

The Automotive Industry and How the Supply Chain Is Still Affected by The Crisis

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Abstract

The Global automobile sector has been on exponential growth since 2008. A similar change has also been noted in the field of ICT, which as a result, has been the main factor in the growth and improvement of the automotive industry. These developments in ICT and changes in the automotive industry play a significant role in ensuring driver safety and comfort. In this context, the main research subjects in academic and industrial sectors include the different newly invented systems in the automotive industry, such as introducing a method to determine the traffic situation and driver behavior. The research also focused more on the industrial analysis of the automobile sector and the industry's social and economic factors.

Key words: automotive, supply chain, crisis

J.E.L. classification: O00

1. Introduction

The research aimed to study how the supply chain is still affected by the various crises the automotive industry faces. It was also aimed at identifying possible problems that could have affected the supply chain. Furthermore, the study also looked at potential impacts that the change in the supply chain could have imposed on the manufacturers and the consumers of automotive products

2. Theoretical background

The automotive sector is a broad field full of different life-changing scientific inventions. It is also one field that requires the services of various individuals performing other functions concurrently, such as the ICT team and the automotive engineers. Being such a complicated science-based sector, there are different scientific literature associated with the field that anyone not in the area may find challenging to understand and interpret (Ciardelli et al., 2011). Therefore, it is also essential to review this hard-to-understand literature and break them down in a way that can easily be understood for the research. First, it is crucial to understand the introduction and overview of the automotive sector. After that, the definitions of the different system architectures, the physical and logical architectures, should also be understood (Ciardelli et al., 2011). It is also key that the research defines the various current and emerging trends in the automotive industry, the governmental policies set to regulate the industry's activities, and the various potential risks that may result during the production and supply of automotive products.

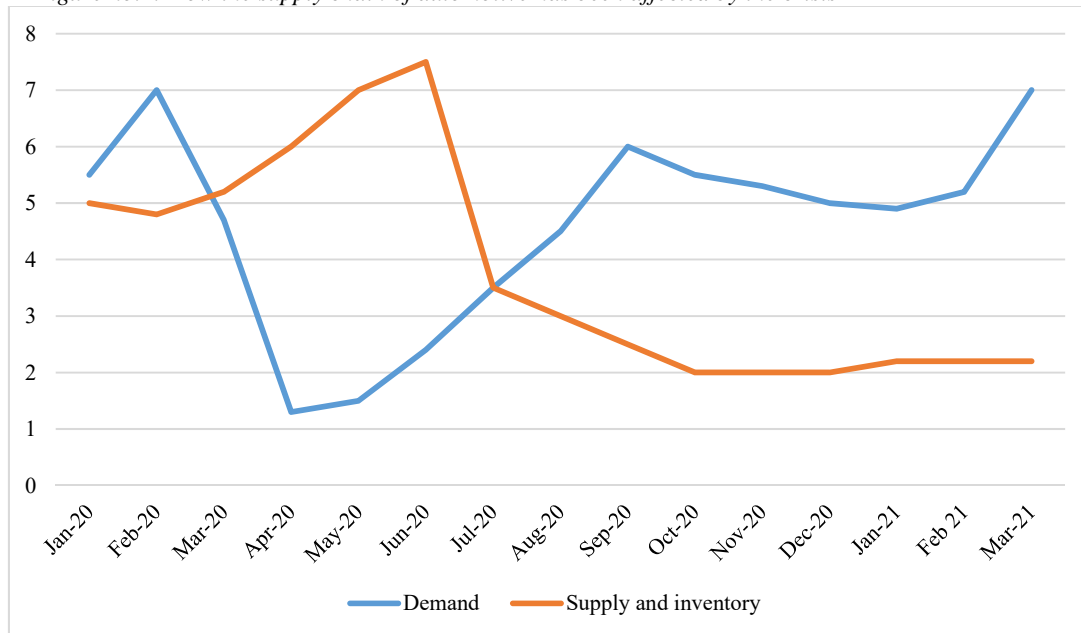
3. Research methodology

The research paper's authors employed different research methodologies to understand and analyze the information collected from various sources. Scholarly articles, journals, and newspapers retrieved from scholarly sites such as google scholar, online journal databases, Scopus, ScienceDirect, Emerald, and Wiley Interscience were of great help (Sabbagh et al., 2016). These databases provide various helpful information and data across all fields whose accuracy can be trusted. I have obtained quickly the information and data this analysis required. Moreover, I had a

look on the official websites of various automotive manufacturers. The official websites were updated on time, so I could find out relevant information about the challenges they have met.

Furthermore, tackling such scientific research requires and adopts a specific research methodology. The main methods used in scientific research include quantitative analysis, qualitative research, and mixed methods, a combination of qualitative and quantitative research methodologies (Sabbagh et al., 2016). These research methods are procedures since they require a logical step-by-step approach before concluding. The qualitative approach needs the researcher to understand how people convert their perceptions, evaluate their experience, and build their space. On the other hand, the quantitative approach uses numeric data since it relies on samples and specific data collection instruments. The mixed method has gained popularity in different fields over time due to its implications in applied research and its ability to respond to research questions comprehensively. For instance, analysis to determine the impact of covid-19 pandemic led to the generation of the graph below (Schliebener, 2021).

Figure no.1: How the supply chain of automotive has been affected by the crisis



Source: (Schliebener, 2021)

4. Findings

The data and information collected for this particular research study were obtained from good sources and are deemed correct. The various journals, newspapers, and other documents referred to in the data collection stage of the research were peer-reviewed and cited by different people hence upholding the validity and accuracy of the sources. The research was also conducted following the law and regulations to ensure no mistakes were made during the exercise. Hence, the study and the findings are authentic.

The concept of Supply chain management emerged in the 1980s in literature by Weber and Oliver. The two highlighted the relationship between other operational functions and logistics. The idea has developed and gained momentum over time due to globalization, diversifying products, and competition in the market (Schliebener & Nickel, 2021). The supply chain is essential in the automotive industry as it ensures a steady flow of information, material, and cash to ensure no supply shortage and the resulting expensive production stoppage. The supply chain is thus an essential element of the automotive sector. However, the automotive industry has fallen victim to the impacts of the supply shortage due to different challenges and unpreventable situations which have significantly affected the industry. Any adverse effect on the supply chain may result in substantial financial losses and economic crises (Isac, 2010).

Despite the remarkable growth in the automotive sector, the industry has faced a series of challenges. These challenges hinder the automotive industry's improvement and block the industry's success to a certain extent. One of the most common weaknesses of the industry is the dependent growth rate. Illustrations of how this affects the sector include; government regulations on the price of fuels and the validity of the registration period. Entrance of new vehicles into the market has also become a significant problem. This introduction of new automobiles has created a bargaining power that is also affecting the automotive industry due to constant competition.

The major crisis which has hit the automotive sector is the economic crisis. To begin with, it is costly to purchase raw materials and automobile spare parts. Companies spend millions of money procuring such raw materials and the assembly process. The industry also spends money on integrating new technologies, which change rapidly over a short duration (Schliebener & Nickel, 2021). Finally, the automotive sector employs many employees who are also paid huge salaries. All these are, however, important in ensuring that the industry keeps up with the dynamic customer needs and produces high-quality automobiles with the most advanced technologies integrated. The government also imposes heavy taxes on these industries on the imported raw materials and their final products.

The economic crisis has also prevented many countries and nations from producing their automobiles due to the high costs involved in the manufacturing process. Other factors, such as war, the ongoing conflict in Ukraine, and global pandemics, such as the covid-19 pandemic, are also factors accelerating the economic crisis affecting the sector (Carney, 2022). The research also revealed that the industry's supply chain had been significantly affected. The increasing financial constraints have hindered the continuous production of the automotive, which meets the ever-changing consumer preference and tastes. The effects on the supply chain also put the country depending on exporting automotive at risk of significant negative economic impacts.

Beginning with the conflict between Russia and Ukraine, the war has impacted many countries that depended on exports from the two conflicting nations. Consequently, the war has caused a drastic drop in the variety of the country's export products. Many European automobile manufacturers and spare part selling companies with factories in Ukraine have stopped their operations as a result of the war, thus reducing manufacturing activities. Most foreign factories in Ukraine have suffered dramatically from the unstable economic situation due to the war (Spitsin, 2018). For example, Volkswagen, Europe's largest auto manufacturer, has suspended some of its assembly activities due to the lack of parts manufactured in Ukraine, resulting in a drop in the supply chain of Volkswagen automobiles (Carney, 2022). Due to the disrupted supply chain, other automotive manufacturers such as Toyota, Hyundai, and BMW have also been closed.

Besides the conflict in Ukraine, the covid-19 pandemic also affected the automotive supply chain. China, South Korea, and Italy are known globally as giant automobile manufacturers (Carney, 2022). This, however, was not the case after the outbreak of the coronavirus pandemic in 2019. Unfortunately, China was the genesis of the deadly virus, which spread to other countries affecting them in many different ways. The Automotive sector was greatly affected since most industries are located in the quarantined areas of China, Italy, and South Korea. However, the industry did not die entirely. However, it gained little momentum in 2020 as various measures were implemented to curb the spread of the virus, though a drastic fall by a more significant margin in the supply chain was observed. The pandemic will, however, continue to affect the automotive supply chain. Experts, The Boston Consulting groups, and McKinsey approximate that it will take the car industry approximately two years to fully recover from the effects of the covid-19 (Carney, 2022).

The crises are damaging and hurting the growth rate of economies of countries like China and America, and Europe. The drop in income has also decreased the number of people purchasing automotive products. It forces the sellers to lower the prices of automotive products to accommodate the income level of the buyers (Schliebener & Nickel, 2021). This again has resulted in the company's significant losses, which are not easily revocable. The low-income level has also reduced the demand for automobiles as people tend to prioritize other essential needs for survival other than buying luxurious cars, which are secondary needs. The crises again have affected the labour market in the automobile sector. Due to the reduced supply chain (Pichler, 2021). Those individuals employed to help distribute the finished products to various global markets have lost their jobs since there is not much to be supplied to the said markets. The manufacturing and assembly teams have lost part of

their members as some are resigned from work due to low labor requirements due to decreased production.

Many automotive manufacturing countries are now coming up with new ways to ensure a reduction in the impacts of the crises on the industry. Some of the implementations that the manufacturers are putting in place include increasing the role of significant suppliers and evaluating the global chains in the automotive industry, among other strategies (Sturgeon, 2010). The governments of nations that rely majorly on automobile manufacturing as the primary source of foreign currency have also chipped in to provide financial support and reduce the taxes imposed on imported raw materials. Schools have also adopted a curriculum to educate the learners on the emerging technological trends and different ways to handle the various economic crises which may consequently affect the supply chain of automotive products (Schliebener, 2021).

5. Conclusions

The automotive sector is among the fast-growing manufacturing sectors in the world today. However, the industry also faces many challenges hindering its rapid growth from catering to ever-changing consumer preferences. The industry is stricken hard by various emerging crises, such as the recent covid-19 and the ongoing conflict between Russia and Ukraine. The problems have impacted the supply chain of automotive products in different ways, and many people have also lost their jobs due to the same. The supply shortage has also contributed significantly to the economic crisis affecting the sector. Some possible factors contributing to the decrease in the supply chain of automotive products include the reduction of consumer income, the effects of the war on the assembly plant, and inadequate and extremely expensive raw materials as a result of both the covid-19 and the Ukraine crisis.

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