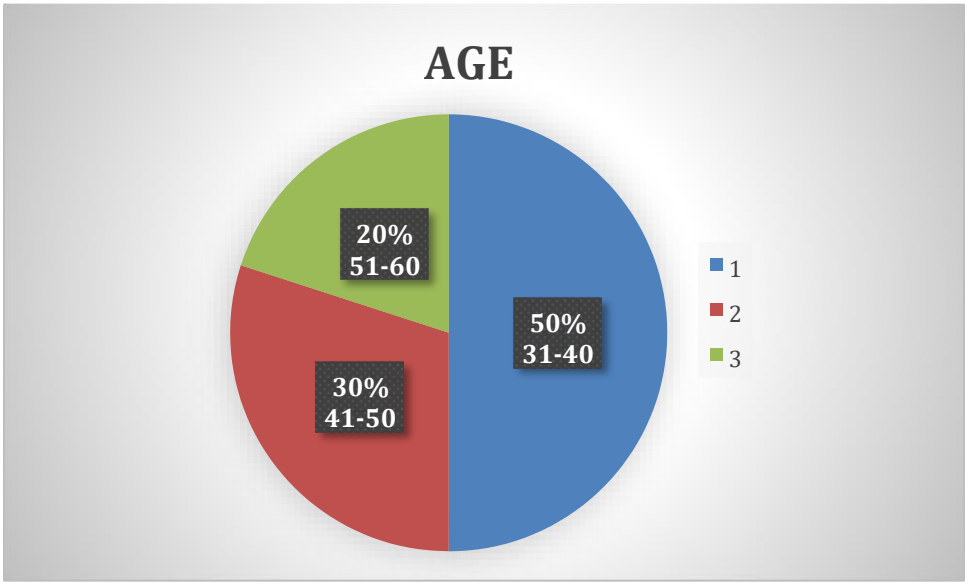


Figure 1 Age of the interviewed participants

Mostly of the Top Executives participants in figure 1 were aged between 31 to 40 years old, representing 50% of the sample. The age group of 41 to 50 years old, is represented with 30% of the sample and age group between 51-60 represented the 20% of the age group

in the automotive Tata and Mahindra group. Those in the 20% were old and experienced but were lower in comparison to the other age group.

4.2.2 Education background of participants

Figure 2 represents the distribution of level of education from the executives that were interviewed, for the purpose of this study on supply chain disruptions in Indian automotive industry.

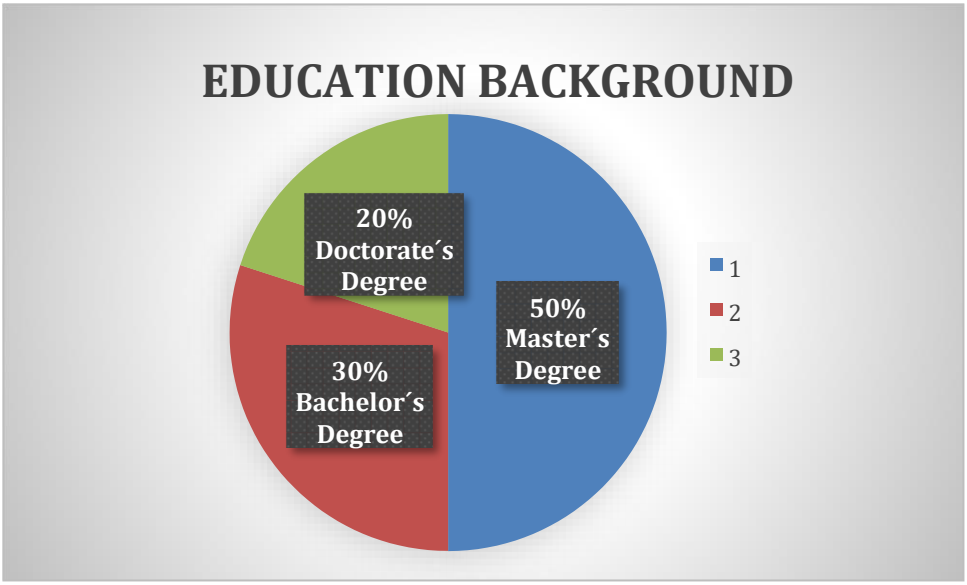


Figure 2 Education Background of the interviewed participants Overall, 50% of the persons have a master´s degree, and the rest of them have either doctorate degree or bachelor´s degree. 20% of the executives have a doctorate degree which most indicated obtained after long service in the industry. Furthermore, 30% of the executives have completed a bachelor's degree with long-term working experience. Appendix D shows that most of the persons have over 10 years of experience holding strategic positions in their organizations.

4.2.3 Job category

Figure 3 shows the distribution of interviewed persons by type of business.

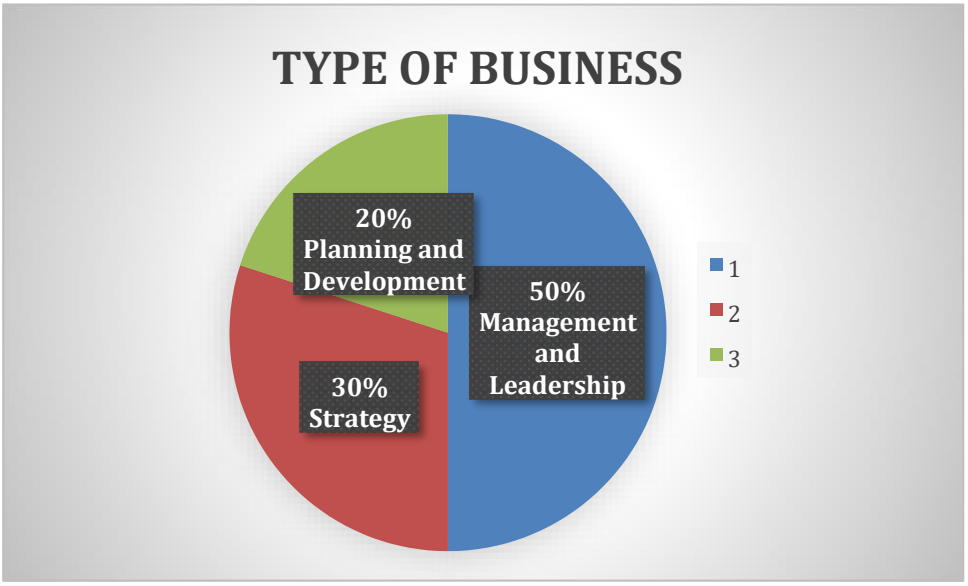


Figure 3: Type of Business involved by the interviewed participants. The majority (50%) of the interviewees are top executives in management and leadership positions in the organizations as shown in figure 3. In the Tata and Mahindra group, 30% of the people interview were working in the strategic department of the industry. The rest 20% are in planning and development, and strategy. Each of these categories holds a critical decision-making assignment in the automotive industry.

4.3 Results

4.3.1 Research question one

Which post-pandemic activities are required to sustain comprehensive supply chains? and how will your companies' plans help them overcome supply-chain disruptions? The first theme on business strategy covered from the data answers revealed that supply chains were deeply tested during the pandemic times, causing delay of goods due to multiple approvals

needed to move goods, closing of domestic and international borders, quarantine conditions, human resource issues and inflation. The consumer companies in the Tata Group as E1 and E30 participant stated that: *"the physical interface with customers was difficult as their retail stores were either closed or the customers were reluctant to physically visit the stores".*

Therefore, the best way to communicate their product offering with the end consumer was digitally. This means of communication, although was good, it had many delays that prompted management to offer more after-sale services to customers to motivate them to buy digitally.

E8 participant stated that: "Our consumer facing application TATA NEU was improvised to digitally receive orders through an app and deliver at home of customers".

Even the suppliers were broad based on different geographies, so that the movement of material for long distances was minimized. The operations strategy for packing centers in each region of the country was promoted, warehouses were also decentralized. The customer could clearly see the products on-line and order it from the convenience of their homes, and if some level of personalization was needed, then a video call was also arranged.

(e.g., in the case of the sale of jewellery or watches).

E2 participant stated, "this is one way of overcoming the disruptions".

These measures continued after the pandemic, and now a hybrid model is emerging where customers can browse online or visit the store and they have the option to take the delivery from the store or at their homes. Therefore, digital transformation is a key level in overcoming supply chain disruptions.

E4 and E18 participants from Mahindra said "resilience supply-chains are actions aligned to prepare plan A or plan B and keeping moving to options in the supply-chain. It is about cost

vs. the strategy of getting the raw material needed to keep the normal operations, especially in tier 3 and tier 4 of the supply-chain".

Resilience supply-chain involve critical skills from the team, for example in Electric Vehicles (EV) manufacturing, then in some cases involves the creation of new skills to be incorporated, and critical decisions with the tiers of the supply-chain in long term agreements, that can be relevant for decision-making processes for cost efficiency.

E3 participant from Mahindra stated that:

"We bring in our technology expertise to find supply-chain inefficiencies".

It is critical the supply-chain collaboration, network optimization, along with the supply risk management (not supplier risk"). If the organization is able to help the enterprises with the data driven decisions to identify supply-chain network inefficiencies and optimize the supply-chain network, then it´s a way to overcome supply-chain disruptions and maintain holistic supply-chains.

4.3.2 Research question two.

What are your actual and future core values and competencies?

The second theme of future core values and competencies has revealed that these are knowledge and skills of the associates around technology, business domain as well as deep contextual knowledge of the customer satisfaction. If the team is engaged to be part of the transformation, and new philosophy adaptation in where the quality and productivity is a relation that needed to be a true relationship, because if this marriage is followed, then the result will be on a context of business excellence. Good results will improve the morale of the people, by having a happier staff on the job, because the company will be centered on a good employee's environment, with clear values for the organization.

Ivanov, (2018) stated, “if the firms does not understand how important it is to communicate effectively, with a good attitude of collaboration and commitment, then will be difficult to reach the capabilities needed for the firms to pursue operational excellence to improve their financial performance”.

The E6 participant from Mahindra indicated that “critical skills are involved, in order to sustain a resilience supply-chain, and the organizations must be aware in how to identify and create new skills from the team needed, for example in Electric Vehicles (EV).” Tata Motors, which lost out in the internal combustion engine car market, has pounced on the EV opportunity ahead of competition, emerging as one of the largest players in electric car in India. The MD of Tata Motors Passenger Vehicles and Tata Passenger Electric Mobility stated, *“we are focusing on a three-phased architecture approach for EV´s and plan to launch 10 EV´s in 5 years”.*

Their strategy of three phases is first, generation 1 products to be launched and instill confidence in customers. Then with concept car model CURVV, will be introduced the first product under generation 2 EV architecture. Finally, they will unveil the AVINYA concept, a pure electric vehicle, based on generation 3 EV architecture. *“Where business models were proven, scale was the next logical part”,* said Mr. Chandra from Tata Motors.

E7 and E35 participants from Tata Companies, are very clear in what the company vales are, and how to underpinning the way of doing business in their respective organizations.

“Tata company values are clear, and customers can easily relate to”.

Each company has main values that some of them are just adapted to the core activity of the company, but mostly are defined in 5 principles that the group chairman of Tata has compiled for all the large number of employees working for the group all over the world, as a

sort of DNA that everyone has adopted and respected for generations within the organization. These principles are displayed on the walls of the company for ethical supremacy against other institutions and they follow the mantra according to all the interviewees. They are as follows:

Integrity: everyone is called to be fair, honest, transparent, and ethical in their conduct; everything they do must stand the test of public scrutiny.

Responsibility: everyone will integrate environmental and social principles in their businesses, ensuring that what comes from the people goes back to the people many times over.

Excellence: everyone must be passionate about achieving the highest standards of quality, always promoting meritocracy.

Pioneering: everyone will be bold and agile, courageously taking challenges, using deep customer insights to develop innovative solutions.

Unity: The organization will invest in their people and partners, enable continuous learning, and build caring and collaborative relationships based on trust and mutual respect. Hence research participant E7 added that "as a supply-chain our vision is product supply organization for better, and the key pillars for us to drive our vision and strategy are:"

-Customer Focus

-Develop Capability

-Optimize Cash, Cost and Quality

-Health & Safety and Sustainability

-Digital Transformation

In the case of E1 and E2 participants, "connect core values to sustainability as it allows for better growth and development".

Their perspectives in terms of future core values and competencies are to consider connecting customer strategy, business model innovation, and the paradigm shift of customer tastes including personalization, customer´s awareness of Environmental Social and Governance (ESG) strategies, Diversity, Equality, and Inclusiveness (DEI), and the Sustainable Development Goals (SDGs), with the alignment of the enterprise strategy with the product portfolio, in the faster time to serve the markets.

4.3.3 Research question three

How can you know that your customers are well?

On the question of customers and competitors' performance, the study finding indicate that Tata group is pivoting towards a host of new emerging opportunities, like to be in aircraft manufacturing & defense, electronics, Super Apps, innovation technologies such as payments, battery manufacturing and storage solutions,5G technology and infrastructure, or hyperloop technology, among others.

The top executive of the group stated that E5, E9, E15 stated that:

"The company strategy is to see what impacts they can make in the society, especially in the Indian Market, in where a lot of things can be done on scale. Our management wants to invest in self-sustainable businesses, not in cash-guzzling".

During the interview, it was discovered that the of the company over the next five years is to invest in $90 billion USD, mostly within India, so they can build businesses around these opportunities. In this sense it is mandatory to engage with last-mile customers and pursue new business themes.

During this post-pandemic stage, the firm has passed through a process of clean-up, that involved existing or merging unprofitable businesses, paying off debts and seeding new areas with potential for future growth. One important data as per financial times India 2023, group revenues grew 48.34% during the clean-up process over the last five years, despite Covid-19 and geopolitical tensions.

Market capitalization jumped 180% in March 2022, compared with March 2017. According to data sourced by Tata Group, return on equity (ROE) improved to 21.4% from 11.4%. This was confirmed by the top executive members of the group during the interview. Most of the research participants from the firm TCS agreed that knowing if the customers are well has been a challenge during the pandemic and caused many companies not to know what consumers need and what the company have. Hence, they stated that the stage was propelled through the technology as the main driver. Leverage technology, especially digital media to be closer to the customer and connected customer strategy leveraging IoT (Internet of Things) and other technologies might be a great support.

According to E8 and E21 participants indicated that:

"The customer centricity is a part of their strategy, high level of personalization is extended to loyal customers, e.g., video call from salespeople to wish customers on birthday or anniversary and respond to their requests to digitally browse through product catalogue".

The customer segmentation approach helps identify the buying pattern of customers and the products they want. This enables intimating them when the product is available. The online grocery mart- bigbasket.com (largest online grocery store of India), saves the items repeatedly ordered or selected by customer and helps a customer place online orders quickly for these items in their wish list, thus saving time. From this point of view, it is also possible to presume

that customers are doing well from their patterns of repeated orders, enquiries for new products, prompt payments and positive feedback.

Research participant E11 believes that it is possible to know when the customers are well by having almost daily interactions in a virtual mode using collaboration tools.

Furthermore, by working with the customers in an agile mode where the customer is a key stakeholder not only to provide requirements but to provide immediate feedback on the minimum viable product and service delivered on an iterative manner to the customer. Finally, all the study participants agreed that it is important to have thorough formal feedback gathering mechanisms on an annual or semiannual basis.

4.3.4 Research question four

What perspective should competitor's performance be in 1 year and 5 years?

The competitor’s performance will endeavor to match the current product offering, thus compelling the company to innovate continuously. The results of innovation may be visible in the medium term, say three years, and will shape the competitive landscape of the market in the long term.

The study respondents E8 and E10, from TCP, shared that they have an annual plan that includes analysis of competitor products and thus addressing ways to garner higher market share. High quality products with values of trust imbibed by TCP brands will enable customers to move from unorganized markets to organized markets where branded products will be preferred over unbranded products.

In the post-pandemic era, it´s a very competitive environment, and future performance outcomes will be through digital interventions, cost rationalization, people engagements,

technology, and process improvements. Everyone will be focused on this, and speed and agility will give a competitive edge. The level playing field, understanding opportunities, and identifying critical needs and discerning what adds value to the customers, might be the key differentiator. Competition who cannot pivot based on the ever-changing ecosystem, will have to perish.

E1, E2, E3, E4 and E9 participants from TCS are confidents that they are unique in terms of their ability to respond to changing market dynamics and having most of their business as repeat business.

The company invests heavily in upskilling their people. Having core values in terms of respecting people and do not believe in mass lay/offs which is almost the norm today.

E9 stated that "with the above considerations,

I think we will be growing and outperform our closes competitor in the next 5 years or even before that".

The study hypothesizes how supply chain management differentiates organizational performance in global disruptions. In order to have data for decision-making, there are several options that can be used as managerial tools for the Top Executives.

One useful tool is the Herfindahl Index, that is a common measure of market concentration of an industry, and the size of firms in relation to the industry in where the companies are in and is used to determine market competitiveness (Johan and Vania 2022). It is calculated by squaring the market share of each competing firm in the related industry, and then summing the resulting numbers, where the market shares are expressed as fractions or points.

The result is proportional to the average market share, weighted by market share. A low degree of concentration means that the industry is closer to a perfect competition scenario, where many firms or more or less equal sizes share the market. Increases in the Herfindahl index generally indicate a decrease in competition and an increase in market power, whereases decreases indicate the opposite. As another way to evaluate and assess markets and competitor´s performance,

Isabelle et al., (2020) incites researchers to use another tool which is the in-depth analyses and monitoring of forces can be particularly important in a post-COVID-19 world due to greater social and economic uncertainties and with the expectation of accelerated adoption of technological innovations by several key industries to help ensure survival and prosperity. Michael Porter's five forces and beyond can be used to improve decision-making processes so they are more effective in their respective business environments.

Porter´s (1979) Five Forces is a model that identifies and analyzes five competitive forces that shape every industry and helps determine and industry´s weaknesses and strengths. Five Forces analysis is frequently used to identify and industry´s structure to determine corporate strategy. Porter´s model can be applied to any segment of the economy to understand the level of competition within their industry and enhance a company´s long term profitability.

4.3.5 Research question five

Which companies do you benchmark and why?

The theme number four of measurement analysis, according to Agrawal and Gupta (2020), the lockdown in India had a significant impact on supply networks, the movement of raw materials, and industrial activities. For some businesses, this resulted in a halt to

operations or even a closure as a result of these effects. It is impossible to successfully manage an operation if you cannot measure it and monitor it (Zuñiga, 2020). In the last two years, the world has gone through something we have never seen or imagined. Now, we're also facing a geopolitical crisis and recession fears. Key trends that emerge from the situation and the creation of strong supply chains, faster digital adoption, and access, growing focus on sustainability and energy transition, and importance to health, wellness and safety. India has a huge potential to become the global supply chain hub.

Tata Group as a company leader has decided to benchmark with themselves, as market and global leaders in respective industries. In the case of their IT structures, they benchmark with the Big 4 firms, such as Infosys, Wipro and HCL, along with TCS, which is part of their conglomerate.

E13 and E16 participants have stated that.

"TCP benchmark with established Fast -moving consumer goods (FMCG) companies and supply chains, and top companies in the relevant segments, like plantations and instant coffee, in the case of the Tata Coffee".

In the case of Mahindra, E5 and E6 participants said that they benchmark with Indian automotive company leaders, and with global companies in the same industry.

E1 participant mentioned *"my benchmarking is the customer survey with the top 80% revenue customers.* I have to strive more than 100%. It is no more customer satisfaction. It is a pre-requisite. The benchmark now is customer delight which is more than 100%."

4.3.6 Research question six

How do you know that your measurement is efficient and effective?

Measurement has to be system driven, with a single line of truth and visibility across the organization. As long as the measurement process is current, based on Enterprise Resource Planning (ERP) systems configurations from a single base data generation, its efficient and effective as per the E1, E2, E3, E4 and E9 participants, all from the firm TCS.

The ERP is basically a type of software that organizations use to manage day-today business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations. AlMuhayfith and Shaiti (2020), stated that ERP systems enhance SME´s performance, and its usage has positive impact in financial and nonfinancial performance in the firms.

E7 participant defined this part as follows,

"We deploy the best technological and management tools to have an efficient system of measurement".

At Tata Group, the business excellence team have developed a range of assessments to be done for a TATA company, that analyses the management processes deeply." "Tata Business Excellence Group (TBExG) is the key driver of the business excellence movement at the Tata Group. It is entrusted with the mandate to set standards of excellence and partner with group companies to help them achieve their business excellence capability building programmes and customized workshops.

TBExG builds capabilities for business excellence in Tata companies. The organization also runs the Best Practices initiatives, called EDGE, defined as best practices which facilitates the exchange and implementation of good and prevalent practices within the Tata Group of companies."

As an interesting insight, E1 participant from TCS mentioned “customer delight is the metric and Revenue is an old metric.

The new metric is value added. If customers feel we have added significant value to their supply chain, the revenue is an automatic outcome. We engage in a partnership model than a traditional supplier model. Partnership is supplier + trust + adding value + exchanging information. In this context, efficiency is the bottom line.”

The participants E5 and E6 from Mahindra believed in their strong delivery assurance group that defines and track their performance. The metrics are defined based on global standards and adhere to the automotive industry standards defined by industry bodies.

4.3.7 Research question seven

How do you improve and assess your acceptance as an organization to society? The fifth theme covered on effective leadership, has been extensively demonstrated with the example of the Chairman, Mr. Natarajan Chandrasekaran, in the follow-up strategy seeing in the Tata Group of companies, in the report given by Fortune India. The first was strengthening the core, which ensured every company is financially fit. *“I always say, fitness first, and performance next”,* Balance sheets were fixed and set the growth strategy of all the companies.

Secondly, Tata Group is focus on the transition of existing companies with the help of digital technologies. This transition will be strengthened with the idea of sustainability and wellness and safety. And the third is the creation of great businesses for the future. Tata Group has created firms for precision electronics manufacturing, 5G technology stack and digital Super App. Same time they are building a world-class airline, and an EV battery manufacturing plant, considered as the businesses of the future.

Every Tata Company have their corporate social responsibility clearly defined with key pillars of their social initiatives, there is a central advisory, support and thought leadership group called Tata Sustainability Group.

The Tata Sustainability Group (TSG) serves as the nodal resource on sustainability for Tata Group of companies. TSG is driven by a mission to guide, support and provide thought leadership to all the Tata Group companies in embedding sustainability in their businesses strategies and demonstrating responsibility towards society and the environment. TSG assists this process by developing, sourcing and making available guidance documents, tools and frameworks on all the areas that it works on environmental, social and governance (ESG), building and maintaining repositories of global goods practices from within the Tata Group and outside, tracking the latest sustainability trends and emerging regulations across the globe.

A Key aspect of Tata Group knowledge services is designing and facilitating capability building workshops on critical as well as emerging themes for sustainability champions across Tata Companies. They do this by developing training modules, identifying, accessing and making available relevant material and opportunities provided by global leaders, enabling interactions with global sustainability experts through open workshops, talks and webinars. Workshops not only enable learning and immersion into operational aspects of sustainability, but also allow exchange of good practices among Tata companies. Tata Sustainability Group also represents the Tata Group of international sustainability platforms. Currently, through the membership of the World Business Council for Sustainability and the Energy Transitions Commission, in where they are actively contributing to the shaping of the global sustainability agenda.

All Tata Group interviewees agreed that the acceptance as an organization to society must be improved and assessed in the following way:

By having sustainability as a core value of the organization and making sure to add value to the larger society and community as they provide their services. By participating in inter group competitions to measure innovativeness.

Having a holistic business excellence program is built as part of their business strategy. Respondent E5 and E19 stated from Mahindra that, social responsibility is the key to success, along with a clearly defined Environmental Social and Governance Strategy, touching the SDG´s driven goals aligning with the financial objectives of stake holders.

Now, ethical business decisions formed and adding value with business model innovations to improve revenues.

4.3.8 Research question eight

Are you able to demonstrate how your business partners and employees are related to your organization's strategy?

E7 Participant is confident of taking along their business partners and employees in a journey to achieve organization´s strategy.

He said, “our code of conduct, that binds all Tata employees to ethical conduct extends to our business partners too”.

TCS participants argued that in several of their compliances, they ensure that similar standards are replicated by their partners. *“We have internal audits and assessment systems as explained earlier under the TBExG model. In addition to its core functions, TBExG supports the Tata Affirmative Action Programme (TAAP) Assessments and the Tata*

Education Excellence Programme (TEEP) which helps improve excellence in education". Tata Group run an inhouse training center (TMTC) equipped to provide management programs to enable leadership and capacity development of their employees.

The ESG´s reporting is now a regulatory requirement in India with a vision to achieve net zero emissions by 2070 and addressing climate change. Indian Government legislature has implemented many policies to adopt a more sustainable way of business and promote a Circular Economy, one of them being Environmental, Social and Governance Reporting, where companies are encouraged to look for alternative methods to the traditional finance centric model. Tata Companies have begun to report on ESG in their annual reports.

The first stipulation regarding ESG´s Reporting was introduced in the Companies Act, 2013. According to section 134(3). Companies are required to include the report compiled by the Board of Directors, regarding the conservation of energy accompanying the annual financial statement, which is further described in Rule 8(3) (A) of the Companies (Accounts) Rules, 2014.

Along with this, Regulation 34(4) of Security and Exchange Board of India (SEBI) Listing Obligation and Disclosure Requirements, Regulation 2015 (LODR Regulations), also provides for companies to include disclosure of opportunities, risks, concerns, and threats as a part of their annual report, which was further amended under Regulation 34(2)(f) which introduce the Business Responsibility and Sustainability Report (BRSR) framework in 2021. This new guideline replaces the previous BRR (Business Responsibility Report), making it mandatory for the top 1000 listed companies to annually report ESG related information from the financial year 2022-2023.

E7 participant, stated that:

"The people we work with are the biggest assets and we have been awarded several times as the best employer in several countries. Our location independent working strategy, flexible working hours and the ability to move people from one part of the organization to another to fulfil not just customer requirement but the individual aspirations of the employees make sure that employees are related to the organization's strategy and core values. We have formed long-lasting and robust partnerships to deliver complementary capabilities with the largest service and product providers as well as niche ones. We often have 360-degree partnerships with them meaning we also have them as our customers, partners as well as suppliers".

4.3.9 Hypothesizes

The study hypothesizes how the supply chain management differentiates organizational performance in global disruptions and highlighted the importance of critiquing and updating research frameworks and applying them to industrial sectors that are vital to many countries, such as India. There are numerous supply chain management ideas, but the research focuses on two of them. To the traditional emphasis on economic factors, one is sustainable supply chain environmental and social concerns, similar to ESG's previously discussed widely by Tata Group (Allen et al., 2021). Sustainable supply chain management (SSCM) aims to contrast with traditional supply chain management (SCM) and draws emphasis to differences between the two. It also incorporates long-term reasoning into SSCM by integrating the product lifecycle.

The other theory is Circular Economy (CE), which was developed to examine the long-term viability of organizations and their supply networks (Geissdoerfer et al., 2017). Rather than handling circular economy processes, CE writing streams have concentrated on defining linear economy issues. These processes have been studied under different circumstances such as industry-level, supply-chain level, organizational level, or product level (Allen, et al., 2021), and mentioned as part of how Mahindra Automotives and Tata Group of companies

are very keen to think in the society, and how can they create business that make impact, especially in India.

Recently, academics have also suggested the CE globalization stage (Geng et al., 2019). Consequently, having superb theories and models for making strategic business decisions can assist companies and decision-makers in increasing decision clarity and reducing disputes and uncertainty in business performance (Annan, 2021).

The Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. It contributes significantly to the economic and social development of the country by fostering entrepreneurship and generating the largest employment opportunities at comparatively lower capital cost.

As an additional way to triangulate the five themes this study used as consolidated thematic analysis, and mentioned before, these themes such as how your organizations' plans will help in overcoming supply-chain disturbances and the post-pandemic actions required to keep holistic supply networks are emerging.

Theme 1: Business Strategy

Theme 2: Core Values and Competences

Theme 3: Competitor´s Performance

Theme 4: Measurement Analysis

Theme 5: Effective Leadership

The study developed a supplementary survey based on the Deming Cycle that includes a quality development model that encompasses the four categories of Plan, Do, Check, and Act in accordance with these five topics. (PDCA). This criterion focuses on 14 points to

achieve total quality management, including driving out fear, breaking down silos, adopting a new philosophy, ceasing to rely on inspection to achieve quality, working with a single supplier to reduce costs, creating a purpose for improvement, adopting the new philosophy, removing annual ratings, self-improvement programs, and involving all employees in the transformation.

The results of this survey, given to almost 70 top executives, scholars, and decisionmakers, with experience in their respective diversity of industries such as automobile, consumer products, and technology industry, as they are always searching for ways to reduce supply-chain disruptions in their organizations and boost national economic development.

The Deming criteria, on which the survey is founded, places a strong emphasis on quality development. As in the present, every gap identified as a threat or competitive advantage to be used, can result in positive or negative numbers that can add or take value from the companies, shareholders, and stakeholders, when the organizations, logically understand the impacts that can be present in the supply chain managements, and clearly see how the company can mitigate such disruptions, it might be the difference between progress or failure.

4.4 Summary of Findings using Survey for qualitative development.

According to Denzin (2012), the multiple approach triangulation technique encourages a variety of data collection approaches. The study used both interviews and surveys in this qualitative case study on supply chain disruption in the automotive industry in India. To carry out the survey, the researcher requested the interviewees to submit their consent to participate, in which we received 98.5% of positive response. This is an indication that all the participants

were keen on given to their best of their knowledge key information in the Tata automotive industry. The remaining 1.5% were either not sure or did not want to participate in the research study. Figure 4 below represents consent of the study participants.

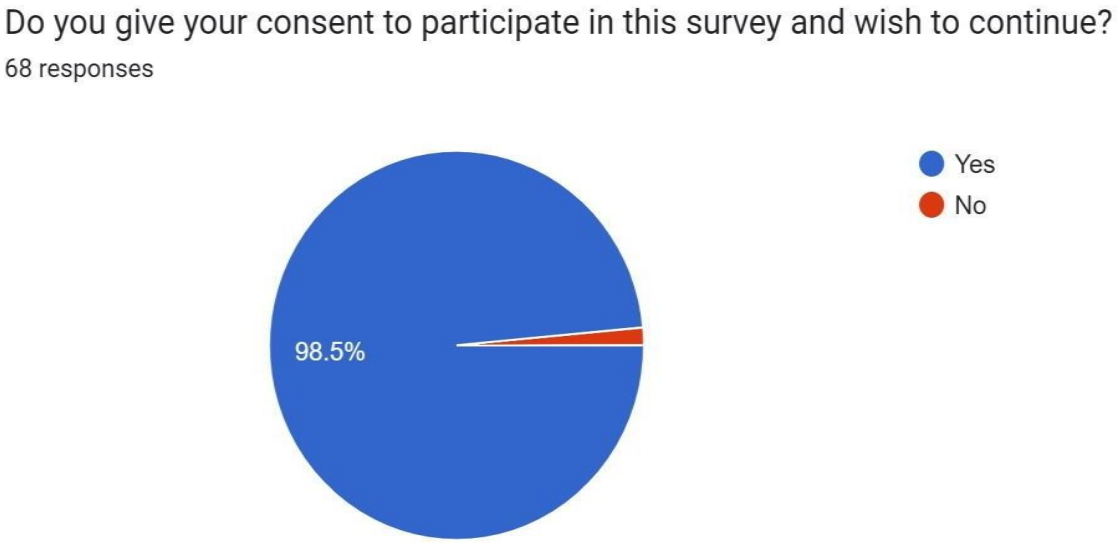


Figure 4 Consent to participate in the Survey.

4.4.1 Survey Question #1

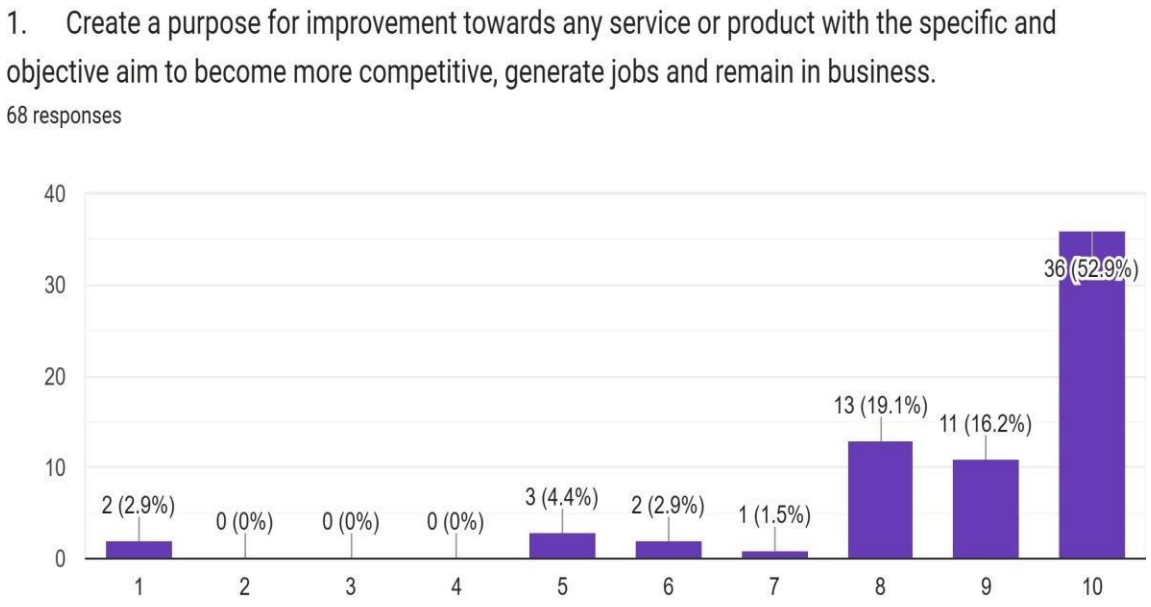


Figure 5 Survey Question 1

According to the survey in figure 5, almost 53% of the interviewed believe that create a purpose for improvement towards any service or product with the specific and objective aim to become more competitive, generate jobs and remain in business. Other respondents also have mixed feeling about whether it really create improvement for the business as indicated on the survey graph above.

4.4.2 Survey Question #2

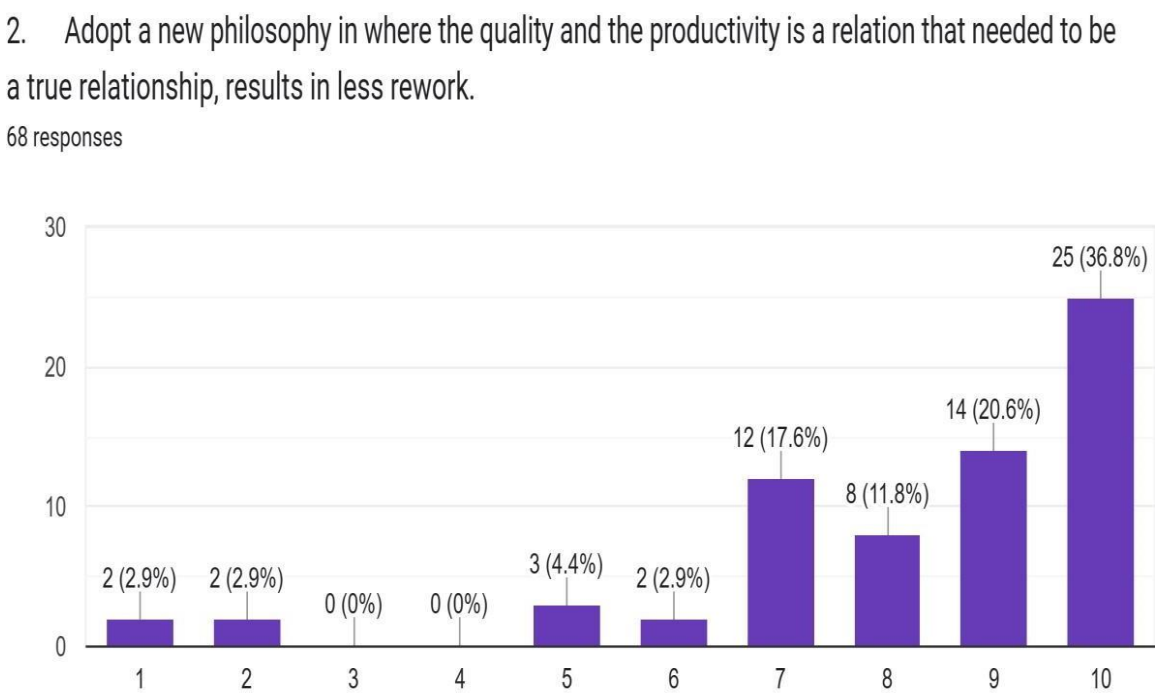


Figure 6 Survey Question 2

The majority of the participants interviewed in figure 6 above think that adopt a new philosophy where the quality and the productivity is a relation that needed to be a true relationship, results in less rework. Most think that although it is good, it was not the most important characteristic that brings true relation with the supply and customers as indicated in the chart. 25 people representing 36.8% agreed to it and 3 people representing 2.9% completely disagree with the assertion on performance.

4.4.3 Survey Question #3

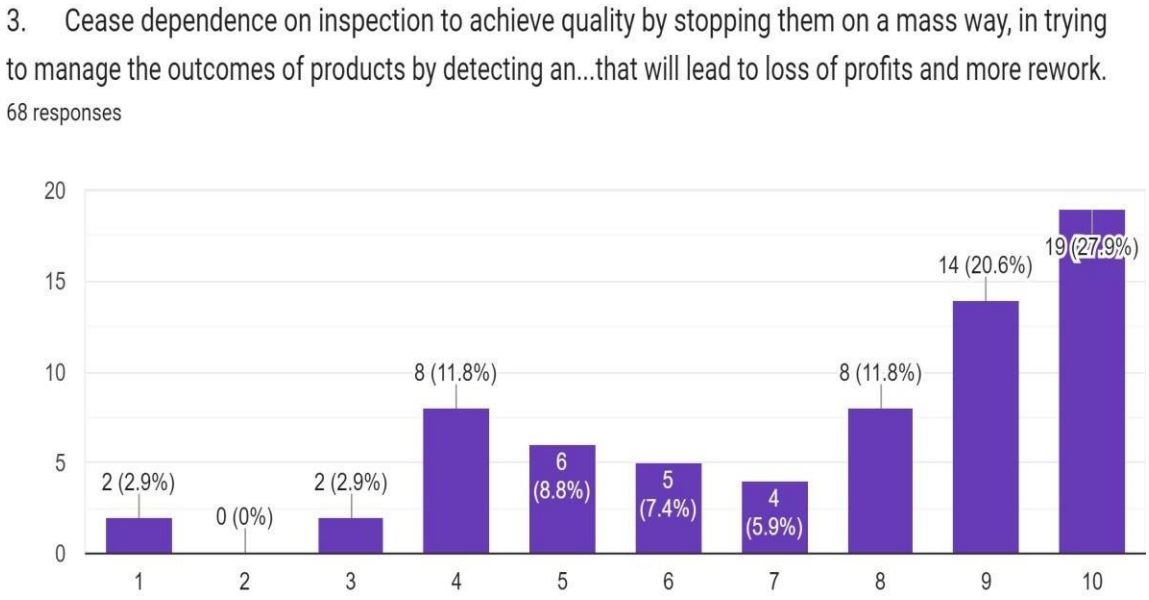


Figure 7 Survey Question 3

Figure 7 from the study emphasized on dependency on inspection. Almost 82% of the interviewed believe that cease dependence on inspection to achieve quality by stopping on a mass way, in trying to manage the outcomes or products by detecting any defects, that will lead to loss of profits and more rework.

4.4.4 Survey Question #4

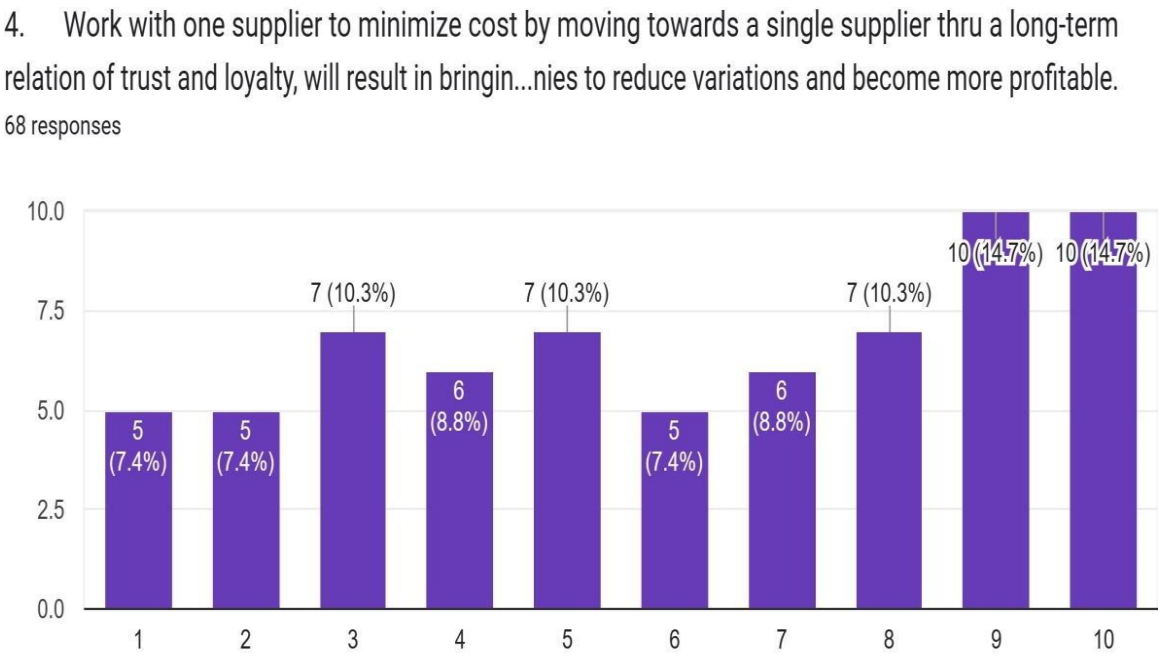


Figure 8 Survey Question 4

Majority of 66% of the interviewed think that work with one supplier to minimize cost by moving towards a single supplier through a long-term of trust and loyalty, will result in bringing innovation, on a win-win cooperation basis, that will help companies to reduce variations on become more profitable. However, others believe that the company should have a back-up in case there is a failure in the supply chain so that production and continuity can be established to eliminate mass loss of profit.

4.4.5 Survey Question #5

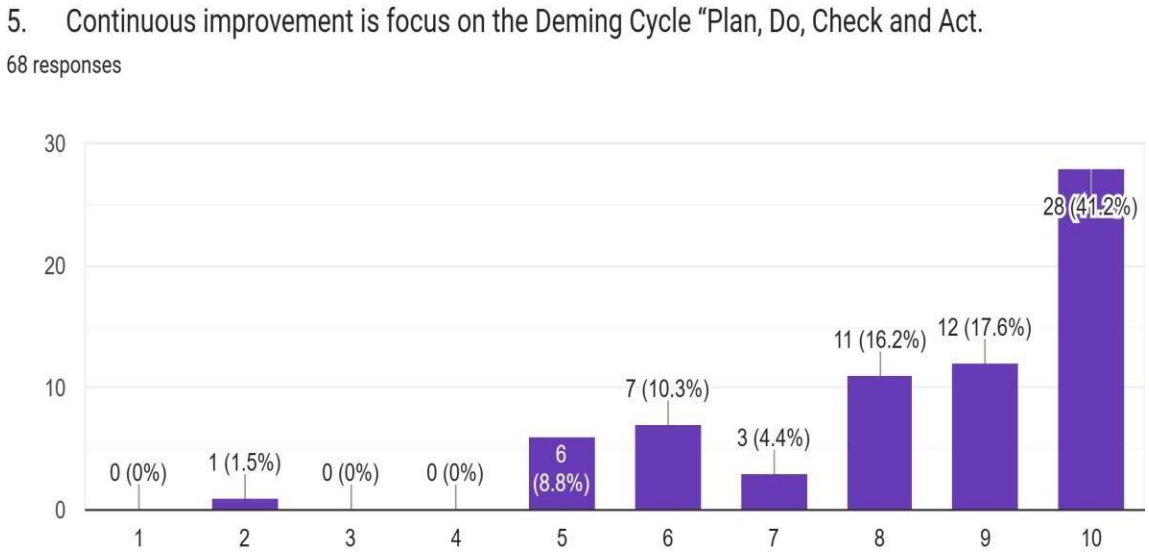


Figure 9 Survey Question 5

A combined of 99% of the interviewed participants suggest that Continuous improvement is important by focusing on the Deming Cycle "Plan, Do, Check and Act. The survey suggest that any time managerial decisions are focused on proper planning, the company can derive maximum efficiency and enjoy economic of scale.

4.4.6 Survey Question #6

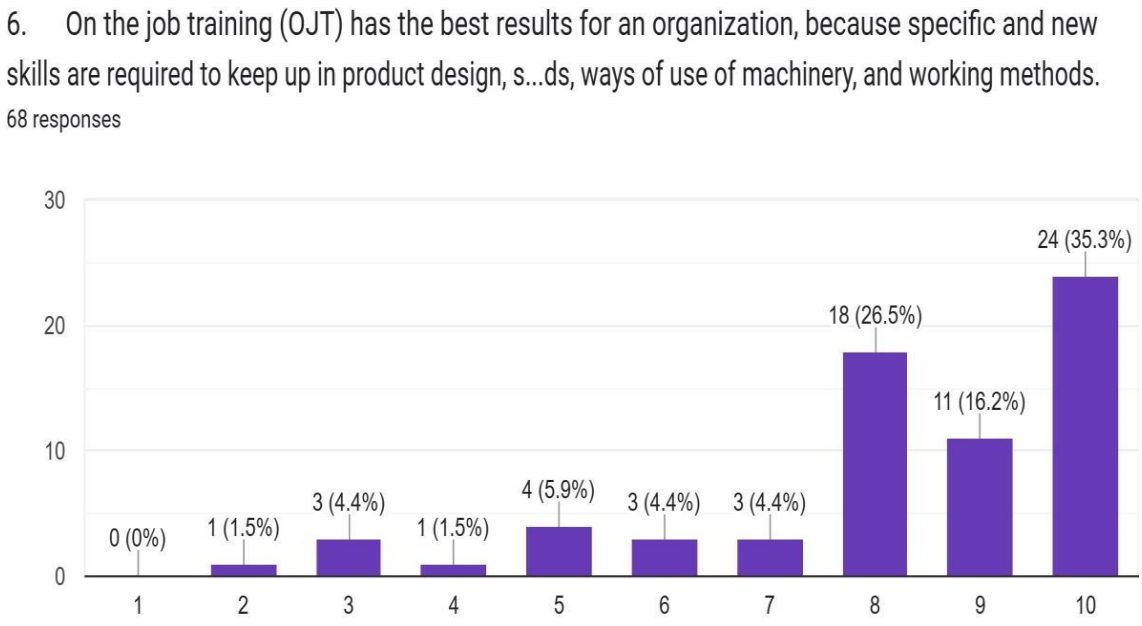


Figure 10 Survey Question 6

The survey questioned asked on the job training indicates in figure 10 that a large percentage of 93% of the best results for an organization, according to those questioned, come from on the-job training (OJT), which is necessary to keep up with changes in product design, unique techniques, client requirements, ways to operate equipment, and working procedures.

4.4.7 Survey Question #7

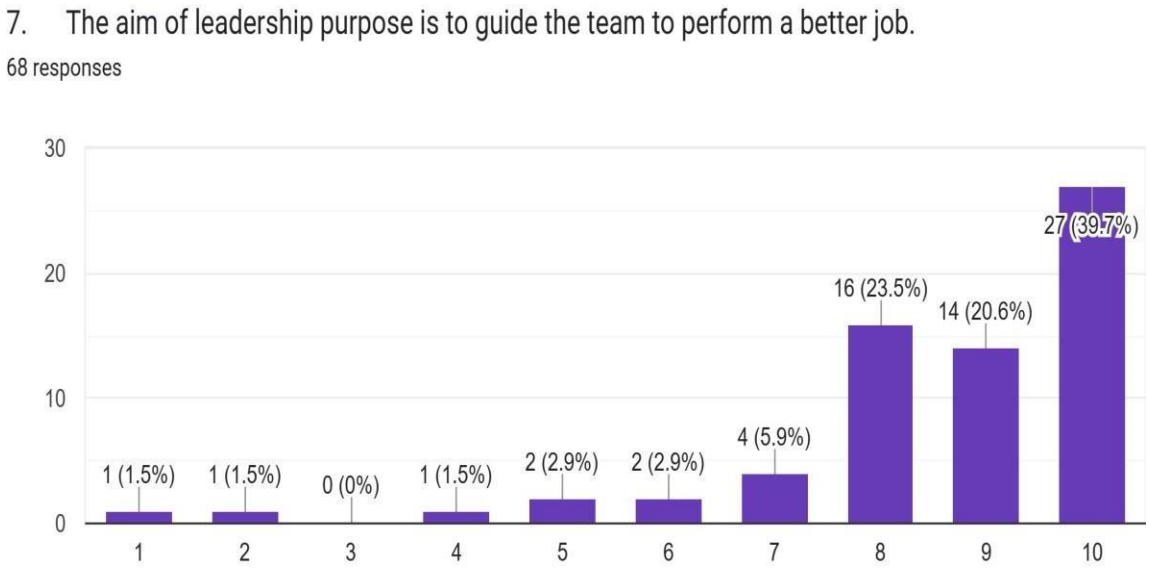


Figure 11 Survey Question 7

From the figure above, the study portrays that almost 96% of the interviewed believe that the objective of leadership intent is to guide the team to perform a better job. The remaining percentage partially disagree with the assertion and think that management should have other option apart from guiding that can motivate them to deliver better performance.

4.4.8 Survey Question #8

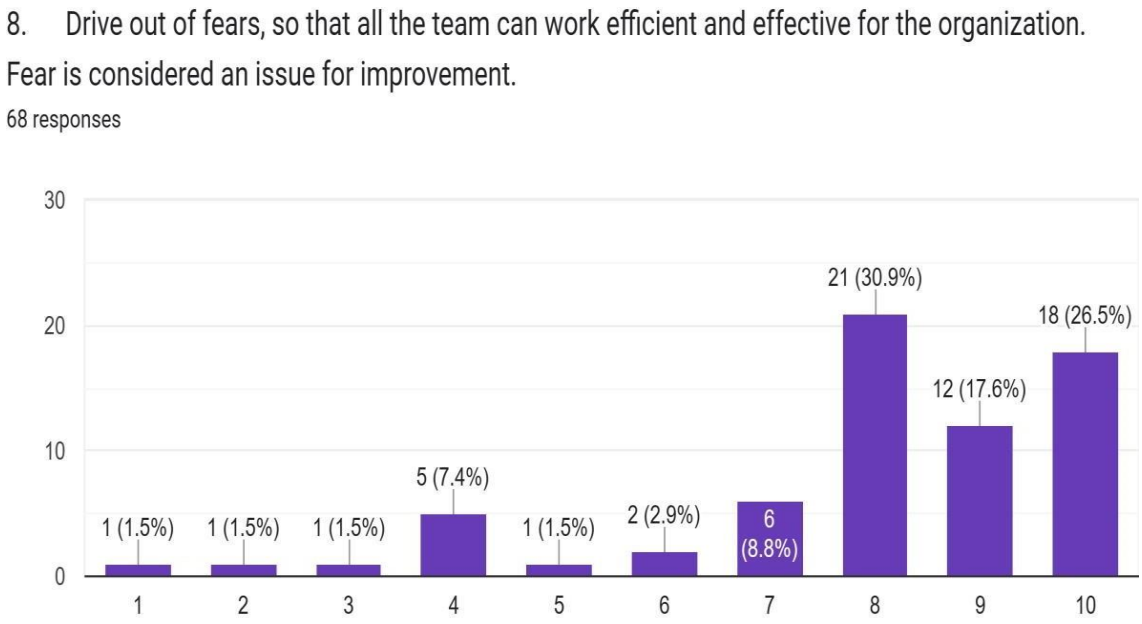


Figure 12 Survey Question 8

Almost 88% of the interviewed consider that drive out of fears, so that all the team can work efficiently and effectively for the organization. Fear is considered an issue for improvement. It is important that management implement a system that allows employees to feel free to express their opinion and be involved in the decision-making process.

4.4.9 Survey Question #9

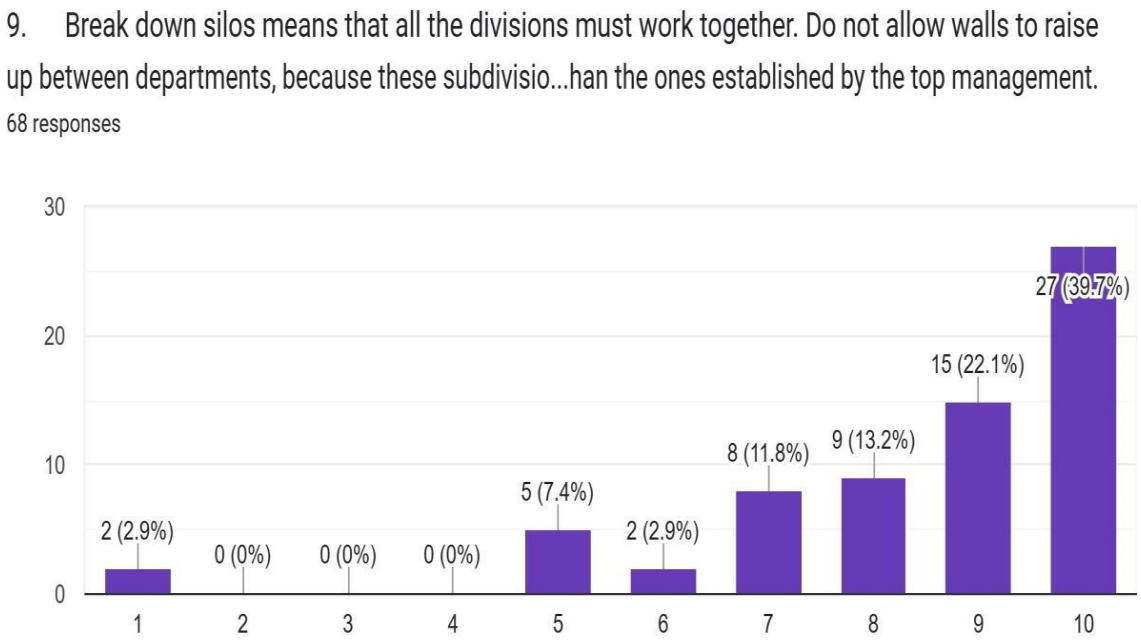


Figure 13 Survey Question 9

Figure 13 above shows that almost 97% of the interviewed consider breaking down silos means that all the divisions must work together. Do not allow walls to rise up between departments, because these subdivisions will end in different views and strategies that might be different than the ones established by the top management.

4.4.10 Survey Question #10

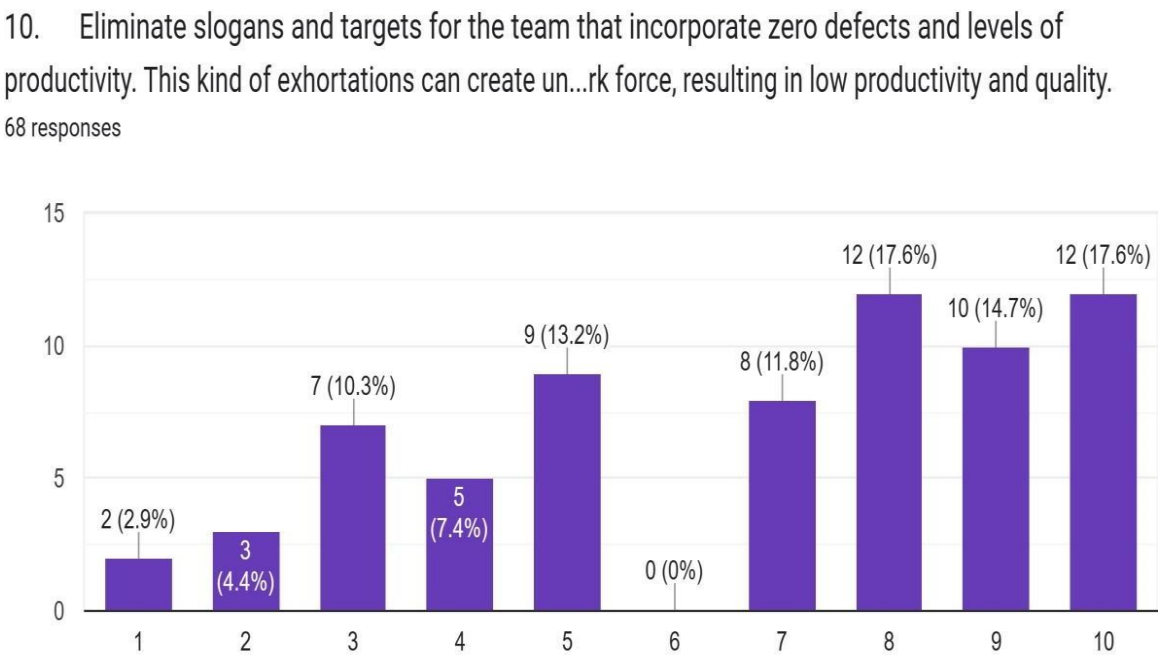


Figure 14 Survey Question 10

Figure 14 from the survey question asked respondents about slogans and targets from the organization team. A combined 75% of the interviewees advise against using phrases and goals for the team that include zero defects and high levels of output. They indicated that this type of exhortation can foster an unpleasant and adversarial atmosphere in the workplace, resulting in poor output and quality.

4.4.11 Survey Question #11

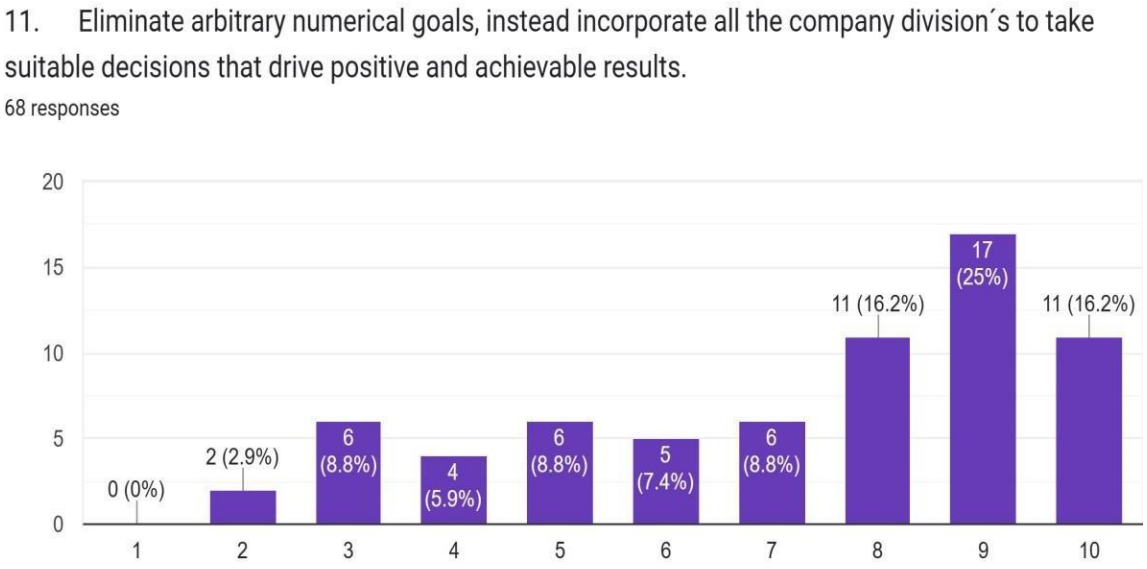


Figure 15 Survey Question 11

Almost 82% of the interviewed believe to eliminate arbitrary numerical goals, instead incorporate all the company division´s to take suitable decisions that drive positive and achievable results. This is shown by the figure 15 above and indicates that the remaining respondents felt the need for alternative measure of decision making.

4.4.12 Survey Question #12

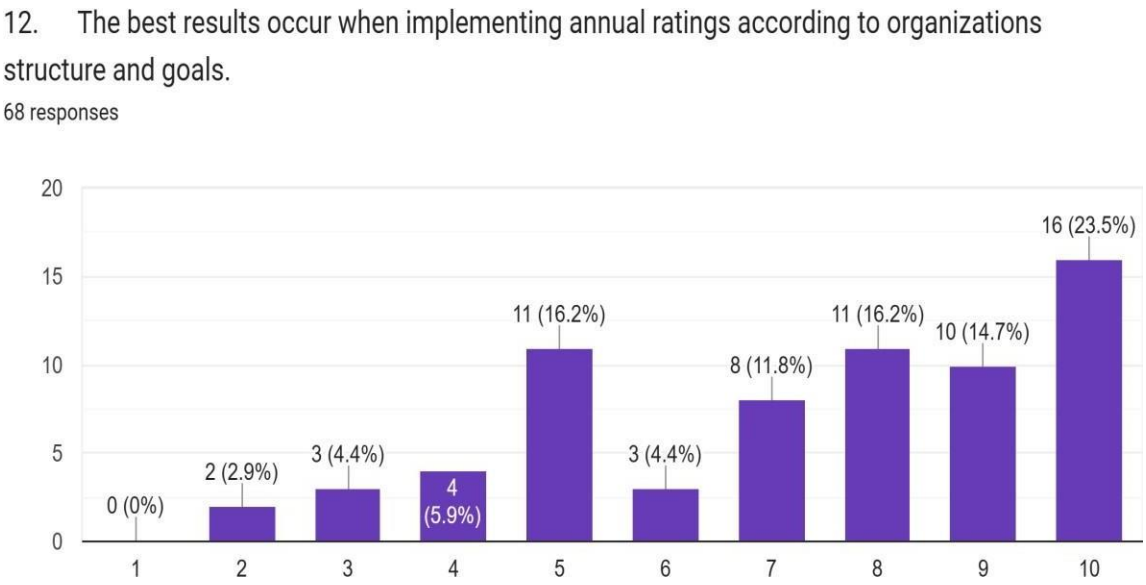


Figure 16 Survey Question 12

When rating organizational goals, figure 16 shows that almost 87% of the interviewed consider that the best results occur when implementing annual ratings according to organizations structure and goals.

4.4.13 Survey Question #13

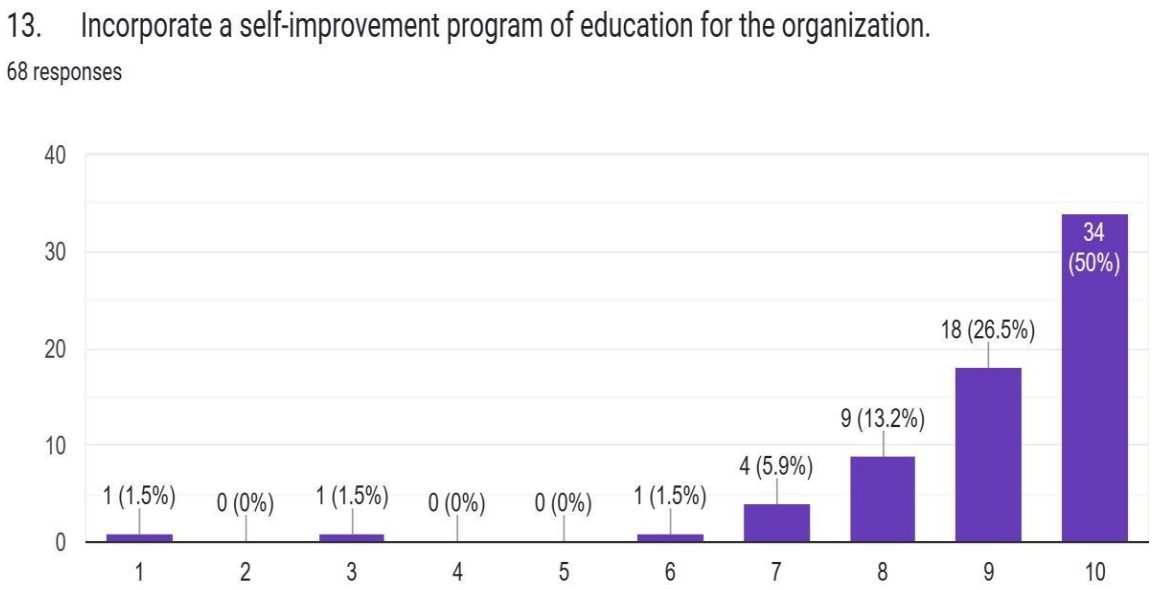


Figure 17 Survey Question 13

Figure 17 above indicates that almost 97% of the interviewed believe to incorporate a self-improvement program of education for the organization. The company must have continuous professional development to improve professional efficiency and self-fulfillment of the employees.

4.4.14 Survey Question #14

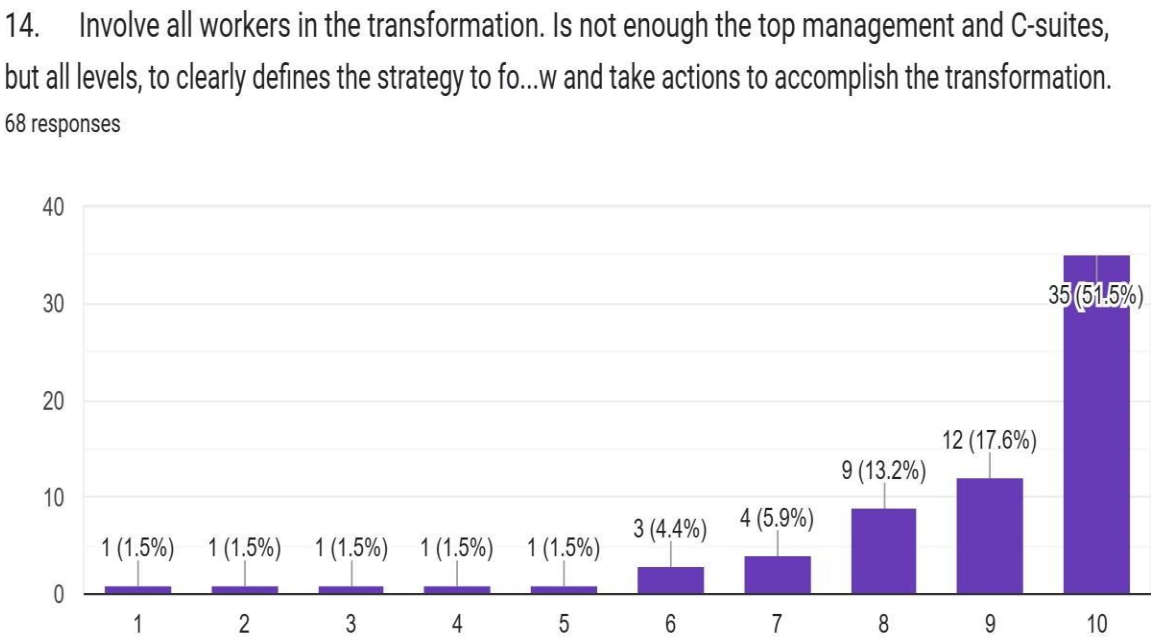


Figure 18 Survey Question 14

From the survey, figure 18 shows that almost 94% of the interviewed believe to involve all workers in the transformation. Is not enough for the top management and C-Suites, but all levels, to clearly define the strategy to follow and take actions to accomplish the transformation.

4.5 Triangulation of Result

Triangulation enhances the research. Using semi-structured interviews, surveys, and papers from the literature review, different databases can be generated to demonstrate various parts of the research occurrence. When one set of findings demonstrates the other study groups and explains the results of the analysis, it serves to validate the hypothesis (Johnson et al.,

2017). The study used qualitative structured questionnaires surveys to support the interviews to generate the themes for the study. These additional questions were set forth to enhance more accuracy of the findings from the respondents and other members of the organization.

The research was conducted in India, to investigate supply chain disruptions after the post pandemic on business performance. The emphasis was on the views and strategies of company leaders that can increase production and mitigate supply distractions. A multiple case study from Tata and Mahindra was selected for this research because it provides for the analysis of different data coming from the various Executives in order to make assumptions about the model (Noble & Heale, 2016).

A variety of data sets were included, including semi-structured exploratory conversations with 35 executives, observations, and a variety of viewpoints on experiences and impressions supply chain disruptions. According to Denzin (2012), the multiple approach triangulation technique encourages a variety of data collection approaches. Hence, the researcher used structured survey questionnaire to enrich the study findings. Qualitative surveys assist in exploring further in an interview by providing an evolving validity of the findings from the interviews. This approach has not been used by many researchers although they exist in the body of literature (Yin, 2015).

The first phase of triangulation focused on comprehending the study's background. It included conversations with several SME business leaders' perspectives on innovative strategies, demographic data gathering, and assessments of business leaders' work output strategies to shed light on supply chain improvement. The second phase included using the secondary sources from the literature review to generate survey questions to support the analysis of the result findings.

Data from the interviews are evaluated using techniques consistent with qualitative exploratory study. The data were coded and analyzed thematically. The business leaders' observations identified the complexities of the business leaders' decision-making process related to the context. The themes that emerged from the interview guide, survey, and document analysis were forwarded to the study participants for their feedback and validated through the literature review.

Finally, the findings were supplemented by the surveys and the literature review's similarities. A thorough document search was done, including, but not limited to, research documents, media reports and papers, letters to editors, declarations of government policy, and publications published on work performance after the disruptions especially in the automotive industry in India. This data is used to validate and affirm the effects of workers' job satisfaction, reflecting the triangulation of the analysis.

To gain credibility according to Procter et al., (2017), the study must guarantee the correctness, complexity, and reliability of the data rather than its data quantity. The study double-checked data analyses with research participants from various viewpoints. The use of member checking and suing the supplementary survey assisted in ensuring the correctness of the data analysis. As a result of triangulation, which included coding and finding individual small business executives' themes in the study, triangulation demonstrates credibility through continuous involvement, constant observation, and external audits of the works through document reviews. These stages allowed for cross-validation and promoted the examination of issues influencing small company executives' decisions on work happiness strategies.

4.6 Conclusion

The study is based on a detailed descriptive analysis of the automobile and consumer products sectors, which are produced and sold in India by Indian businesses.

It provides evidence of the resources applied by the firms to implement programs to enhance the supply chain´s disruptions, within opportunities of creating social and economic value with the supply chain´s social sustainability. Based on our results, top executives will need to take into account the following when considering such post pandemic actions and partnerships.

First, to engage with partners who can connect with the firm with a pool of resources that it cannot presently access. Second, your resources will need adaptation to the local context before undertaking any supply chain management initiative with suppliers. Thirdly, invest in knowledge transfer routines and logistical resources in order to successfully integrate your suppliers. Finally, govern buyer-supplier relationships and partnerships through relational mechanisms. This research is not free of limitations.

The research design included two firms operating in the same country. This increases our framework´s internal validity but is also weakens the generalizability of the results.

Based on the suggested research questions, the data analysis from the conversations with the management teams and top executives helped us to understand their real strategy and goals. The data analysis guided by the proposed research to dive into what changes or strategies automotive and consumer products industries are implementing during global unstable economic activities.

This study will encourage decision-makers and shareholders to focus on creating value for themselves and to participate in crucial areas like developing new products and

services that can be used to improve operational flows and EBITDA on final figures that can be evaluated by qualified evaluators in the open markets.

The research analyzed the business perspective for the strategic direction and strategic profile of a company. According to Brenes and Camacho (2016), companies will make their supply chain more resilient in strategies of growth, regional expansion, and global competition, without weakening their competitiveness.

Hence, this research demonstrated that holistic managerial decisions taken on a transformational framework of very structured criteria and assessment methods can help small and medium size organizations to use levers of business excellence and innovation to improve in a world of competitiveness and performance.

The importance of the research is to help firms worldwide rediscover their potential and capacity to achieve innovation and business excellence by using performance levers.

CHAPTER 5: DISCUSSION

5.1 Discussion of research Questions and Survey

The study's ideological theories describe how skills develop. It claims that the resources in the company's resource portfolio are linked together to form capabilities, each of which is a special mix of resources that enables businesses to perform actions that add value to the organization (Othman & Sheehan, 2011). Additionally, according to these academics, stabilizing, enhancing, and pioneering are ways to achieve combining. Stabilizing is the method used by the company to make small changes to the capabilities of the current business.

The term "enriching" describes the process of extending or expanding upon prior capabilities; new capabilities can be formed by fusing newly obtained resources with preexisting ones. Last but not least, pioneering is the incorporation of new resources or the recombination of existing resources in various ways to create new powers for the company. Research and development (R&D), according to earlier literature, boosts environmental innovation because companies with organized innovation departments are more likely to have an internal knowledge and skill foundation for creating new goods, services, and business models. (Mazzanti et al., 2020)

In order to support our claim that business excellence and innovativeness are the outcomes of a two-stage enriching bundling, we focus on the resource management framework and the findings in operations management literature. First, we discuss how innovation resources are linked to innovativeness, and then we discuss how supply chain management distinguishes organizational performance.

Therefore, we put forward the following hypotheses:

"Supply chain management distinguishes organizational success in global changes and emphasized the significance of analyzing and revising research models and applying them to industrial sectors that are crucial to many nations, such as India."

By conducting observations (based on previous data research), interviews, and analysis based on management domains described by these methods, this study diagnosed various pieces of information related to the Malcolm Baldridge and Deming criteria for business excellence (Weerasinghe & Thisera, 2016).

It is a technique for enhancing total organizational performance and can actively contribute to ongoing performance improvement by using measurement and demonstrating input on the organization's performance (Fauzi, 2021).

In the context of an integrated approach to management and business, Malcolm Baldridge and Deming developed a number of factors, including leadership, strategy, customers, workforce, processes, and outcomes. The information gathered from the conversations is intended to be analyzed and presented in final reports according to the standards of the Baldridge and Deming Program.

Based on the Deming criteria, the study's findings plainly showed that quality had improved while costs had decreased. The Plan, Do, Check, and Act phases of the Malcolm Baldridge and Deming cycle are a quality development paradigm. (PDCA). This criterion focuses on 14 points to achieve total quality management, including driving out fear, breaking down silos, adopting a new philosophy, ceasing to rely on inspection to achieve quality, working with a single supplier to reduce costs, creating a purpose for improvement, adopting the new philosophy, removing annual ratings, self-improvement programs, and involving all employees in the transformation costs less rework, fewer delays, and mistakes, with better use

of the materials, time, and facilities of the company. As in the present, every gap identified as a threat or competitive advantage to be used, can result in positive or negative numbers that can add or take value from the companies, shareholders, and stakeholders, a company's ability to logically understand the impacts that can be present in the supply chain managements and clearly see how the company can mitigate such disruptions may mean the difference between success or failure.

With higher efficiency and greater market penetration due to lower prices and higher quality, this chain increases market dominance. In the end, it will support the company's ability to continue operating and grow its workforce.

5.2 Set Goals

For any service or product improvement with the precise and objective goal of increasing competition, generating employment, and sustaining the company. Your pursuit of client orientation, the core of consistency, will be motivated by this goal. The goal will be accomplished if the business can fulfill the requirements and expectations of the customers at a fair price that they are ready to pay. The highest management level must outline very explicitly the strategy that will be followed and understood at all levels, along with the organization's guiding principles, at this point. The outcomes will continue in business tomorrow if management maintains consistency in the purpose and sets the path explicitly.

5.3 Adoption of a new mindset

Where quality and productivity are viewed as two sides of the same coin that need to be real partners results in less redo work. The improvement of procedures has very particular

advantages for the company. First, it will support efforts to increase product consistency in processes.

Secondly, there will be less wastage of labor, raw materials, supply-chain performance and timing, errors, and rework, and third, the production of the good or service will rise at a lower cost. Since the business will be focused on creating a positive working atmosphere for its employees and fostering a culture of strategic talent, the outcomes boost employee morale and increase productivity.

5.4 Reduce reliance on evaluation.

To achieve quality by putting an end to large scale products in an effort to control the results of goods by identifying any flaws that will result in lost earnings and more rework. By using customer and process input jointly in an engaging collaboration to comprehend any differences in the working lines, the outcomes of the successful application of these new processes are pushed in failure prevention.

5.5 Work with a single supplier to reduce costs.

Through a long-term relationship of trust and devotion will result in introducing innovation, on a win-win cooperation basis, that will help both businesses reduce variations and become more lucrative. Long-term production will result in quality advantages and fewer errors, as well as a better grasp of all the processes involved in the creation of a specific product.
Finally, the customer-centric factors will result in a happy client.

5.6 Plan, Do, Check, and Act

It is the center of continuous development according to Malcom pyramid to address the costs are decreased when you prepare and look for ways to increase quality and efficiency across

all business operations. A top management that has compromised with their organization always strives to improve operations, provide resources for all business and employee requirements, excellent upkeep, and team training and supervision. It is a good idea to have a backup plan in place in case the backup plan fails.

5.7 On-the-job training

The best results for a company come from on-the-job training (OJT), as new and specialized skills are needed to keep up with changes in product design, specialty techniques, customer requirements, ways to operate machinery, and working procedures. Because the business is investing in them by directing them in training to acquire the skills that the organization requires, the team will rely the organization into more commitment, confidence, and trust, and ultimately can be a means of new chances for success and scaling their roles.

5.8 Leading the team toward improved performance is the goal of leadership.

By reaching the business goals, a good leader will constantly ensure all the conditions are in place for his team to carry out their tasks promptly and will assist them in improving as required. The leader will also falter if the team does. This association has a loose-loose or win-win outcome. The orchestra sounds its best when everyone plays together, not just one instrument or one business section. The best results are obtained when a business is able to integrate all aspects of its corporate organization so that all teams adhere to a single course of action or plan and where the shareholders, at the top.

5.9 Take away your fear.

To allow your team to perform effectively and efficiently for the company. Anxiety is viewed as a problem that needs to be fixed. We obtain inaccurate statistics when dread is

prevalent. Non-system or improvement management methods will be effective if there is a positive climate of mutual regard, understanding, and consciousness within the company. This point, according to Deming, is among the most crucial because it has an impact on nine other factors. Therefore, the best outcomes are focused on promoting effective two-way dialogue, or driving out fear so that everyone on the team can work more productively and effectively for the company.

5.10 To break down barriers and collaborate.

Avoid building divisions between sections because these subdivisions may result in different strategies and viewpoints from those set by upper management. Sometimes the plan is not effectively conveyed because each Division has its own strategy. This is deadly for the business and could result in significant losses in revenue. Deming says that "if one business area is being informed that their goals are to maximize his section profits, then the outcome will be for the company failure". Therefore, business losses during the real periods when major disruptions.

5.11 Eliminate team-wide catchphrases and efficiency goals that include zero errors.

Exhortations of this nature may foster a hostile work environment and poor levels of output and quality. Deming explains that some banners that rather show what the management is doing on the job, for example, to improve the quality of the materials, or better team training, or better equipment maintenance to improve quality and productivity, might be a different story: this will increase the morale in the team.

5.12 Eliminate job standards and objectives.

Companies should try to include number targets for the team and management. Deming is not advising us to manage without numbers because we are all aware that both

individuals and businesses require objectives, plans, and purposes. Here, however, the team requires instruction, systems, and techniques in order to effectively accomplish the company's objectives.

Budgets and forecasts are necessary for improved resource planning and allocation, but they shouldn't just be arbitrary number targets; rather, they should include input from all business divisions to help decision-makers make informed choices that will result in positive and attainable outcomes.

5.13 Annual ratings should be eliminated.

Annual rating places pressure on the employees and should be eliminated because they prevent employees from contributing to their employment if they are forced to focus all of their efforts on achieving a high rating that will support their bonuses or yearly performance. Instead of actually benefiting the entire organization and business strategy, these goals are more about receiving a high grade to satisfy the superiors. It is crucial to have a good compensation system for the employees, so the best results come from putting it into practice in accordance with the organization's structure and goals. This could ensure the team's long-term retention by making sure each member is happy with their assigned tasks, has attainable goals that match their competencies and responsibilities, and has room to grow in their roles.

5.14 Teaching tool for organizational self-improvement.

These efforts support and maintain the team's engagement with the business because they make them feel valued and concerned. An organization requires individuals who are committed to continuing their education because it may enable them to progress their careers and secure desirable places within the organization. A company must constantly take steps to

show its workers that education and training are crucial pillars of growth and are rewarding for anyone who is willing to put in the effort.

5.15 Employee involvement in the change.

Only senior management committing to quality and efficiency is insufficient. Everyone has a role to play in the change. When the C-Suites explicitly define the plan to follow and take steps to accomplish the transformation, better outcomes are given. Backing is insufficient; something must be done. If we resolve to have everyone embrace the new work-with-excellence productivity and quality mindset, the outcomes will support the company's long-term viability.

5.16 Results

The findings advise choosing an excellence framework, like Baldrige or Deming, that will direct the company to concentrate on efficient management of business performance, produce excellence, and boost competitiveness. Second, it advises choosing the best plan for your business's operations. The third recommendation is to have a staff that is prepared and educated to oversee and accomplish the corporate goals and objectives. Fourth, a strong support system is established with the required tools for training, evaluation, and growth, along with the choice of an effective business integration of options in line with the corporate business strategy. Five, based on the particular company requirements, it recommends having a strong process such as ISO, Six Sigma, or any other capability mature model. Finally, a powerful culture focused on customers and a pleasant working atmosphere for workers, with clear organizational principles.

In today's society, it is difficult to sustain a company. There are numerous obstacles, and only decision-makers capable of making better revolutionary choices will achieve better outcomes. This framework model can be used to leverage business excellence and creativity, allowing companies all over the globe to rediscover their potential and make transformations feasible.

Elon Musk said, *"Innovation often doesn't occur through one breakthrough concept, but through a relentless emphasis on constant progress,"* when discussing innovation and competitiveness.

As for the grouping of innovation resources into process innovativeness, the findings imply that internal and external research and development (R&D), the purchase of resources like software and machinery, the acquisition of external knowledge, and supplier collaboration for innovation are all combined to create process innovativeness. The resource with the greatest influence on the connection into process innovation among these is provider collaboration. This might suggest that the knowledge brought from these organizations is not applied in the development of firm’s capability to innovate processes. Concerning the resources that are linked to environmental awareness and innovativeness, the findings indicate that collaboration with external parties for innovation has a positive effect on environmental innovativeness, whereas internal R&D, external R&D, resource acquisition, and supplier cooperation are required.

CHAPTER 6: SUMMARY, IMPLICATIONS, AND RECOMMENDATION

6.1 Summary

As a result of disruptions, the Indian economy, decision-makers, and players in the global supply chain, including ports, warehouses, stores, and organizations, needed to be conscious of ongoing changes.

Based on strengthening relationships for economic interaction in fields of Economic Value Added (EVA) for the supply chain such as energy, technology, innovation, pharmaceutical goods, and commodities, similar to the engagement they have with the African continent, India is providing a framework for global trade since this century, expanding its scope for economic cooperation, and becoming a global force in the world (Biswas, 2016).

The Covid-19's emergence caused loopholes and interruptions in the worldwide production supply chain, which had a significant impact on the manufacturing process in the India market. As many organizations lacked the expertise to meet the task of the post pandemic, many companies offer a great deal. Even though many businesses closed, new markets also developed, so it's important to figure out what tactics' businesses can employ to reduce supply-chain output, particularly in the India markets.

With the emerge of new organizations, entrepreneurs, and companies unable to get value creation, (Amankwah-Amoah et al., 2021), it is necessary to find effective tools for transformational managerial decisions and holistic routes to deal with the overall situations of the companies, logistics, customers satisfaction, and this data can provide benefits and generating information for small and midsize organizations.

This research brings valuable information and holistic alternatives for the development and economic growth of small and medium size companies with supply trade activities that are presently having failures and losses in their daily operations.

6.2 Implications

The Malcolm Baldridge and Deming Criteria have enabled organizations of all sizes, sectors, and businesses to achieve their objectives, better their numerical outcomes, and become more competitive. It is a framework that any organization can use to better their general performance, and the parameters are heavily focused on assisting organizations in succeeding by tackling current marketplace and economic chances and challenges. The findings of this research were extremely effective in areas such as strategy, by providing people with unity and having a clear purpose for the company to achieve extraordinary outcomes.

The concentration of pertinent information in financial performance was focused on optimizing stockholder value by having a better cash flow, profitability, and business value. The results based on customer value were to inspire devotion and surpass their customers' standards and satisfactions.

The significance of maximizing practical effectiveness, building strong demand for their goods, and developing strong alliances that add value to their organizations were all mentioned in relation to organizational effectiveness. Last but not least, the team's involvement was remarkable to see their focus on improving coworkers' outcomes while also having a quality recruitment process that allowed the team to work together toward the organization's goals and objectives.

6.3 Recommendations for Future Research

The research concentrated on the techniques firms worldwide rediscover their potential and capacity to achieve innovation and business excellence by using performance levers, and the importance of developing a framework for supply chain management disruptions, so the firms can suggest using post-pandemic actions needed to maintain holistic supply-chains.

The research discovered that when a firm experiences a disruption, the impacts are frequently felt throughout the supply chain. India is not an exception to the global shocks of disruptions; as supply networks become more interconnected and businesses strive for speed and efficiency, the likelihood that disruptions will spread across all countries rises. Therefore, the organizations' strategies in assisting the overcoming supply-chain disruptions need to be in place and have the necessary visibility to deal with them.

The study propose that future study consider Supply Chain Visibility as a crucial element for decision-makers and parties engaged in the global supply chain, such as ports, depots, merchants, and organizations, who must be aware of continuous changes due to disturbances. Supply chain visibility is the ability to track different goods and products in transit giving a clear view of the inventory and activity. It enables stakeholders to improve customer service and cost controls through management of inventory in motion, proactive status updates, limiting disruptions and risk mitigation. If we apply this data to a control tower, then we might have a supply chain control tower, as a cloud-based solution that leverages data from across the entire network to deliver complete supply chain visibility. Considering how to develop supply chain control towers in India, enabling technologies, so that warehouse spaces, customer demand, transportations, ports, etc., can make early decisions to secure capacities for the future.

6.4 Conclusion

India faces many difficulties, especially for those groups battling for survival. Our ideas are founded on a six-part strategic alignment model. Firstly, choose a framework for excellence, like Baldrige or Deming, that will advise the company to concentrate on efficient administration of business performance in order to foster excellence and increase their competitiveness.

The choice of the best plan for your company's business comes next. The third step is having a staff that is prepared and trained to lead and accomplish the broad aims and objectives of the business. Fourth, is a good support system with the required tools for training, evaluation, and growth, along with the selection of a good business integration of options in line with the corporate business strategy. Five, based on the unique requirements of the company, is putting in place a solid process such as ISO, Six Sigma, or any other capability mature model. Last but not least, a powerful organizational ethos with a focus on customers and a positive work atmosphere. In today's society, it's difficult to maintain a company.

There are numerous obstacles to overcome, and the only decision-makers who can make better revolutionary choices will achieve better outcomes. Having this framework model is beneficial to leverage business creativity and excellence, assisting organizations globally to rediscover their potential and enable the change.

Elon Musk said,

"*Innovation often doesn't occur through one breakthrough concept, but through a relentless emphasis on constant progress," when discussing innovation and competitiveness.*

All these changes and transformations may lead to the most growth and development seen in recent years as India develops a worldwide digital economy. The outcomes in the

manufacturing and distribution networks may have an influence on the effectiveness and window of time to prevent disruptions. Thus, it is necessary to evaluate the policies that must be created for the shift from the recovery to the disruption-free operations mode, which will result in the normality of the peaks or valleys encountered by the organizations and prevent disruption tails (Ivanov, 2018).

Based on fostering relationships for economic exchanges as previously stated and adding value to supply networks, India has been providing a strong foundation for international commerce in the twenty-first century (Jain, 2020). For the advantage of the nation, which has struggled greatly during this pandemic scenario, the GDP growth forecasts for India could remain at 9.5% (IMF, 2022).

The introduction of Covid-19 had a significant impact on the manufacturing process in the India market and caused loopholes and delays in the global supply-chain. As many organizations lacked the expertise to meet the post-pandemic problem, many companies offer a great deal of services. The need to identify tactics organizations can use to reduce the supply-chain output, particularly in the India markets, arises from the fact that while many businesses closed, there were also new markets that emerged.

It is critical to find efficient tools for transformational managerial decisions and comprehensive approaches to deal with the overall situations of the companies, logistics, and customer satisfaction, as these data can provide benefits and generate information for small and midsize organizations. With the emergence of new organizations, entrepreneurs, and companies were unable to create value, (Amankwah-Amoah et al., 2021). This study offers insightful data and comprehensive solutions for the growth and development of small and

medium-sized businesses engaged in supplier trade, which are currently experiencing failures and losses in their day-to-day operations.

BIBLIOGRAPHY

Abbasi, M. (2017). Towards socially sustainable supply chains–themes and challenges. *European Business Review*, *29(3)*, 261-303.

AlMuhayfith, S., & Shaiti, H. (2020). The impact of enterprise resource planning on business performance: With the discussion on its relationship with open innovation. Technology, Market, and Complexity. *Journal of Open Innovation*, *6(3)*, 87.

Adeoye-Olatunde, O. A., & Olenik, N. L. (2021). Research and scholarly methods: Semi-structured interviews. *Journal of the American college of clinical pharmacy*, 4(10), 1358-1367.

Agrawal, S., Jamwal, A., & Gupta, S. (2020). Effect of COVID-19 on the Indian economy and supply chain. *Preprints.Org.*,*10(1)* 48.

Agrawal, A. (2001). Common property institutions and sustainable governance of resources. *World development*, 29(10), 1649-1672.

Alareeni, B. A., & Hamdan, A. (2020). ESG impact on performance of US S&P 500-listed firms. Corporate Governance. *The International Journal of Business in Society*.

Alexander, A. E. (2016). Sustainable supply chain management and decision theory: a qualitative exploration using planetary boundaries and social foundations. *(Doctoral dissertation, Cardiff University*).

Allen, S. D., Zhu, Q., & Sarkis, J. (2021). Expanding conceptual boundaries of the sustainable supply chain management and circular economy nexus. Cleaner Logistics and Supply Chain, *2*(10),0011.

Alderton, D. L., & Larson, G. E. (1994). Cross-task consistency in strategy use and the relationship with intelligence. *Intelligence review*, *18(1)*, 47-76.

Amankwah-Amoah, J., Khan, Z., & Wood, G. (2021). COVID-19 and business failures: The paradoxes of experience, scale, and scope for theory and practice. *European Management Journal*, *39*(2), 179-184.

Annan, D. (2021). Half the Sky: Understanding the Basis of Entrepreneurial Management. *SteveJobs Publishers.*

Atmowardoyo, H. (2018). Research methods in TEFL studies: Descriptive research, case study, error analysis, and R & D. *Journal of Language Teaching and Research*, *9*(1), 197-204.

Araz, O. M., Choi, T. M., Olson, D. L., & Salman, F. S. (2020). Data analytics for operational risk management. *Decision Sciences, 51*(6), 1316-1319.

Asruddin, D. A. (2020). Performance of Immunization Program Managers Based on Malcolm Baldrige Criteria for Performance Excellence (MBCFPE) in Puskesmas Tangerang District in 2019. *Indian Journal of Public Health Research & Development, 11*(3), 1442-1447.

Auger, P., Devinney, T. M., Louviere, J. J., & Burke, P. F. (2010). The importance of social product attributes in consumer purchasing decisions: A multi-country comparative study. *International Business Review, 19*(2), 140-159.

Ayubi, D. (2020), Performance of Immunization Program Managers Based on Malcolm Baldridge Criteria in Performance Excellence. Baldrige Criteria for Performance Excellence (MBCFPE) in Puskesmas Tangerang District in 2019. *Indian Journal of Public Health Research & Development,11(3),* 1442-1447.

Bauman, A. (2015). Qualitative online interviews: Strategies, design, and skills. Qualitative Research in Organizations and Management: *An International Journal*, *10*(2), 201-202.

Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The case research strategy in studies of information systems. *MIS quarterly*, 369-386.

Biswas, D. A. (2016). India's expanding relations with Africa. *Lechini, Gladys*, 113.

Bowden, C., & Galindo-Gonzalez, S. (2015). Interviewing when you're not face-to-face: The use of email interviews in a phenomenological study. *International Journal of Doctoral Studies*, *10*, 79.

Boyer, R. H., Peterson, N. D., Arora, P., & Caldwell, K. (2016). Five approaches to social sustainability and an integrated way forward. *Sustainability, 8*(9), 878.

Bozarth, C. C., Warsing, D. P., Flynn, B. B., & Flynn, E. J. (2009). The impact of supply chain complexity on manufacturing plant performance. *Journal of operations management*, *27*(1), 78-93.

Brenes, E. R., Camacho, A. R., Ciravegna, L., & Pichardo, C. A. (2016). Strategy and innovation in emerging economies after the end of the commodity boom—Insights from Latin America. *Journal of Business Research, 69*(10), 4363-4367.

Bowman, C., & Ambrosini, V. (2000). Value creation versus value capture: towards a coherent definition of value in strategy. *British journal of management*, *11*(1), 1-15.

Bowersox, D. J., Stank, T. P., & Daugherty, P. J. (1999). Lean launch: managing product introduction risk through response-based logistics. AN International Publication of The Product Development & Management Association. *Journal of Product Innovation Management, 16*(6), 557-568.

Bowersox, D. J., Closs, D. J., & Helferich, O. K. (1996). *Logistical management* (Vol. 6). New York: McGraw-Hill.

Cainelli, G., Mazzanti, M., & Montresor, S. (2012). Environmental innovations, local networks, and internationalization. Journal of *Industry and Innovation*, *19*(8), 697-734.

Cainelli, G., De Marchi, V., & Grandinetti, R. (2015). Does the development of environmental innovation require different resources? Evidence from Spanish manufacturing firms. *Journal of Cleaner Production*, *94*, 211-220.

Carter, C. R., & Rogers, D. S. (2008). A framework of sustainable supply chain management: moving toward new theory. *International journal of physical distribution & logistics management*.

Cheng, J., Chen, X., Yang, H., & Leng, M. (2012). An enhanced k-means algorithm using agglomerative hierarchical clustering strategy.

Chen, I. J., Paulraj, A., & Lado, A. A. (2004). Strategic purchasing, supply management, and firm performance. *Journal of operations management*, *22(5)*, 505-523.

Clarkson, M. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of management review*, *20*(1), 92-117.

Ciliberti, F., Pontrandolfo, P., & Scozzi, B. (2008). Investigating corporate social responsibility in supply chains: an SME perspective. *Journal of cleaner production*, *16*(15), 1579-1588.

Corbett, C. J., & Klassen, R. D. (2006). Extending the horizons: environmental excellence as key to improving operations. *Manufacturing & Service Operations Management*, *8(1)*, 5-22.

Cohen, J. A., Berliner, L., & Mannarino, A. P. (2000). Treating traumatized children: A research review and synthesis. *Trauma, Violence, & Abuse*, *1(1)*, 29-46.

Curkovic, S., Sroufe, R., & Landeros, R. (2008). Measuring TQEM returns from the application of quality frameworks. *Business Strategy and the Environment*, *17(2)*, 93-106.

Denzin, N. K. (2012). Triangulation 2.0. *Journal of mixed methods research*, *6(2)*, 80-88.

Delmas, M. A., & Toffel, M. W. (2008). Organizational responses to environmental demands: Opening the black box. *Strategic management journal*, *29(10)*, 1027-1055.

Delmas, M. A., & Pekovic, S. (2013). Environmental standards and labor productivity: Understanding the mechanisms that sustain sustainability. *Journal of Organizational Behavior*, *34(2)*, 230-252.

Derczynski, L., Bontcheva, K., Liakata, M., Procter, R., Hoi, G. W. S., & Zubiaga, A. (2017). SemEval-2017 Task 8: RumourEval: Determining rumour veracity and support for rumours.

Downie, J., & Stubbs, W. (2013). Evaluation of Australian companies' scope 3 greenhouse gas emissions assessments. *Journal of Cleaner Production*, *56*, 156-163.

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review*, *20*(1), 65-91.

Dubey, R. (2023). Unleashing the potential of digital technologies in emergency supply chain: the moderating effect of crisis leadership. *Industrial Management & Data Systems*, *123*(1), 112-132.

Dźwigoł, H., & Dźwigoł-Barosz, M. (2020). Research processes and methodological triangulation. *Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska*, *(148)*, 161-170.

Eesley, C., & Lenox, M. J. (2006). Firm responses to secondary stakeholder action. *Strategic management journal*, *27(8)*, 765-781.

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, *14(4)*, 532-550.

Elkington, J. (1998). Accounting for the triple bottom line. Measuring business excellence.

Ellinger, A. E., Daugherty, P. J., & Gustin, C. M. (1997). The relationship between integrated logistics and customer service. *Transportation Research Part E. Logistics and Transportation Review*, *33(2)*, 129-138.

Fauzi, I. (2021). Analysis of PTKIN Opportunities: Quality Measurement Through the Malcolm Baldrige Criteria for Using the World Class Universty. Al-Tanzim. *Jurnal Manajemen PendidikanIslam*, *5(1)*, 1-13.

Ferrari, A., Mazzanti, F., Basile, D., Beek, M. H. T., & Fantechi, A. (2020, June). Comparing formal tools for system design: a judgment study. In Proceedings of the ACM/IEEE 42nd. *International Conference on Software Engineering*, 62-74.

De Souza, S. F. (2022). Developing a Framework for Supply Chain Management Disruptions in India. *Global journal of Business and Integral Security*.

Fisher, M. L. (1997). What is the right supply chain for your product? *Harvard business review*, *75*, 105-117.

Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). Stakeholder theory: The state of the art.

Frohlich, M. T., & Westbrook, R. (2001). Arcs of integration: an international study of supply chain strategies. *Journal of operations management*, *19(2)*, 185-200.

Fusch, P., Fusch, G. E., & Ness, L. R. (2018). Denzin's paradigm shift: Revisiting triangulation in qualitative research. *Journal of Sustainable Social Change*, *10*(1), 2.

Gans, J. (2016). The disruption dilemma. *MIT press.*

Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: An international publication of the product development & management association. A literature reviews. *Journal of Product Innovation Management: 19(2),* 110-132.

Geissdoerfer, M., Savaget, P., Bocken, N. M., & Hultink, E. J. (2017). The Circular Economy–A new sustainability paradigm? *Journal of cleaner production*, *143*, 757-768.

Geng, Y., Sarkis, J., & Bleischwitz, R. (2019). How to globalize the circular economy. *Nature*, *565(7738)*, 153-155.

George, A. L., & Bennett, A. (2005). Case studies and theory development in the social sciences. *MIT press.*

Gerring, J. (2007). Case Study Research, Principles and Practices Cambridge University Press. *New York.*

Gimenez, C., & Tachizawa, E. M. (2012). Extending sustainability to suppliers: a systematic literature review of supply chain management*: an international journal*.

Given, L. M. (Ed.). (2008). The Sage encyclopedia of qualitative research methods. *Sage publications.*

Golicic, S. L., & Smith, C. D. (2013). A meta-analysis of environmentally sustainable supply chain management practices and firm performance. *Journal of supply chain management*, *49(2)*, 78-95.

Gómez-Miranda, M. E., Pérez-López, M. C., Argente-Linares, E., & Rodríguez-Ariza, L. (2015). The impact of organizational culture on competitiveness, effectiveness and efficiency in Spanish-Moroccan international joint ventures. *Personnel review*.

Ghisetti, C., & Pontoni, F. (2015). Investigating policy and R&D effects on environmental innovation: A meta-analysis. *Ecological Economics*, *118*, 57-66.

Granot, E., & Greene, H. (2014, October). A structural guide to interviewing as qualitative marketing research: The three-interview series model. In Marketing, technology and customer

commitment in the new economy: Proceedings of the 2005 Academy of Marketing Science (AMS) Annual Conference. *Springer International Publishing*, 77-81.

Gualandris, J., Klassen, R. D., Vachon, S., & Kalchschmidt, M. (2015). Sustainable evaluation and verification in supply chains: Aligning and leveraging accountability to stakeholders. *Journal of Operations Management*, *38*, 1-13.

Haites, E., Maosheng, D., Gallagher, K. S., Mascher, S., Narassimhan, E., Richards, K. R., & Wakabayashi, M. (2018). Experience with carbon taxes and greenhouse gas emissions trading systems. *Duke Envtl. L. & Pol'y F.*, *29*, 109.

Hall, A., Sulaiman, V. R., Clark, N., & Yoganand, B. (2003). From measuring impact to learning institutional lessons: an innovation systems perspective on improving the management of international agricultural research. *Journal of Agricultural systems*, *78*(2), 213-241.

Hancock, D. R., Algozzine, B., & Lim, J. H. (2021). Doing case study research: A practical guide for beginning researchers.

Hu, J. S., Tsai, P. F., & Yang, M. F. (2013). A Robust Policy for the Integrated Single-Vendor Single-Buyer Inventory System in a Supply Chain. In Proceedings of the Institute of Industrial Engineers Asian Conference 2013. *Springer Singapore*, 757-764.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research*, *15(9)*, 1277-1288.

Inkpen, A., & Choudhury, N. (1995). The seeking of strategy where it is not: Towards a theory of strategy absence. *Strategic management journal*, *16(4)*, 313-323.

Isabelle, D., Horak, K., McKinnon, S., & Palumbo, C. (2020). Is Porter's Five Forces Framework Still Relevant? A study of the capital/labour intensity continuum via mining and IT industries. *Technology Innovation Management Review*, *10*(6).

International Monetary Fund. (2021) Regional Economic Outlook, Oct. 2021. Asia Pacific. International Monetary Fund.

Ivanov, D. (2019). Disruption tails and revival policies: A simulation analysis of supply chain design and production-ordering systems in the recovery and post-disruption periods. *Computers & Industrial Engineering*, *127*, 558-570.

Ivanov, D. (2010). An adaptive framework for aligning (re) planning decisions on supply chain strategy, design, tactics, and operations. *International journal of production research*, *48(13)*, 3999-4017.

Jain, P. K., Hazenberg, R., Seddon, F., & Denny, S. (2020). Social value as a mechanism for linking public administrators with society: identifying the meaning, forms and process of social value creation. *International Journal of Public Administration*, *43(10),* 876-889.

Jasiulewicz-Kaczmarek, M., & Saniuk, A. (2015). Human factor in sustainable manufacturing. In Universal Access in Human-Computer Interaction. Access to the Human Environment and Culture: 9th International Conference, UAHCI 2015, Held as Part of HCI International 2015, Los Angeles, CA, USA, August 2-7, 2015, Proceedings, Part IV 9 *(pp. 444-455). Springer InternationalPublishing.*

Johan, S., & Vania, I. (2022, May). The Application of Herfindahl-Hirschman Index in Measuring the Concentration Level of Financial-Technology Industry. In Tenth International Conference on Entrepreneurship and Business Management 2021 (ICEBM 2021*)* (pp. 8-11). *Atlantis Press*.

Johnson, M., O'Hara, R., Hirst, E., Weyman, A., Turner, J., Mason, S., ... & Siriwardena, A. N. (2017). Multiple triangulation and collaborative research using qualitative methods to explore decision making in pre-hospital emergency care. *BMC medical research methodology*, *17*, 1-11.

Kemp, R., & Pearson, P. (2007). Final report MEI project about measuring eco-innovation. *UM Merit, Maastricht*, *10*(2), 1-120.

Kim, S., & Li, Z. (2021). Understanding the impact of ESG practices in corporate finance. *Sustainability*, *13(7),* 3746.

King, A., & Lenox, M. (2002). Exploring the locus of profitable pollution reduction. *Management Science*, *48(2),* 289-299.

King, A., & Lenox, M. (2001). Does it really pay to be green? An empirical study of firm environmental and financial performance: An empirical study of firm environmental and financial performance. *Journal of industrial ecology*, *5(1),* 105-116.

Khajavi, S. H., Salmi, M., & Holmström, J. (2020). Additive manufacturing as an enabler of digital spare parts. *Managing 3D Printing:* Operations Management for Additive Manufacturing, 45-60.

Kosorok, M. R. (2008). *Introduction to empirical processes and semiparametric inference*. New York: *Springer*.

Kotsantonis, S., Pinney, C., & Serafeim, G. (2016). ESG integration in investment management: Myths and realities. *Journal of Applied Corporate Finance*, *28(2),* 10-16.

Kulke, L., von Duhn, B., Schneider, D., & Rakoczy, H. (2018). Is implicit theory of mind a real and robust phenomenon? Results from a systematic replication study. *Psychological science*, *29*(6), 888-900.

Lai, E. R., & Waltman, K. (2008). Test preparation: Examining teacher perceptions and practices. *Educational Measurement: Issues and Practice*, *27*(2), 28-45.

Lawrence, K. (2021). When "Just-In-Time" Falls Short: Examining the Effects of the Suez Canal Blockage. In *SAGE Business Cases*. SAGE Business Cases Originals. *Sage Publications:*

Lewis, J., Ritchie, J., Ormston, R., & Morrell, G. (2003). Generalising from qualitative research. Qualitative research practice: A guide for social science students and researchers, *2*(347-362).

Malterud, K. (2016). Theory and interpretation in qualitative studies from general practice: why and how? *Scandinavian Journal of Public Health, 44(2),* 120-129.

Martínez-Olvera, C., & Shunk, D. (2006). Comprehensive framework for the development of a supply chain strategy. *International Journal of Production Research*, *44(21),* 4511-4528.

Mckone-Sweet, Kathleen, & Lee, Y. T. (2009). Development and analysis of a supply chain strategy taxonomy. *Journal of Supply Chain Management*, *45*(3), 3-24.

Melnyk, S. A., Narasimhan, R., & DeCampos, H. A. (2014). Supply chain design: issues, challenges, frameworks, and solutions. *International Journal of Production Research*, *52*(7), 1887-1896.

Menda, R., & Dilts, D. (1997). The manufacturing strategy formulation process: linking multifunctional viewpoints. *Journal of Operations Management*, *15*(4), 223-241.

Mentzer, J. T., DeWitt, W., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D., & Zacharia, Z. G. (2001). Defining supply chain management. *Journal of Business logistics*, *22*(2), 1-25.

Meredith, J. (1998). Building operations management theory through case and field research. *Journal of operations management*, *16*(4), 441-454.

Merriam, S. B., & Tisdell, E. J. (2015). Qualitative research: A guide to design and implementation. John Wiley & Sons.

Mfinanga, et al., (2019). Health services in sub-Saharan Africa-a situation analysis of the disruptions and impact of the COVID-19 pandemic.

Mithas, S. (2015). Making the elephant dance: The Tata way to innovate, transform and globalize. *Penguin UK*.

Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of management review*, *22*(4), 853-886.

Miemczyk, J., Johnsen, T. E., & Macquet, M. (2012). Sustainable purchasing and supply management: a structured literature review of definitions and measures at the dead, chain and network levels. *Supply Chain Management: An International Journal*, *17*(5), 478-496.

Mintzberg, H., & Quinn, J. B. (1998). Readings in the strategy process (pp. 309-323). Upper Saddle River, NJ. Prentice Hall.

Montabon, F., Pagell, M., & Wu, Z. (2016). Making sustainability sustainable. *Journal of Supply Chain Management*, *52*(2), 11-27.

Montiel, I. (2008). Corporate social responsibility and corporate sustainability: Separate pasts, common futures. *Organization & Environment*, *21*(3), 245-269.

Morse, J. M. (2015). Data were saturated... *Qualitative health research*, *25*(5), 587-588.

Morash, E. A., Droge, C. L., & Vickery, S. K. (1996). Strategic logistics capabilities for competitive advantage and firm success. *Journal of business Logistics*, *17(1)*, 1.

Murdoch, W. J., Singh, C., Kumbier, K., Abbasi-Asl, R., & Yu, B. (2019). Interpretable machine learning: Definitions, methods, and applications.

Narasimhan, R., Kim, S. W., & Tan, K. C. (2008). An empirical investigation of supply chain strategy typologies and relationships to performance. *International Journal of Production Research*, *46(18)*, 5231-5259.

Nguyen, D. T., Hoang, T. G., & Tran, H. G. (2022). Help or hurt? The impact of ESG on firm performance in S&P 500 non-financial firms. *Australasian Accounting, Business and Finance Journal*, *16*(2), 91-102.

Noble, H., & Heale, R. (2019). Triangulation in research, with examples. Evidence-based nursing, *22*(3), 67-68.

Ortas, E., Moneva, J. M., & Álvarez, I. (2014). Sustainable supply chain and company performance: *A global examination of Supply Chain Management: An International Journal*.

Othman, R., & Sheehan, N. T. (2011). Value creation logics and resource management: a review. *Journal of Strategy and management*, *4*(1), 5-24.

Pagell, M., & Shevchenko, A. (2014). Why research in sustainable supply chain management should have no future. *Journal of supply chain management*, *50*(1), 44-55.

Pathak, S. D., Day, J. M., Nair, A., Sawaya, W. J., & Kristal, M. M. (2007). Complexity and adaptivity in supply networks: Building supply network theory using a complex adaptive systems perspective. *Decision sciences*, *38*(4), 547-580.

Perez-Franco, R. (2010). A methodology to capture, evaluate and reformulate a firm's supply chain strategy as a conceptual system *(Doctoral dissertation, Massachusetts Institute of Technology).*

Pil, F. K., & Rothenberg, S. (2003). Environmental performance as a driver of superior quality. *Production and operations management*, *12*(3), 404-415.

Platts, K. W., Mills, J. F., Neely, A. D., Gregory, M. J., & Richards, A. H. (1996). Evaluating manufacturing strategy formulation processes. *International Journal of Production Economics, 46(2),* 233-240.

Porter, M. E (1979). How Competitive Forces Shape Strategy. *Harvard Business Review, 57*(2), 137-145.

Rennings, K. (2000). Redefining innovation—eco-innovation research and the contribution from ecological economics. *Ecological economics*, *32*(2), 319-332.

Riglietti, G., Piraina, M., & Trucco, P. (2022). The contribution of business continuity management (BCM) to supply chain resilience: a qualitative study on the response to COVID-19 outbreak. *Continuity & Resilience Review*, *4*(2), 145-160.

Roberts, R. E. (2020). Qualitative Interview Questions: Guidance for Novice Researchers. *Qualitative Report*, *25*(9).

Saad, M., Jones, M., & James, P. (2002). A review of the progress towards the adoption of supply chain management (SCM) relationships in construction. *European Journal of Purchasing & Supply Management, 8(3),* 173-183.

Sætra, H. S. (2021). A Framework for Evaluating and Disclosing the ESG Related Impacts of AI with the SDGs. *Sustainability, 13(15),* 8503.

Sakka, O., Millet, P. A., & Botta-Genoulaz, V. (2011). An ontological approach for strategic alignment: a supply chain operations reference case study. *International journal of computer integrated manufacturing, 24(11),* 1022-1037.

Salmi, J. (2020). COVID's Lessons by Global Higher Education: Coping with the Present While Building a More Equitable Future. Lumina Foundation.

Scheibe, K. P., & Blackhurst, J. (2018). Supply chain disruption propagation: a systemic risk and normal accident theory perspective. *International Journal of Production Research*, *56(1-2)*, 43-59.

Schneider, L., & Wallenburg, C. M. (2012). Implementing sustainable sourcing—Does purchasing need to change? *Journal of Purchasing and Supply Management*, *18(4)*, 243-257.

Schnetzler, M. J., Sennheiser, A., & Schönsleben, P. (2007). A decomposition-based approach for the development of a supply chain strategy. *International Journal of Production Economics*, *105*(1), 21-42.

Schoch, K. (2020). Case study research. *Research design and methods: An applied guide for the scholar-practitioner*, 245-258.

Schulz, S. A., & Flanigan, R. L. (2016). Developing competitive advantage using the triple bottom line: A conceptual framework. *Journal of Business & Industrial Marketing*.

Sheu, D. D., & Lee, H. K. (2011). A proposed process for systematic innovation. *International Journal of Production Research*, *49*(3), 847-868.

Shoaib, S., & Mujtaba, B. G. (2016). Use it or lose it: Prudently using case study as a research and educational strategy. *American Journal of Education and Learning*, *1*(2), 83-93.

Silverman, D. (2016). Introducing qualitative research. *Qualitative research*, *3(3)*, 14-25.

Sivell, S., Prout, H., Hopewell-Kelly, N., Baillie, J., Byrne, A., Edwards, M., ... & Nelson, A. (2019). Considerations and recommendations for conducting qualitative research interviews with palliative and end-of-life care patients in the home setting: a consensus paper. *BMJ supportive & palliative care*, *9*(1).

Stank, T. P., Keller, S. B., & Closs, D. J. (2001). Performance benefits of supply chain logistical integration. *Transportation journal*, 32-46.

Steenkamp, J. B. (2021). Building strong national brands. *International Marketing Review*, *38*(1), 6-18.

Stevens, G. C. (1989). Integrating the supply chain. *international Journal of physical distribution & Materials Management*, *19*(8), 3-8.

Stock, G. N. G., Noel P., Kasarda, J.D. 1999. Logistics, Strategy and Structure: A Conceptual Framework. *International Journal of Physical Distribution & Logistics Management,* 29**,** 224-239.

Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian journal of hospital pharmacy*, *68*(3), 226.

Tong, A., & Dew, M. A. (2016). Qualitative research in transplantation: Ensuring relevance and rigor. *Transplantation*, *100*(4), 710-712.

Vachon, S. &Klassen. R.D. (2008). Environmental management and manufacturing performance. The role of collaboration in the Supply Chain. *International journal of production economies. 111(2),* 299-315.

Vafadarnikjoo, A., Ahmadi, H. B., Hazen, B. T., & Liou, J. J. (2020). Understanding interdependencies among social sustainability evaluation criteria in an emerging economy. *Sustainability*, *12*(5), 1934.

Warming, C.R.F.TG., & Ray, G. C. (2011). INCCA. Indian Network for Climate Change Assessment.

Weerasinghe, T. D., & Thisera, T. J. R. (2016). Knowledge and knowledge management (With special reference to the Deming's theory of management and Malcolm Baldrige criteria for organizational performance).

Wiengarten, F., & Pagell, M. (2012). The importance of quality management for the success of environmental management initiatives. *International Journal of Production Economics*, *140*(1), 407-415.

Whittaker, J. A., Montgomery, B. L., & Acosta, V. G. M. (2015). Retention of underrepresented minority faculty: strategic initiatives for institutional value proposition based on perspectives from a range of academic institutions. *Journal of Undergraduate Neuroscience Education*, *13*(3), A136.

World Health Organisation (2019). Trends in maternal mortality 2000-2007. Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nation Population Division.

Yin, R. K. (2015). Qualitative research from start to finish. Guilford publications.

Yue, J., Austin, J., Wang, M. C., & Huang, Z. (2006). Coordination of cooperative advertising in a two-level supply chain when manufacturer offers discount. *European Journal of Operational Research*, *168*(1), 65-85.

Zúñiga, R. (2005). Operaciones: concepto, sistema, estrategia y simulación. *Academia. Revista Latinoamericana de Administración*, (34), 1-24.

Appendix A: Interview Questions

• The primary research question for the study is: which post-pandemic actions are needed to maintain holistic supply-chains? and how will your organizations' strategies assist in overcoming supply-chain disruptions?

1. What are the company's actual and future core values and competencies?
2. How can the business know that your customers are well after the post-pandemic?
3. What is your perspective on your competitor's performance will be in 1 year and 5 years?
4. With whom do you benchmark and why?

5.How do you know that your measurement is efficient and effective?

6. How do you improve and assess your acceptance as an organization to society?

7.Are you able to demonstrate how your business partners and employees are related to your organization's strategy?

Follow on survey questions.

1. Create a purpose for improvement towards any service or product with the specific and objective aim to become more competitive, generate jobs and remain in business. How do your company address this?
2. Adopt a new philosophy in where the quality and the productivity are a relation that needed to be a true relationship, results in less rework.
3. Cease dependence on inspection to achieve quality by stopping them on a mass way, in trying to manage the outcomes of products by detecting any defects, that will lead to loss of profits and more rework.
4. Work with one supplier to minimize cost by moving towards a single supplier thru a long-term relation of trust and loyalty, will result in bringing innovation, on a win-

win cooperation basis, that will help companies to reduce variations and become more profitable.

5. Continuous improvement is focus on the Deming Cycle “Plan, Do, Check and Act
6. On the job training (OJT) has the best results for an organization, because specific and new skills are required to keep up in product design, special techniques, customer´s needs, ways of use of machinery, and working methods.
7. The aim of leadership purpose is to guide the team to perform a better job. What steps or mitigation do the company have in place?
8. Drive out of fears, so that all the team can work efficient and effective for the organization. Fear is considered an issue for improvement. What systems are in place to address this issue?
9. Break down silos means that all the divisions must work together. Do not allow walls to rise up between departments, because these subdivisions will end in different views and strategies that might be different than the ones established by the top management.
10. Eliminate slogans and targets for the team that incorporate zero defects and levels of productivity. This kind of exhortation can create unpleasant and adversarial feeling within the work force, resulting in low productivity and quality. Do you practice this in your company?
11. Eliminate arbitrary numerical goals, instead incorporate all the company division´s to take suitable decisions that drive positive and achievable results. What is your company view on this?
12. The best results occur when implementing annual ratings according to organizations structure and goals. When does your organization do this?

13. How does the organization incorporate a self-improvement program of education for the organization?
14. Does the company involve all workers in the transformation? Is not enough for the top management and C-suites, but all levels, to clearly defines the strategy to follow and take actions to accomplish the transformation.

Appendix B: Interview Protocol

Interview: Developing a Framework for Supply Chain Management Disruptions in India. The face-to-face interview begins with the introduction and overview of the research question.

A. Will advise the participants how important is the time they are giving me and thanking them for participating in the study.
B. I will remind the participants that the conversation we will have will remain confidential.
C. Will present a summary of the research subject, along of the importance of the consent form they need to sign as protocol.
D. The interview will last between 30 to 60 minutes to get answers to 9 semi structured questions and 14 survey questions.
E. After getting the responses will thank the interviewee sincerely for participating in the study.

Appendix C: Informed Consent Form

INFORMED CONSENT FOR INTERVIEW

DEVELOPING A FRAMEWORK FOR SUPPLY CHAIN MANAGEMENT DISRUPTIONS IN INDIAN AUTOMOTIVE INDUSTRY

I, …… agree to be interviewed for the research which will be conducted by **Samuel J. Ferreira De Souza,** a doctorate student at the Swiss School of Business and Management, Geneva, Switzerland.

I certify that I have been told of the confidentiality of information collected for this research and the anonymity of my participation; that I have been given satisfactory answers to my inquiries concerning research procedures and other matters; and that I have been advised that I am free to withdraw my consent and to discontinue participation in the research or activity at any time without prejudice.

I agree to participate in one or more electronically recorded interviews for this research. I understand that such interviews and related materials will be kept completely anonymous and that the results of this study may be published in any form that may serve its best. I agree that any information obtained from this research may be used in any way thought best for this study.

…… ……

Signature of Interviewee **Date**