

A STUDY ON IMPACT OF COVID ON AIR LOGISTICS

Submitted in partial fulfillment of the requirements for the award of

Master of Business Administration

by

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SCHOOL OF BUSINESS ADMINISTRATION

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

Accredited with Grade "A" by NAAC | 12B Status by UGC | Approved by AICTE
JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI - 600 119

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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **MURUGANANDHAM S 39410129** who carried out the project titled "**A study on impact of covid on air logistics**" under my supervision from January 2021 to March 2021.

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DECLARATION

I MURUGANANDHAM S 39410129 here by declare that the Project Report Entitled **A STUDY ON IMPACT OF COVID ON AIR LOGISTICS** done by me under the guidance of Dr.S.UMAMAHESHWARI, SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY, CHENNAI, is submitted in partial fulfillment of the requirements for the award of Master of Business Administration degree.

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ABSTRACT

Air transport industry has gradually increased its share of global passenger and freight traffic, and this trend has accelerated in the last 40 years. For the past, air freight sector offered limited services, with heavy reliance on several intermediaries and a significant dependence on air passenger operations. The sector can now be characterized as a sophisticated, innovative one, relying heavily on new electronic technologies, offering a wide range of transport and logistical products through dedicated specialist freight operators. With increasing emphasis on the globalization of trade and economic activity, air freight growth is expected to continue to outpace air passenger traffic growth. The air freight growth is expected to be greatest in the Asian markets the process of physical distribution of freight has become a highly sophisticated operation, with increasingly greater reliance being placed on the use of new technology to assist in the movement, storage, and tracking of consignments but transport is just one component in this logistics chain. In this paper, air freight sector is examined in terms of its structure, organization, its role in the supply chains the main trends in the recent period, constraints facing the sector and the future prospects in air-freight sector.

KEY WORDS: air freight organization, development, trends forecast, logistics services.

The article is devoted to prospective logistics technologies, which are known in all sectors. One such branches of the aviation industry that uses these technologies to enhance development among other sectors. The article analyzes and specifies logistics technologies used in aviation. Planning and organization of air transportation is applied particularly due to the international nature of this transport, when typically great distances have to be overcome meeting the economic and physiological requirements, asking for fast, convenient and safe services. It raises the need for unification of the basic requirements and regulations for the establishment and operation of an air carrier, air traffic control, passenger check-in, construction and operation of airports and other aviation-related activities.

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CHAPTER-I

INTRODUCTION

1.1 INTRODUCTION

Air cargo is growing in popularity as the medium of choice when it comes to shipping time sensitive goods, belongings documents and information from one place to another. Air cargo refers to the act of using an air carrier as the transport vessel for shipment purposes. The benefits of air cargo are the speed and convenience of using such a service. Air cargo can get your shipment to its overseas destination within a day in many instances and it has become an integral and important part of the global logistics network chain.

There are now plenty of airline that offer air cargo services. Generally these airlines are dedicated to air cargo transport, however, a number of commercial passenger airlines have separate divisions offering cargo services. Some of these air cargo companies are in actuality feeder services for larger express delivery companies and merely work under contracts for the larger businesses.

Using air cargo can be a tricky question in many people minds. After all there are a number of different shipping options when it comes to cargo. The determining factors for many businesses and individuals is time sensitivity, the fragility of the budget. While other forms of shipping are slow and cost efficient, air cargo is more expensive given its expediency. If you are looking to accompany the goods as they are specially equipped to carry passengers as well as merchandise.

When looking to send a shipment overseas using air cargo, most businesses and individuals to help them deal with the logistics and paper work involved with the process. Although you can always book the entire shipment by yourself, there are so many intricacies involved in the shipment of goods that it is best to retain the services of either a freight forwarder or arrange to have our goods sent by a big name delivery service. Among the things that you will also have to arrange for the person receiving the goods at the final destination to receive them either by picking it up themselves or

paying for a third party to deliver it. Many larger air cargo companies will offer freight forwarding services for smaller shipments and deliveries, but if you are planning on shipping large quantities of goods or you are planning the removal of an entire house then you are better off hiring a freight forwarder to help you with the logistics planning of your shipment.

Finding an air cargo supplier is not too complicated thanks to a slew of highly visible and well established businesses that offer air freight services. Continue reading to get a better understanding of how air cargo shipments work, how they can best be used to suit your needs and what you can expect from such services. We have also provided a glossary of commonly used terms and selected articles that may be of interest to you.

Air freight is used by many industries to fulfil their transportation and supply chain management needs. Take manufacturing, for example : it doesn't just rely on the benefits of air freight for movement of finished goods but also for components, which represent a substantial portion of cross border trade.

Epidemic and pandemic outbreaks ,such as the dengue fever the swine influenza the avian flu ,and recently the covid-19 virus have a severe and versatile impact on the society ,as well as the economy .aspiring to slow down the spread of the highly contagious covid-19virus government around the world decided to impose several temporary restrictions the restrictions include

- Contact restrictions and the distance rule
- Temporary closure of trade and service companies ,as well as ,gastronomy ,hotel business and tourism facilities
- Travel restrictions within a country and especially for non –essential travel
- The obligation to wear a mouth –and-nose cover when using public transport

These measures have a significant impact on the global economy and consequently ,on the transportation of goods ,passengers ,as well as information .in today increasingly globalized world ,functioning supply chains are a major

success for economy prosperity enabled by freight transportation.

They are the goods transported by aircraft. It may contain anything ranging from mails to freight. There are different types of transportation such as passenger, cargo and combi.

Spare volume not used for luggage of commuters is used in the passenger aircraft. Cargo can also be transported in the passenger cabin as hand-carry by an “on-board courier”. Air transport plays a huge role in logistics and trade, managing and controlling the flow of goods, information, and energy.

Air cargo services is air logistics company has been established in 2007. It is delhi based company we provide reliable air cargo and pick up and deliver the package from every corner you desire.

Air Cargo Logistics play a vital role in the economic development of a nation. Airlines, Air Cargo terminal operators, Ground Handling service providers, Integrated Express Service Providers, Forwarders, Domestic Cargo Transport service providers and Custom House Agents are the key players in the entire Air Cargo supply chain. Thus the Air Cargo industry presents a wide variety of service providers coming together to move goods both domestically and internationally with a single minded purpose of faster and efficient delivery. These business entities in Air Cargo logistics industry in turn interact with a number of cross-border regulatory agencies the principal among them is the Customs establishment. Speedier services in the Air Cargo supply chain facilitate large number of business entities to become more competitive. Globally, more than one – third of the value of goods traded internationally is transported by air and therefore Air Cargo industry is considered as a barometer of Global Economic Health. From the point of view of Airline industry, Air Cargo Services contribute near about 20% of their revenue. India’s international Air Trade to GDP ratio has doubled from 4% to 8% in the last twenty years. Keeping in view the significance of Air Cargo to the economic growth of the country, it was decided to set up a Working Group on Air Cargo / Express Service Industry in the Ministry of Civil Aviation to recommend policy initiatives to address important issues considering the long term perspective and future growth potential in India. The Working Group was chaired by Economic

Adviser, Ministry of Civil Aviation and represented by members from all the key stakeholders of the Air Cargo Logistics industry in India. I have had the pleasure of chairing two sessions of the Working Group meetings myself. The Working Group in fact brought together all the key stakeholders of the industry in one platform to discuss and deliberate the challenges of growth opportunities in the context of faster pace of economic growth in India and to identify areas that require further improvement. Forecast of Air Cargo volume for India made in the report suggests that the domestic and international Air Cargo throughput is expected to grow by eight to ten times the present level in the next twenty years. Catering to the growth of this magnitude would involve expansion of infrastructure facilities, simplification of procedures and adoption of Information Technology / Automation besides development of Human Resources in the sector. Having gone through seven meetings since its formation and a number of other meetings by the sub groups under the Working Group and field visits to Air Cargo terminals, the Working Group has now come out with a comprehensive report. I am aware that two drafts of the report were circulated earlier to all the members to seek their suggestions / comments. These

The strong relationship between growth in international trade and logistics infrastructure is widely acknowledged. Growth in trade induced requirement for supporting infrastructure while availability of infrastructure at competitive rates promotes trade and improve global competitiveness of the country. Availability of infrastructure is also a key determinant of foreign direct investment (FDI) inflows. In developing countries like India an efficient logistics infrastructure can reduce cost of transportation which in turn can contribute directly to global competitiveness of the country. Efficient logistics industry acts as an economic catalyst by opening up new market opportunities, moving products and services with speed and efficiency. The demand for air cargo transportation has increased significantly over the last few years, because product life cycles have shortened and demand for rapid delivery has increased. Changing business models such as Just- in-Time Manufacturing and Global out sourcing models have contributed to the rapid growth of air cargo logistics business. In such a changing business environment, where speed-to- market is a

competitive imperative, movement of inventory is no longer viewed as a compartmentalized process. Rather, the sourcing of inputs, parts and components and the delivery of final product are all viewed as a continuous value-adding chain. Efficient supply chain management therefore offers significant benefits including lower inventory and intermediary costs; and simplicity in order placement, delivery and management of suppliers and customers. These benefits directly contribute to making businesses more competitive. Evidence from the 2007 and 2010 Logistics Performance Index (LPI) indicates that, for countries at the same level of per capita income, those with the best logistics performance experience an additional growth of 1% in Gross Domestic Product and 2% in trade. These findings are especially relevant today, as developing countries need to invest in better trade logistics to emerge in a stronger and more competitive position. India's LPI rank in 2010 was 47 down from 39 in LPI 2007. In comparison to India, China's 2010 LPI rank was 27 and Brazil was ranked at 411 . This should be a matter of grave concern to India.

Air cargo represents about 10% of the airline industry's revenues. As 35% of the value of goods traded internationally is transported by air, air cargo is a barometer of global economic health. The fortunes of the transport and logistics industry are closely connected to the economic cycle. When economic activity is buoyant, demand for transport and logistics services is equally strong. Consumer and business demand for goods and services inevitably translates into higher demand for transport and logistics services. Indian Economy is on the higher trajectory of growth. Forecasts suggest that the growth prospects are likely to continue for more than two decades. That means, requirements for augmentation of infrastructure facilities in the logistics space to cater to the growing needs of the trade and industry will be immense. Opportunity cost of not meeting such requirements in a timely manner is very high. While improving efficiency is a continuous process, international bench marks help us in assessing the current state of affairs. Based on best practices, and based on concept of proof, what needs to be done in the Air Cargo sector, by whom and how, could be identified for preparing a road map for implementation This is the primary focus of this report which is a culmination of discussions in a large number of meetings of the Working Group and the Sub-groups formed on various issues,

feedback received from trade/industry and other stakeholders. Air Cargo Logistics Operations. The air cargo industry incorporates an industrial supply chain, which includes airlines, customs, ground services, air cargo forwarders, brokers, domestic transportation, air cargo terminals, distribution centers and integrated international express services. Of these, air cargo terminals are critical in the air cargo supply chain. A typical air cargo terminal has three main users – airlines, air cargo terminal operators and forwarders/cargo-agents who are the principal contributors to the revenue of air cargo terminals.

The demand for air freight is limited by cost, typically priced 4–5 times that of road transport and 12–16 times that of sea transport. These values differ from country to country, season to season and from product to product and for different volumes also. Cargo shipped by air thus have high values per unit or are very time-sensitive, such as documents, pharmaceuticals, fashion garments, production samples, electronics consumer goods, and perishable agricultural and seafood products. They also include some inputs to meet just-in-time production and emergency shipments of spare parts. As the volume of air freight grows, there is a natural progression from passenger aircraft to chartered cargo planes of increasing size and ultimately to scheduled cargo services.

There is a significant untapped potential for air-cargo in India. An indication of the same can be gauged from the fact that the total air-cargo volume of 2.3 million MT handled in FY-11 by all Indian airports put together is less than that handled by individual airports like Hong Kong, Memphis, Shanghai, Incheon, Anchorage and Paris. Just-in-time manufacturing coupled with global outsourcing business model will continue to push demand for Air cargo business in India. Faster movement of raw materials, components, parts and spares help firms in maintaining lower inventories. Growth of passenger fleets would provide ample belly capacity for cargo movement both in the domestic and international segment. Airbus Global Market Forecast (2010 -2029), indicates that the passenger fleet in service at 322 (passenger aircraft with over 100 seats) in December 2010 is expected to go up by three times by 2029. Express industry is certain to grow many folds in future as they provide end to end

solutions, which are fast, reliable, on demand, integrated and door to door and can be tracked and controlled throughout the journey¹⁹ GDP growth of China and India are forecast to grow at an average of 7-9% over the next 5 years and thus China and India could be at the epicenter of supply / redistribution in the region. Sources of optimism also arise out of the fact that Free Trade Agreement concluded by India with south-east Asian countries like Japan, Malaysia and South Korea and the Likely India-EU FTA are expected to give a big boost to improve trade between these regions. Government of India's goal is to double exports from \$225 Billion to \$450 Billion by 2014 and the National Manufacturing Policy 2011 announced by the Ministry of Industry and Commerce, GoI aims to enhance share of manufacturing in GDP to 25% by 2020 from current level of 15%.

Trans shipment through put at Indian airports is assumed to grow at a much higher rate than what it is now based on a number of factors. Transshipment cargo constitutes as high as 60-70% of total volumes handled by some of leading airports tends to be negligible for Indian airports. A significant potential lies for the Indian airports to become transshipment hub. Given its geographic location, India is well placed to capitalize on this opportunity. While neighboring countries of India, particularly Bangladesh and Sri Lanka, have sizeable international trade with Europe and US, they have very limited direct connectivity to US and Europe. India thus has an opportunity to emerge as the preferred transshipment hub for these neighboring countries to begin with. It is expected that the barriers to growth in transshipment which exist today in the form of process and procedural hurdles will be removed shortly (recommendations to that effect are given in this report). Further, security regulations are becoming stringent in developed regions such as Europe and U.S.A. in so far as air freight is concerned. It is our understanding that India is and it will continue to be capable of complying with such regulations which itself will place India at an advantageous position when it comes to air cargo operations in the region. Also, India has a large scope for multi-modal connectivity because of its vast coast line with access to modern ports in the region. As India becomes a key node in the network of most global airlines, the transshipment service would offer a significant

market potential. If the growth potential of this segment is appropriately harnessed, Indian airports can become cargo hubs of the region.

Logistics refers to the overall process of managing how resources are acquired, stored, and transported to their final destination. Logistics management involves identifying prospective distributors and suppliers and determining their effectiveness and accessibility. Logistics managers are referred to as logisticians.

Over the past two decades air freight services has witnessed a significant growth due to the growing demand from consumers and industries for speedy delivery. Transport system is the most important economic activity among the components of business logistics systems. It is now no longer regarded merely as a luxury commodity but rather a contributor to social and economic benefits. Around one third to two thirds of the expenses of enterprises' logistics costs are spent on transportation. According to the investigation of National Council of Physical Distribution Management (NCPDM) in 1982 (Chang, 1988), the cost of transportation, on average, accounted for 6.5% of market revenue and 44% of logistics costs. Air Freight is a phenomenal industry and plays a vital role in modern logistics because it offers a highly integrated and comprehensive facility with safe, fast, reliable, convenient and highly efficient services. When compared to land and sea transport the air transportation industry is relatively younger and has been a tremendous enabler for economic development to societies. The reason is because air freight and integrated air express plays a critical role to time-based strategy – the primary challenge for the world's most-progressive firms. In addition it offers suppliers and customers more flexibility, and allow for expedited shipments within time-constrained environments (Enarsson, 2006). The 'speed' provided by air freight services can be a valuable attribute in today's time-based competition by connecting upstream suppliers, focal firms and downstream consumers in networks of complex international supply chains and helps to develop internal and external trade. Air logistics pays close attention to customer-centric

approach and offers quality freight transportation services striving to achieve customer's demand. The air freight sector as an industry worldwide reached a value of almost 125 billion US dollars in 2012, and is forecast to rise to almost 160 billion by 2016. Ran Wei (2011) thinks that air freight does not contain production of goods, but based on modern information, air logistics provides the whole supply chain to save transit time of delivery, fasten capital turnover, which brings about the integration of goods flow, information flow, capital flow and personnel flow. Even though air freight services accounts only for 1 percent of the total world trade in terms of weight, in terms of value it transports 40 percent of the total world trade (David and Stewart 2010; Zhang and Zhang 2002). As we discussed above one of the most important attributes of air freight services is its speed. The main objective of the article is to assess the importance of air freight services to UAE's economy. As a case study the author has taken Emirates Sky cargo / Airlines and began a systematic investigation to develop a deep understanding of the entire air cargo transport system and to examine the challenges of air freight services in Dubai's goods movement and to analyze the air cargo industry's planning and operational issues.

1.2 INDUSTRY PROFILE

The air freight industry is a vital part of the broader logistics sector and an important element of supply chain management for companies in a wide variety of industries. The international air transport association (IATA) Recently forecast a rise in total air cargo carried in 2018 to 62.5 million tones moved last year. that represents less than 1% of global trade by volume, but over 35% by value. The expected value of goods transported by air is expected to exceed \$6.2 trillion this year equivalent of the worlds GDP.

HISTORY OF THE AIR FREIGHT INDUSTRY AND EVOLUATION OF SERVICES

The first cargo carried by air was in November 1910, when bolts of silk were transported by aeroplane from Dayton to Columbus ohio. This was less than seven years after the weight brothers historic first powered flight .

Often express cargo and general cargo require special handling facilities for

temperature sensitive cargo, pharmaceuticals, perishables and Dangerous Goods. Dedicated and appropriate facilities are not available at all airports and hence there is a need for clear guidelines regarding the minimum infrastructure that an airport must mandatorily have for handling such shipments. The same may also be based on the demand based on the location of different key industries which require special infrastructure e.g. clinical research, agri based exports, high tech and electronic equipment etc. Special areas for ample storage and handling of temperature sensitive cargo such as separate cold storage space for pharmaceuticals and perishable food items as well as for Dangerous Goods will have to be earmarked.

The composition of trade in fresh agro-food products is shifting towards horticultural products, fruits and vegetables, fish, and spices which have led to an increase in demand for airfreight to meet the delivery times. The quality of logistics is an essential element of competitive advantage. Cost is equally important and provides an advantage for countries that already have well-developed air freight routes, whether through scheduled freighters or space on passenger flights. Non-Resident Indian population living in Middle-East and in other parts of the world continues to source a large part of their food stuff requirements including native grown vegetables from India. Belly space available from the passenger aircrafts flying to these destinations provides an ideal opportunity for exporters of such items to supply the perishable items of food at competitive prices. However, what is important is to enable the growth of this trade by facilitating appropriate infrastructure for handling, storage and faster movement of these goods for exports in the cargo terminals. Cool chain processes effectively safeguard product quality and maximize shelf life, thereby enhancing profitability

Air freight logistics is the shipment of goods via a chartered or scheduled air carrier. Air freight is a popular choice for many companies as it ensures passage for their goods to anywhere in the world that an aircraft can fly to and land. Goods transported by air have the advantage of being taken to their final destination at high speed which could prove advantageous if the shipment is time sensitive. For smaller and medium

sized companies, it allows them to participate in international trade in as an effective manner as larger companies. Furthermore, shipments that are transported via air carrier go through a higher level of security than other methods which makes it one of the most secure ways to transport goods.

There are a few choices when it comes to organising an air freight delivery:

Consolidated Freight – Where one flight contains many shipments.

Back to back or Direct Services – Where a flight contains one single shipment.

Charter Services – Where an entire freight plane is chartered for a single air freight delivery.

These shipments will either be placed into the hold of a regular passenger jet or in a dedicated freight aircraft, which can hold huge amounts of cargo on one flight.

[How does air freight work?](#)

In a lot of cases, air freight is arranged by an experienced Freight Forwarding Agency. Freight Forwarders contract with a number of companies covering sea, air or road to transport goods on behalf of their clients. Although some Freight Forwarders have their own warehouses and vehicles, they aren't necessarily the ones to carry out the transportation. Usually, they are the experts that are able to lead on the logistics and arrangements that will enable a smooth process giving companies piece of mind that their goods will be delivered.

These are the general steps to receive shipment of your goods via air freight:

Choose an air freight company and negotiate a price to ship your goods.

The Freight Forwarder will arrange for your goods to be collected pre-packed or will arrange for the packing to be done prior to transportation.

The goods will be taken to the airport and go through Customs checks at the point of origin.

The goods are loaded onto the plane. If being delivered with a consolidated shipment, the plane will remain on the ground until it is filled with cargo which could take a few days.

On arrival at its destination, the shipment will go through another Customs inspection and will not be released into the country until all duty and taxes are paid.

The shipment is delivered to you as per the agreement with your freight forwarding

company.

The Advantages of Air Freight

There are a number of advantages for transporting goods by air. These include:

Efficiency – Air freight is quick, particularly if you use a direct service. You can expect goods to be at its intended destination within days of sending it whilst sea freight can take several weeks.

Good Value on Smaller Deliveries – Air freight is charged based on weight as opposed to volume which makes it more cost effective to send smaller deliveries via air freight than by sea.

More Options – Shipping companies are able to offer more options to the importer with air freight, including consols and direct routes.

Less Potential to Damage Shipment – Providing the goods are correctly packaged, air freight is usually a better way of shipping fragile items as damage is less likely compared to sea freight.

More Traceable – As flights are tracked, shipments are more easily traceable which can give businesses more peace of mind.

The Disadvantages of Air Freight

Depending on what exactly you're shipping and where you are shipping it to, air freight could potentially cause businesses some problems. Some of these include:

Expense – Using air freight can be a lot more expensive than sea freight, not just for the cost of delivery but for import duty and VAT. These are calculated as a percentage of the cost of the goods plus the cost of shipping

Logistical Restrictions – When using a consolidated freight shipment, the business will have to wait until the flight is full with other deliveries before it is sent. This can add time to the delivery with some flights only going once or twice a week to main destinations.

Transport Restrictions – Air freight is much stricter in what it is allowed to transport than sea freight. Hazardous materials such as explosives, gases, flammable or

radioactive items, toxic chemicals and strong magnets are among some of the items that are prohibited from being delivered by air freight.

Environmental Restrictions – Air freight is considered worse for the environment compared to shipping goods by sea.

A freight forwarder assists companies in the process of transporting goods from one place to another. They use the most cost-effective methods with a suitable shipping company to ensure that every point of the journey goes smoothly.

Freight forwarders contract with a number of companies covering sea, air or road to transport goods on behalf of their clients. Although some freight forwarders have their own warehouses and vehicles, they aren't necessarily the ones to carry out the transportation. Usually, they are the experts that are able to lead on the logistics and arrangements that will enable a smooth process giving companies piece of mind that their goods will be delivered.

Why do Businesses Use Freight Forwarders?

Freight forwarders are seen as a necessary extension to many businesses. Mistakes made in shipping processes can be costly and delay goods getting to the places they need to go.

The wealth of knowledge and expertise they have on the process of importing and exporting is invaluable to companies and saves them both time and money

Logistics is used more broadly to refer to the process of coordinating and moving resources – people, materials, inventory, and equipment – from one location to storage at the desired destination. The term logistics originated in the military, referring to the movement of equipment and supplies to troops in the field. Logistics and supply chain management are terms that are often used interchangeably, but they actually refer to two aspects of the process. Logistics refers to what happens within one company, including the purchase and delivery of raw materials, packaging, shipment, and transportation of goods to distributors, for example. While supply chain management refers to a larger network of outside organizations that work together to deliver products to customers, including vendors, transportation providers, call centers, warehouse providers, and others.

The management of logistics can involve some or all of the following business functions, including:

- Inbound transportation
- Outbound transportation
- Fleet management
- Warehousing
- Materials handling
- Order fulfillment
- Inventory management
- Demand planning

Although many small businesses focus on the design and production of their products and services to best meet customer needs, if those products cannot reach customers, the business will fail. That's the major role that logistics plays. But logistics also impacts other aspects of the business, too. The more efficiently raw materials can be purchased, transported, and stored until used, the more profitable the business can be. Coordinating resources to allow for timely delivery and use of materials can make or break a company. And on the customer side, if products cannot be produced and shipped in a timely manner, customer satisfaction can decline, also negatively impacting a company's profitability and long-term viability. Logistics refers to the overall process of managing how resources are acquired, stored, and transported to their final destination. Logistics management involves identifying prospective distributors and suppliers and determining their effectiveness and accessibility. Logistics managers are referred to as logisticians. "Logistics" was initially a military-based term used in reference to how military personnel obtained, stored, and moved equipment and supplies. The term is now used widely in the business sector, particularly by companies

in the manufacturing sectors, to refer to how resources are handled and moved along the supply chain

Understanding Logistics in Management and Business

In simple terms, the goal of logistics management is to have the right amount of a resource or input at the right time, getting it to the appropriate location in proper condition, and delivering it to the correct internal or external customer.

KEY TAKEAWAYS

- Logistics is the overall process of managing how resources are acquired, stored, and transported to their final destination.
- Poor logistics in a business can
- impact its bottom line.
- Logistics is now used widely in the business sector, particularly by companies in the manufacturing sectors, to refer to how resources are handled and moved along the supply chain.

For example, in the natural gas industry, logistics involves managing the pipelines, trucks, storage facilities, and distribution centers that handle oil as it is transformed along the supply chain. An efficient supply chain and effective logistical procedures are essential to reduce costs and to maintain and increase efficiency. Poor logistics lead to untimely deliveries, failure to meet the needs of clientele, and ultimately causes the business to suffer. The concept of business logistics has been transformed since the 1960s. The increasing intricacy of supplying companies with the materials and resources they need, along with the global expansion of supply chains, has led to a need for specialists known as supply chain logisticians. In the modern era, the technology boom and the complexity of logistics processes have spawned logistics management software and specialized logistics-focused firms that expedite the movement of resources along the supply chain. One reason large online retailers like Amazon have come to dominate the retail landscape is the

overall innovation and efficiency of their logistics along every link of the supply chain.

Manufacturing companies may choose to outsource the management of their logistics to specialists or manage logistics internally if it is cost-effective to do so.

Special Considerations:

The tasks for which a logistician is responsible vary depending on the business.

Primary responsibilities include overseeing and managing inventory by arranging for appropriate transportation and adequate storage for the inventory. A qualified logistician plans out the logistics process, coordinates the steps as inventory, and resources move along the supply chain. Specialized training in supply chain management and logistics are often core or elective courses, or even discrete programs of study, in business education. A business degree that emphasizes these skills—or in some cases, a technical degree in systems analysis or database management—is usually necessary to begin an often well-paid career as a logistician.

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1.2.1 NEW ENQUIRIES

- Home
- news
- flying
- high

17 APR 18 flying high the growth of the air freight industry 4 minutes to read

The air freight industry is a vital part of the broader logistics sector and an important element of supply chain management for companies in a wide variety of industries.

The international air transport association (IATA) recently forecast a right in total air cargo carried in 2018 to 62.5 million last year. The expected value of goods transport by air is expected to exceed \$6.2 trillion this year –equivalent to 7.4% of the world, GDP

HISTORY OF THE AIR FREIGHT INDUSTRY AND EVALUATION OF SERVICES

The first cargo carried by air was in November 1910, when bolts of silk were transported by aeroplane from Dayton to Columbus ohio. This was less than seven years after the Wright brothers historic first powered flight. By 1914, the United States had started regularly moving post by air with a more comprehensive airmail service in place by 1925. Within only six years domestic airmail contracts accounted for 85% of all US airline revenue, 14.8% came from passenger transport and, at that time, only 0.2% from freight transport. World War II brought an explosion in the use of aircraft with, for example 6,50,000 tons of cargo moved between India and China in the last four years of the conflict. The modern period of air freight as we know it began in the early seventies, when the launch of door-to-door express package services DHL and Federal Express coincided with the first wide body jet aircraft entering service.

1.2.2 AIR FREIGHT

THE WORLD'S BIGGEST PORTS

Today airports are vital transportation hubs not just for people, but also for air cargo. The world's busiest airports for cargo traffic include.

THE INTERNET, EXPRESS, SAME- DAY AND NEXT DAY PARCEL DELIVERY IMPACT ON AIR FREIGHT

Air freight grew in the 1990s due to the rise of express, same –day and next day

parcel delivery being offered by FedEx, UPS, DHL, TNT and more . since then ,it has been influenced by companies like eBay, Amazon and even Uber who provide next day delivery options.

Besides this, technology has also massively impacted the growth of the air freight industry. In 1992, FedEx provided software to its customers so they could track and trace their packages as well as the anticipated date and time of delivery. As such this real –time flight data and track and trace have massively increased visibility of the sorting, warehousing and package delivery of products.

SIZES OF PLANES AND HOW THEY HAVE CHANGED OVER TIME

The introduction of the boeing 747 in 1970 heralded a new era of wide-body jet aircraft that facilitated the modern age of air freight. When it made its first cargo flight in April 1972, te 747 alongside other wide –body craft such as the Douglas DC-10 was able to carry over two and a half times as much freight as comparable narrow -body planes at the time.

Demand for air freight continues to grow year on year and, based on projections that volumes will more than double by 2035, Boeing projects that the total fleet of freighters worldwide will grow from 1,770 to 3,010 over the same period, including both newly commissioned freighters and passenger-to-freighter conversions.

Air freight needs continue to be met by a variety of aircraft types including narrow-body aircraft ,and super –transporters such as the recently launched airbus beluga XL, which has a massive ecargo bay designed specifically to transport outside assembled aircraft components, such as wings and sections of fuselage.

Dublin, July 06 ,2020 (GLOBE NEWSWIRE)

The “Air Freight industry – Growth, Trends, and Forecast (2020-2025)” report has been added to Research And Maekets.com s offering.

While land and ship cargo transportation remain as favorable options, goods transport by air is considered as the quickest and the unhindered mode of transportation. According to the airline association, IATA, cargo volumes grew by 4.1% to 63.7 million metric ton, in 2018. However, the industry fore cost suggests that the number may decrease by 3.7%, to 65.9 million metric ton, in 2019.

In terms of freight-ton-kilometer(FTK), air freight recorded growth in march 2019 after

three months of year –on-year declines. However, the cargo sector is expected to benefit from lower costs, in 2019. Are expected to reach USD 116.1 billion in 2019, up from USD 109.8 billion in 2018.

Furthermore, cargo airlines plan to tie up with logistics service providers to create an efficient supply chain regarding freight forwarding, storage capability, and customers clearances , Air cargo continues to face significant challenges, such as fallen global economic activity and weakening consumer confidence, indicating further declines. However, the market is expected to grow due to factors, such as a strong demand for manufacturing exports and increased penetration of advanced technologies in the value chain. In addition, the overall growth rate in the e-commerce sector is expected to reinforce the growth prospects of the market studied, over the forecast period.

1.3 STATEMENT OF THE PROBLEM:

Governmental restrictions aspiring to slow down the spread of epidemic and pandemic outbreaks lead to impairments for economic operations, which impact transportation networks comprising the maritime ,rail, air, and trucking industries. witnessing a substantial increase in the number of infections in Germany ,the authorities have imposed drastic restrictions on everyday life restrictions on everyday life .resulting panic buying and increasing home consumption had versatile impacts on transport volume and freight capacity dynamics in germen food retail logistics

An outbreak of deadly covid-19 virus has not taken the lives of people but also severely crippled the economy .due to strict lockdown ,the manufacturing and logistics activities have been suspended ,and it has affected the demand and supply of various products as a result of restrictions imposed on shopkeepers and retailers .impacts of covid-19 are observed ubiquitously in every type of units from different sectors .In this study , a simulation model of the public distribution system(PDS) network is developed with three different scenarios to demonstrate description on the food supply chain. difficulties have been increased in matching supply and demand in

a vast network of PDS because of changing sceneries with the growth of infected cases and recovery. this paper also highlights the importance of a resilient supply chain during a pandemic .our proposed simulation model can help in developing a resilient and responsive food supply chain to match the varying demand ,and then further assist in providing decision –making support for rerouting the vehicles as per travel restrictions in areas paper has been summarized with significant highlights and including future research scope for developing a more robust food supply chain network.

1.4NEED FOR STUDY:

Airports are an essential element of the air transport system / carriage of passengers, baggage, cargo and mail in aircraft /. The role of logistics is to investigate and optimize the process in individual subsystems of the airport and to harmonize the operations, not only at airports.

The logistics sector has been one of the main forces pushing globalization. Dubai has thrived in its role as a regional hub, reaching the position of prominence

Over the past two decades air freight services has witnessed a significant growth due to the growing demand from consumers and industries for speedy delivery. Transport system is the most important economic activity among the components of business logistics systems. It is now no longer regarded merely as a luxury commodity but rather a contributor to social and economic benefits. Around one third to two thirds of the expenses of enterprises' logistics costs are spent on transportation. According to the investigation of National Council of Physical Distribution Management (NCPDM) in 1982 (Chang, 1988), the cost of transportation, on average, accounted for 6.5% of market revenue and 44% of logistics costs. Air Freight is a phenomenal industry and plays a vital role in modern logistics because it offers a highly integrated and comprehensive facility with safe, fast, reliable, convenient and highly efficient

services. When compared to land and sea transport the air transportation industry is relatively younger and has been a tremendous enabler for economic development to societies. The reason is because air freight and integrated air express plays a critical role to time-based strategy – the primary challenge for the world's most-progressive firms. In addition it offers suppliers and customers more flexibility, and allow for expedited shipments within time-constrained environments (Enarsson, 2006). The 'speed' provided by air freight services can be a valuable attribute in today's time-based competition by connecting upstream suppliers, focal firms and downstream consumers in networks of complex international supply chains and helps to develop internal and external trade. Air logistics pays close attention to customer-centric approach and offers quality freight transportation services striving to achieve customer's demand. The air freight sector as an industry worldwide reached a value of almost 125 billion US dollars in 2012, and is forecast to rise to almost 160 billion by 2016. Ran Wei (2011) thinks that air freight does not contain production of goods, but based on modern information, air logistics provides the whole supply chain to save transit time of delivery, fasten capital turnover, which brings about the integration of goods flow, information flow, capital flow and personnel flow. Even though air freight services accounts only for 1 percent of the total world trade in terms of weight, in terms of value it transports 40 percent of the total world trade (David and Stewart 2010; Zhang and Zhang 2002). As we discussed above one of the most important attributes of air freight services is its speed. The main objective of the article is to assess the importance of air freight services to UAE's economy. As a case study the author has taken Emirates Sky cargo / Airlines and began a systematic investigation to develop a deep understanding of the entire air cargo transport system and to examine the challenges of air freight services in Dubai's goods movement and to analyze the air cargo industry's planning and operational issues.

1.5 THE SCOP OF STUDTY:

It includes the management of the flow of products from the place of region to the place of consumption. This industry has several integrated process like material handling warehousing, packaging, transportation, shipping security, inventory

management, supply chain management, procurement, and customs service.

1.6 Objective of the study:

To facilitate the flow of materials across the supply chain of an enterprise so as to cost- effectively make the right product available at the right place, at the right time two polemic goals:-

1. Customer satisfaction and
2. Least cost

To be institution of global standing for making job ready professionals in industries of tomorrow. Fill the vacuum created due to lack of skilled manpower in logistics & aviation industry by imparting innovative and intellectually challenging education in the segment. Synthesize the highest academic standards with relevance to the need to present business and commercial policies collaborations with multiple organizations at national and international levels in areas of research, training, seminars and conferences. Represent the interests of professionals in the country ensuring that India does not lag behind in maintaining the internationally prescribed standards of logistics & aviation sector worldwide.

Governmental restrictions aspiring to slow down the spread of epidemic and pandemic outbreaks lead to impairments for economic operations which impact of transportation networks comparing the rail, air, and trucking industries. Witnessing a substantial increase in the number of infections in germane the authorities have imposed drastic restrictions on everyday life. resulting panic buying and increasing home consumption had versatile impacts on transport volume and freight capacity dynamics in germane food retail logistics.

Due to the lack of prior research on the effects of covid-19 on transport volume inertial logistics, as well as resulting implications, this article aspires to shed light on the phenomenon of changing volume and capacity dynamics in road haulage. This ratio was then examined concerning the number of covid-19 infections per day .the results of this study prove that the increasing freight volume for dry products in retail logistics does not depend on the duration of the covid-19 epidemic but on the

strength quantified through the total number of new infections per day. Transportation companies and food retail logistics for non-cooled transport capacity.

1.8 LIMITATIONS OF THE STUDY

It is relatively more expensive mode of transport. It is not suitable for transporting heavy and bulky goods. It is affected by adverse weather conditions. It is not suitable for short distance travel.

CHAPTER 2

REVIEW OF LITERATURE

2.1 REVIEW OF LITERATURE

Sube singh, Ramesh kumar, Rohit panchal, Manoj kumar an outbreak of deadly covid-19 virus has not taken the lives of people but also severely crippled the economy. Due to strict lockdown ,the manufacturing and logistics activities have been suspended ,and it has affected the demand and supply of various products as a result of restrictions imposed on shopkeepers and retailers .impacts of covid-19 are observed ubiquitously in every type of units from different sectors .In this study, a simulation model of the public distribution system(PDS)network is developed with three different scenarios to demonstrate disruptions in the food supply chain. Diffculties have been increased in matching supply and demand in a vast network of PDS because of changing scenarios with the growth of infected cases and recovery. This paper also highlights the importance of a resilient supply chain during a pandemic. Our proposed

simulation model can help in developing a resilient and responsive food supply chain to match the varying demand, and then further assist in providing decision-making support for rerouting the vehicles as per travel restrictions in areas. Paper has been summarized with significant highlights and including future research scope for developing a more robust food supply chain network.

Maciel M Queiroz, Dmitry Ivanov, Alexandre Dolgui, Samuel Fosso Wamba the coronavirus (covid-19) outbreak shows that pandemics and epidemics can seriously wreak havoc on supply chains around the globe. Humanitarian logistics literature has extensively studied epidemic impacts, however, there exists a research gap in understanding of pandemic impacts in commercial SCs guided by a structured literature review that collated a unique set of publications. The literature review findings suggest that influenza was the most visible epidemic outbreak reported, and distribution emerged as the most popular topic. the streamlining of the literature helps us to reveal several new research tensions and novel categorizations /classifications . Most centrally , we propose a framework for operations and supply chain management at the times of COVID -19 pandemic spanning six perspectives, adaptation ,digitalization ,preparedness, recovery, ripple effect, and sustainability.

Mohamed Grida, Rehab Mohamed , Abdel Nasser H Zaied supply chain operations are disrupted due to natural disasters or epidemics. In the recent period, the supply chain suffers from obstacles and major challenges that affect its stages directly due to the spread of the COVID-19 epidemic around the world .the impact of this epidemic on supply chain performance is clear in terms of supply ,demand ,or logistics. this epidemic is characterized by a rapid spread, so countries have taken preventive policies in an attempt to limit its spread. these policies are direct impacts on the performance of the supply

Abid haleem, Mohd Javaid , Raju Vaishya , SG Deshmukh coronavirus (COVID-19)endemic is growing exponentially in the whole world . Researchers ,technologists, doctors and other healthcare workers are working day and night on the development

of vaccine and medicine to control and treat this virus. SARS-CoV-2 is the name of the virus responsible for causing COVID-19 disease, which is highly infectious and lethal. With exponentially increasing infections, proportionate fatalities are being reported both from developed and under developed countries.

Kasilingam (1996) provided a concise review of the literature in the area of yield management and compared passenger yield management with cargo revenue management

Kasilingam (1997) proposed an optimization model for air cargo over booking by calculating the over booking levels for discrete and continuous probability distributions of capacity.

Popescu et al. (2006) presented an alternative nonparametric distribution estimation method to calculate the show-up rate for cargo booking and compared the proposed discrete distribution with the normal distribution by using real data from airlines. From an information system perspective,

Wang and Kao (2008) developed a fuzzy knowledge system to determine the overbooking level based on fuzzy reasoning, in which they expressed fuzzy decision rules in the form of triangular fuzzy numbers.

Qin et al. (2012) established a dynamic programming model to achieve dynamic space inventory control for air cargo with consideration of overbooking. Some important structure properties were elicited from their model.

Totamane et al. (2014) used the potluck problem approach to propose a multi-producer or multi-consumer solution for predicting the cargo demand in a route.

Amaruchkul et al. (2007) proposed a single flight Markov decision model to help airlines decide if a request from the freight forwarder should be accepted or rejected.

Amaruchkul and Lorchirachoonkul (2011) extended this model to multiple flights by using a dynamic programming model and then proposed two heuristics to solve it. As an improvement to Amaruchkul et al's model.

Hellermann et al (2013) proposed an options contract that considers the overbooking of forwarders. A numerical study further provided analysis about the impact of overbooking on contract parameters and profitability.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research design:

The coronavirus (COVID-19) Outbreak shows that pandemics and epidemics can seriously wreak havoc on supply chains (SC) around the globe. Humanitarian logistics literature has extensively studied epidemic impacts; however, there exists a research gap in understanding of pandemic impacts in commercial SCs. To progress in this direction, we present a systematic analysis of the impacts of epidemic outbreaks on SCs guided by a structured literature review that collated a unique set of publications. The literature review findings suggest that influenza was the most visible epidemic outbreak reported, and distribution emerged as the most popular topic. The streamlining of the literature helps us to reveal several new research tensions and novel categorizations/classifications. Most centrally, we propose a framework for

operations and supply chain management at the times of COVID-19 pandemic spanning six perspectives, i.e., adaptation, digitalization, preparedness, recovery, ripple effect, and sustainability. Utilizing the outcomes of our analysis, we tease out a series of open research question that would not be observed otherwise. our study on also emphasizes the need and offers directions to advance the literature on the impacts of the epidemic outbreaks on SCs framing a research agenda for scholars and practitioners working on this emerging research stream.

Coronavirus (COVID-19) endemic is growing exponentially in the whole world .researchers , teachnologists, doctors and other healthcare workers are working day and night on the development of vaccine and medicinesto controland treat this virus .SARS-CoV-2 is the name of virus responsibility for causing infections ,proportionate fatalities are being reported both from developed countries. as of today ,more than one million peple.

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Logistics technology include aviation in the planning, organization, administrative control and enforcement operations in air cargo supply chain. These individual components are connected to the carriage of cargo in collaboration with intermediaries of air freight, airports, airlines and air traffic services.

Logistics technology based on the interaction of among the various subsystems of the logistics chain. The momentum of logistics technologies is usually based on production, but it to be controlled by and market needs and options. Thus, market affects production, but this binding also applies as a feedback - i.e. production affects the market. This interaction affects the choice of logistics technology and vice versa, logistics technology can affect the connection between production and market .

Selection of logistics technology

The design and selection of appropriate technology, logistics must be based on the following facts

- a) The trend of the ratio of total logistics costs to the manufacturing costs for final products has been decreasing. It is the result of reducing and optimizing inventory and the transport processes.
- b) The requirements of the transport market in the small, precise and frequent deliveries, which results in increased use of automated handling, transport and information systems.

- c) The requirements for improving the quality of services represent a burden on infrastructure that will be addressed by regulatory policies, also with regard to ecological load on the environment.
- d) Manufacturing companies are increasingly involved in the development of logistics chains.
- e) Carriers are becoming subcontractors transport service operators, who organize and carry out services in the transport chain.
- f) Quality and potential of the infrastructure greatly influence the formation of logistic chain and selection of logistics technology. Due to the integration of Europe there arises the need to deal with the quality of infrastructure in the context of Trans-European Transport Network.

The design of logistics technology

System design of logistics technologies should be performed in steps as follows:

- a) The analysis by logistic structures, with object in particular:
General trends of logistics performance in the economic environment. Driving forces and factors that lead to the logistic. Factors affecting the differences in logistics performance by sectors and in terms of time. Adaptability of individual subsystems (production, trade, transport, information) of logistics requirements.
- b) Analysis of economic interactions – focused on economic growth, trade and structural consequences of the introduction of new logistics technologies.
- c) Social space interaction - impact on employment, changes in the structure of professional qualifications and all that with respect to the development of the region.

The design and subsequent implementation of appropriate technology, logistics, or a combination must

take into account the specific economic conditions of the environment, in addition to their own understanding of their functions. Further, one should also be aware of material flows, labor flows and information. All decision making processes make up

and framework in the logistics system are of crucial importance to the effectiveness and efficiency of all processes of non-productive nature.

The most commonly used logistics technologies Logistics technologies are used in most of these

concepts:

a) The concept of "Just in Time" (JIT) - (just in time delivery), means radical reduction of storage and inventory by exactly functioning transport (reduction of storage - not eliminating it!). A system based on small volumes of supplies of high frequency and high time reliability at a suitable geographical spread of sites of production and consumption.

b) The concept of "sold earlier than made" - through production management, rapid transport and orders made by means of rapid communication, your order can be classified primarily in the logistics chain. This will completely change the role of businesses and warehouses. Businesses assume the role of mediators without stocking, and the physical flow of goods can be routed directly from producer to consumer. The concept requires transport infrastructure cope with small load currents with greater frequency when operating a large area.

c) The concept of computer integrated manufacturing to produce to order and communication systems also allow contracting production. Logistics chains are the result may be extended by a fine of up to networks that have high demands on information system.

d) The concept of integrated warehousing and transportation terminals deployed along the routes.

Similarly as in the of JIT concept, the criterion of optimization is the reduction of overall costs, and generally increase in the cost of transport at the expense of far

more substantial reduction of the cost of maintaining the inventory, storage and handling systems.

e) The concept of vertical integration of logistics management. In this concept, traffic becomes an integral part of the transformation process of production. Information systems and logistics coordination at a higher level of management will optimize the transport chain.

f) The concept of "paperless transactions" means that most documents will be replaced by communication via the computer network. This concept simplifies transport (especially in combined transport systems), the transmission tariff, tracking shipments, booking space for the shipment, payment and shipping etc. Implementation of the concept results in the reduction of human labour and logistics costs in the transport subsystem and forwarding services.

g) The concept of a memory control and traffic management is a concept that is based on the development and implementation of themes. The concept represents an automatic transmission of information about vehicles, containers and shipments based on identity cards, as well as automatic reading of data from relevant documents.

h) The concept of "computerized transportation" is a technology of network planning, capacity, loading and routes, which will increase the use of mobile means of transport at optimal load of transport routes.

i) The concept of transport is assumed in combination with other concepts, eg. JIT, or the concept of centralized warehouses, optimization of the organization in

order to minimize transport costs. It can be divided into a system searching for the optimal combination of modes of transport and a system of optimal use of vehicles in the organization of transportation.

j) The concept of transportation in the sphere of production is designed to optimize inter-operational and technological services in the manufacturing process.

Logistics activities In developing the logistics chains, i.e. when coordinating, linking and optimizing of material flow from the point of manufacture to the point of consumption, it is necessary to provide a range of activities.

3.2 SAMPLING TECHNIQUE

The method of sampling adopted to conduct survey is convenience sampling method.

3.3 SOURCE OF DATA

To source of data collection are namely primary and secondary

3.3.1 PRIMARY DATA:

The primary data are those which are collected a fresh and for the first time and thus happens to be original in character. The primary data is obtained from questionnaire.

3.3.2 SECONDARY DATA:

Secondary data are collected from books and internet.

3.4 STRUCTURE OF QUESTIONNAIRE:

A comprehensive questionnaire covering all aspects of the organization function was drawn and used in this study. The questionnaire comprised multiple choices and closed ended questions.

3.5 SAMPLE SIZE:

A sample random sample size is 124

The sample random sample is a part of sampling technique in which each sample has been equal probability has being chosen.

3.5.1 POPULATION

The population is all over pallavaram in totaling 1.74 lakhs members will be consisting of retired person of 5,250 members.

3.6 PERIOD OF STUDY:

The study covers from December 2020 to February 2021 for 3 months.

3.7 ANALYTICAL TOOLS:

For the purpose of analysis anova

CHAPTER-4

DATA ANALYSIS AND INTERPRETATION

4.1 PERCENTAGE ANALYSIS

TABLE 4.1.1 GENDER OF THE RESPONDENTS:

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
-------------	-------------------	------------

MALE	96	83.5%
FEMALE	28	16.5%
TOTAL	124	100%

SOURCE: Primary Data

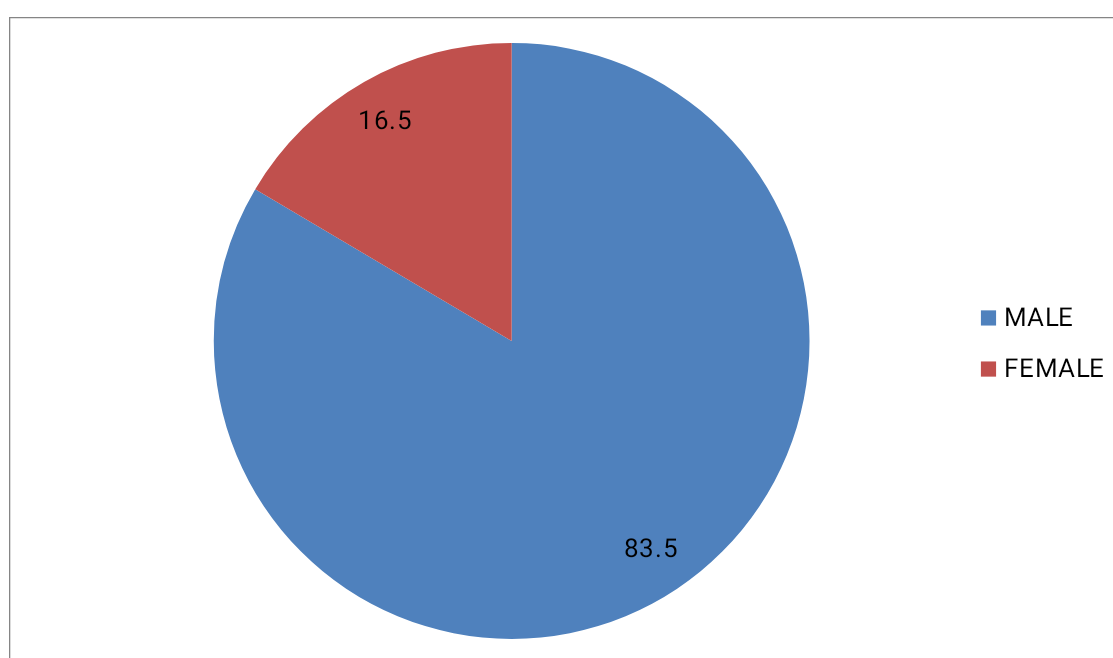


CHART 4.1.1 Gender of the respondents

INTERPRETATION:

From the above table it is interpreted that the number of male respondents is 83.5% and female Respondents 16.5%.

Inference:

The Majority of 83.5% respondents is male

Table 4.1.2: AGE of the respondents

PARTICULARS	NO.OF. RESPONDENTS	PERCENTAGE
20-30	62	50%
30-40	39	27.6%
40-50	15	8.6%
50 ABOVE	8	13.8%
TOTAL	124	100%

Source : Primary data

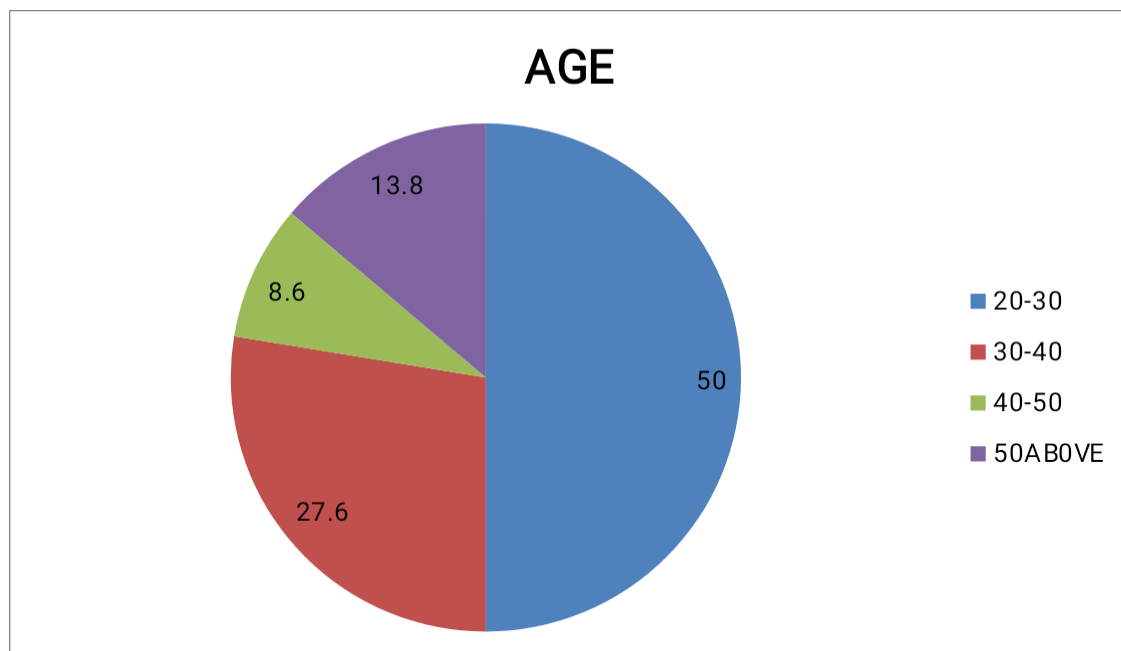


Chart 4.1.2 age of the respondents

INTERPRETATION:

From the above table is interpreted that the number of respondents between 20-30 is the 50%, 30-40 is 27.6%, 40-50 is the 8.6% and 50 above is 13.8.

Inference:

The majority of 50% respondents are 20-30

TABLE 4.1.3 MARTIAL STATUS

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
MARRIED	56	39.4%
UNMARRIED	68	60.6%
TOTAL	124	100%

SOURCE: PRIMARY DATA

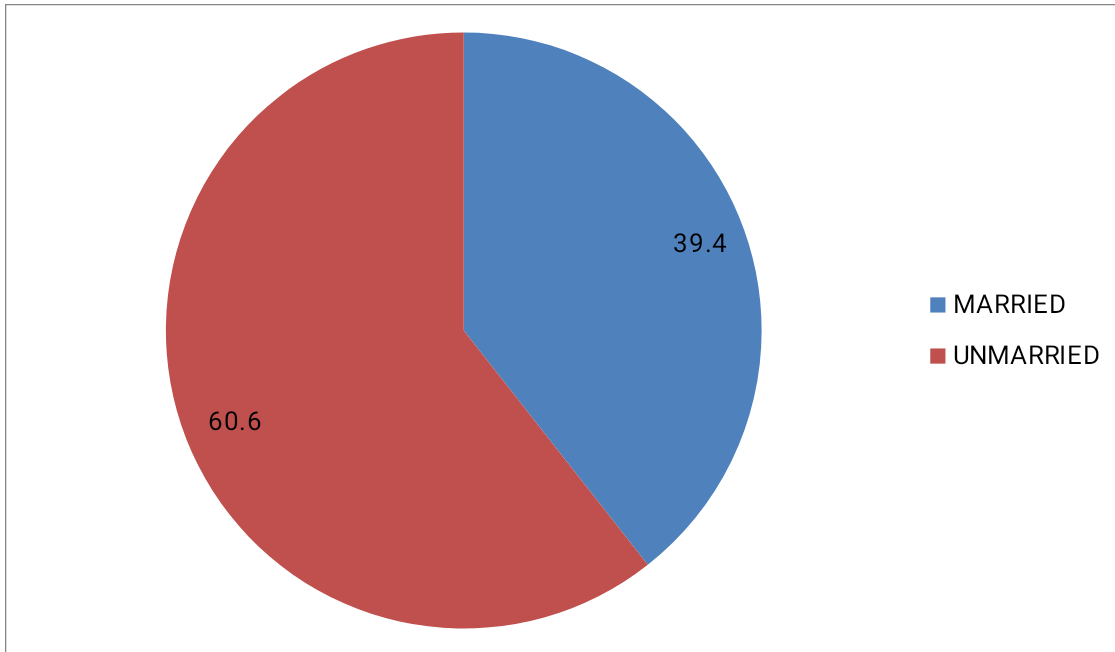


CHART 4.1.3 MARTIAL STATUS

INTERPRETATION:

From the above table is interpreted that the number of respondents is married 39.4% and Unmarried is 60.6%.

Inference:

The majority of 60.6% respondents is unmarried

TABLE 4.1.4 EDUCATION AND QUALIFICATION

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
SSLC	6	5%

12 th	9	5.8%
ANY DEGREE	66	47.1%
POST GRADUATE	43	42.1%
Total	124	100%

SOURCE : PRIMARY DATA

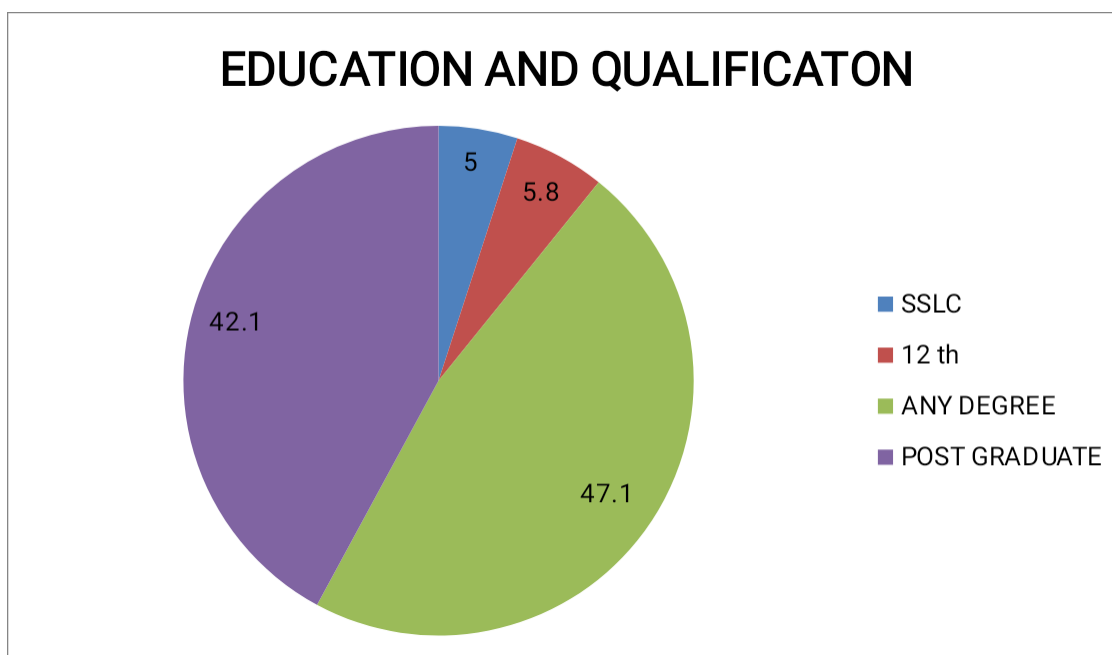


CHART 4.1.4 EDUCATION AND QUALIFICATION

INTERPRETATION:

The from the above table is interpreted that the number of respondents SSLC 5%, 12th 5.8%, any degree 47.1%, post graduate 42.1%.

INFERENCE:

The majority of 47.1% respondents is Any degree.

TABLE 4.1.5 MONTHLY TURN OVER

PARTICULARS	NO.OF.RESPPONDENTS	PERCENTAGE
20,000-30,000	12	15%
30,000-40,000	42	39.2%
40,000-50,000	53	35%
50,000-60,000	17	10.8%
TOTAL	124	100%

SOURCE: PRIMARY DATA

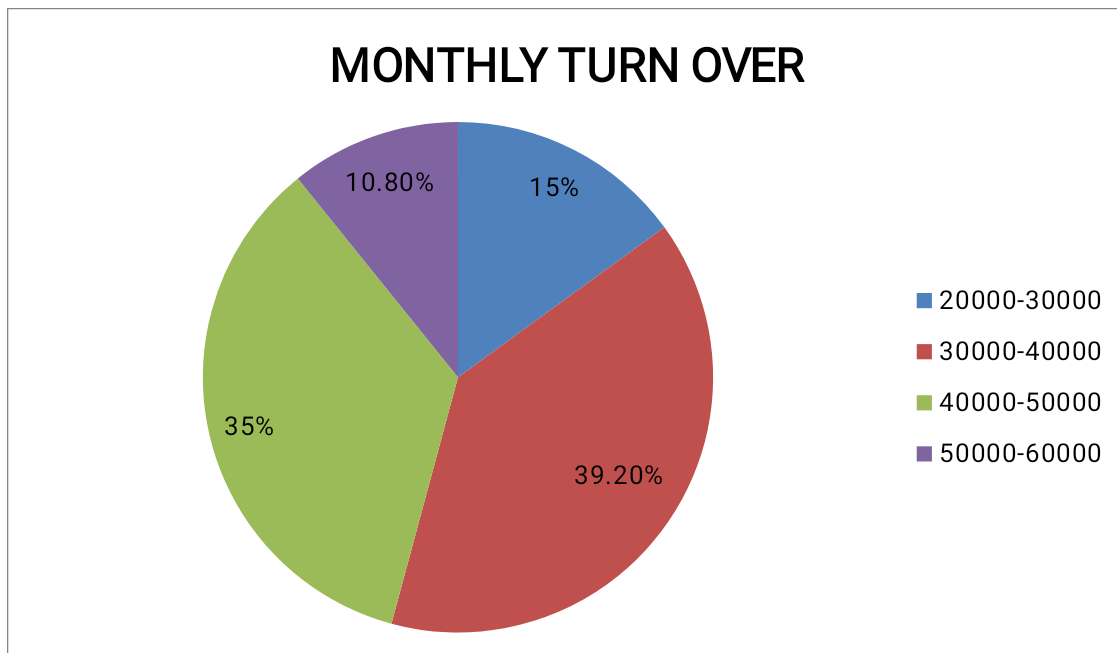


CHART 4.1.5 MONTHLY TURN OVER

INTREPRETATION:

From the above table is interpreted that the number of respondents is between 20,000-30,000 is 15%, 30,000-40,000 is 39.2%, 40,000-50,000 is 35%, 50,000-60,000 is 10.8%.

Inference:

The majority of 39.2% respondents is 30,000 – 40,000

TABLE 4.1.6 TOTAL NUMBER OF YEAR BUSSINESS

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
2	12	22.5%
5	65	46.7%
10	30	20%
15	17	10.8%
TOTAL	124	100

SOURCE: PRIMARY DATA

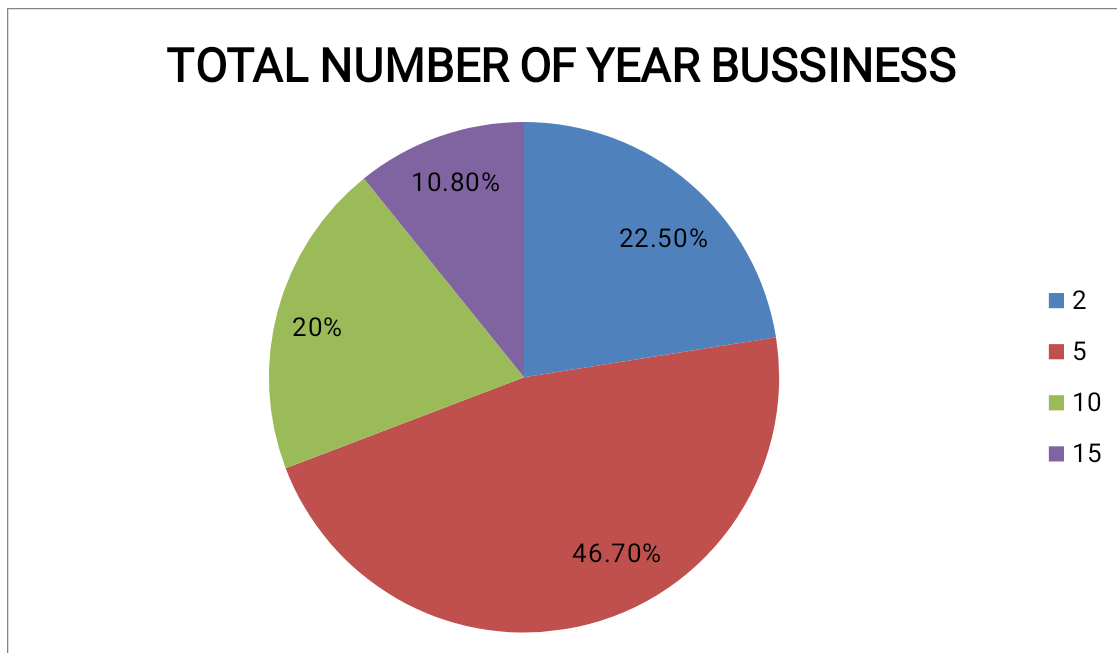


CHART 4.1.6 TOTAL NUMBER OF YEAR BUSSINESS

INTERPRETATION:

From the above table is interpreted that the number of respondents is business of year 2 is 22.5%, year 5 is 46.7%, year 10 is 20% and year 15 is 10.8%.

Inference:

The majority of 46.7% is respondents is year 5.

TABLE 4.1.7 HOW MANY ORDERS SELL IN PER DAY

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
50-100	24	21.9%
100-150	49	42.9%
150-200	34	23.8%
200 ABOVE	17	11.4%
TOTAL	124	100%

SOURCE: PRIMARY DATA

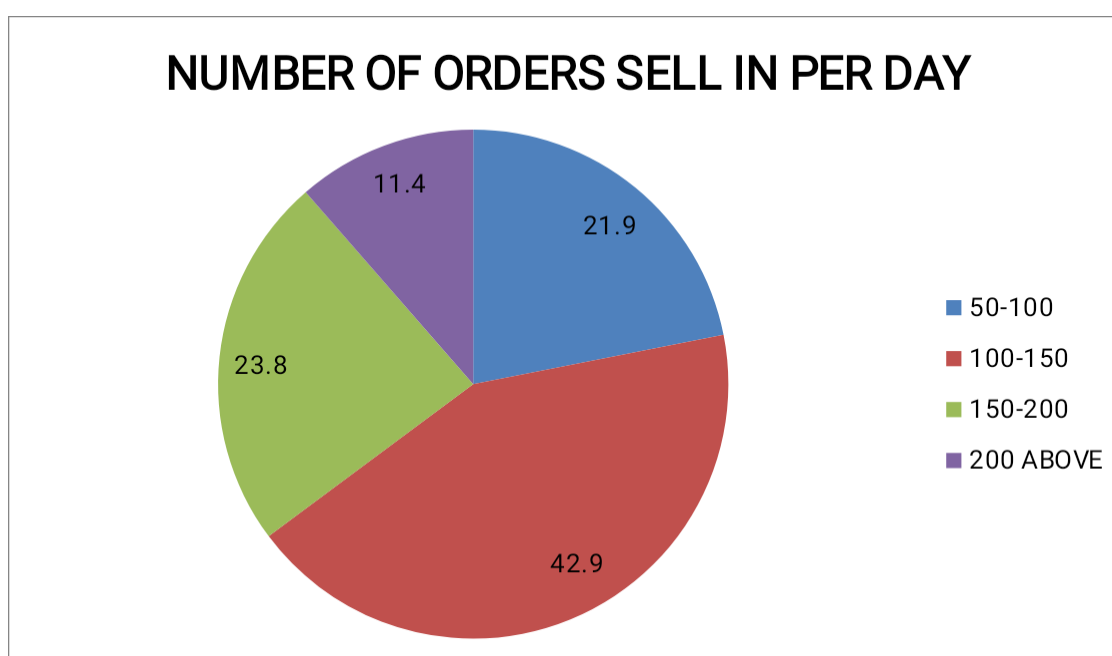


CHART 4.1.7 NUMBER OF ORDERS SELL IN PER DAY

INTERPRETATION:

From the above table is interpreted that the number of respondents is orders 50 - 100 is 21.9%, orders 100-150 is 42.9%, orders 150-200 is 23.8% and orders 200 above is 11.4%

Inference:

The majority of 42.9% respondents is 100-150 orders

TABLE 4.1.8 NUMBER OF ORDERS BUY IN A MONTH

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
300-400	26	22.9%
400-500	43	38.1%
500-600	38	26.7%
600 ABOVE	17	12.4%
TOTAL	124	100%

SOURCE: PRIMARY DATA

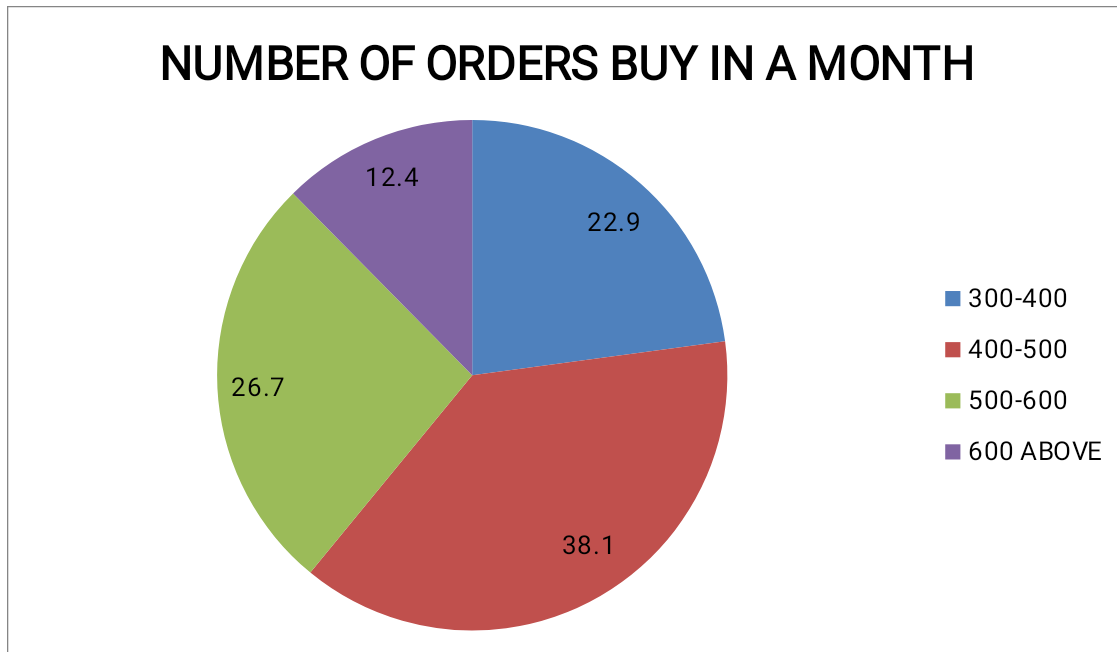


CHART 4.1.8 NUMER OF ORDERS BUY IN A MONTH

INTERPRETATION:

From the above table is interpreted that the number of respondents is buy in a month 300-400 is 22.9%, 400-500 is 38.1%, 500-600 is 26.7% and 600 above 12.4%.

Inference:

The majority of respondents 400-500 orders is 38.1%

TABLE 4.1.9 STORE A STOCK

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
HOME	22	18.1%
GODOWN	61	51.4%
STORE	31	22.9%
OTHER	10	7.6%
TOTAL	124	100%

SOURCE : PRIMARY DATA

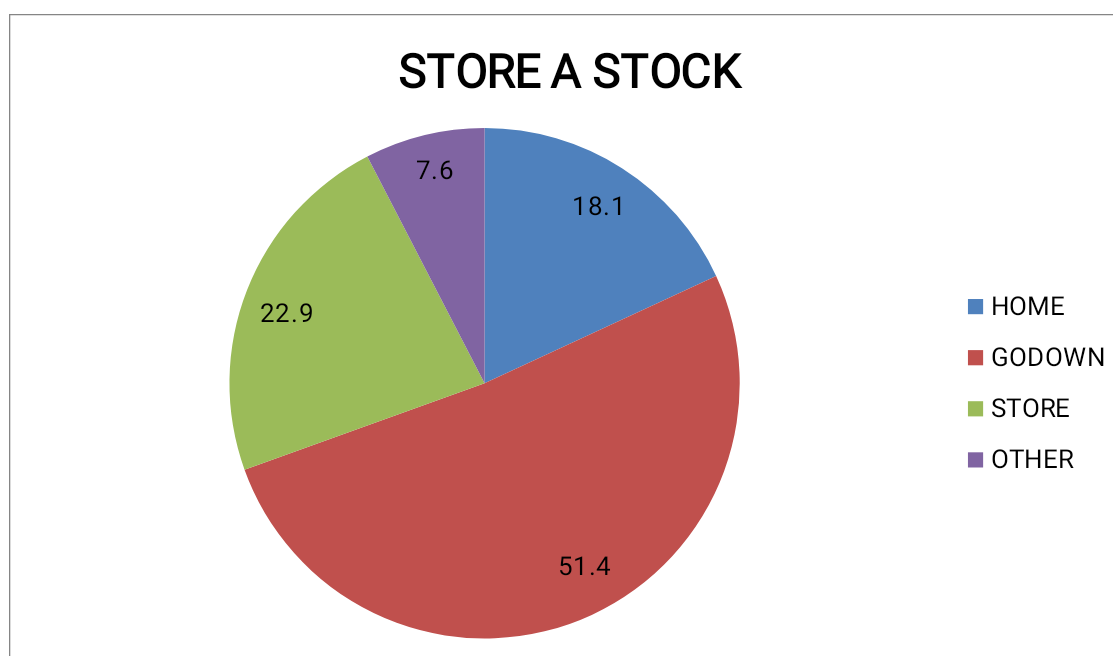


CHART 4.1.9 STORE A STOCK

INTERPRETATION:

From the above table is interpreted that the number of respondents is home is 18.1%, godown is 51.4% , store is 22.9%, and others is 7.6%.

Inference:

The majority of respondents is godown 51.4%.

TABLE 4.1.10 AIR LOGISTICS DURING COVID TIME

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
CLOSE	96	71.4
OPEN	28	28.6
TOTAL	124	100 %

SOURCE: PRIMARY DATA

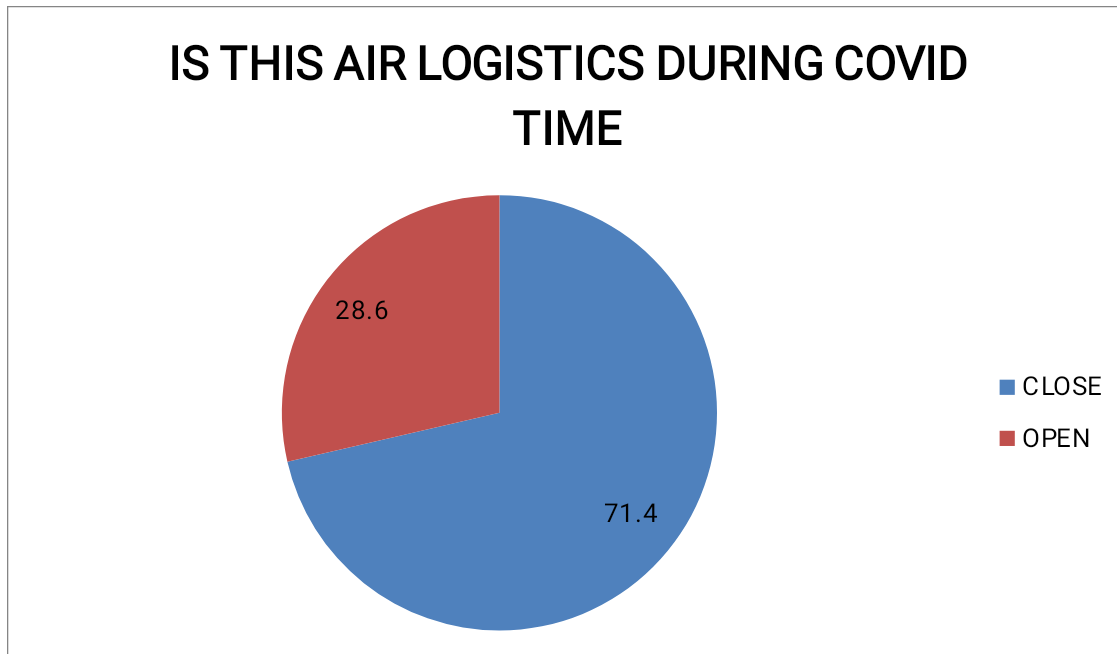


CHART 4.1.10 AIR LOGISTICS DURING COVID TIME

INTERPERTATION:

From the above table is interpreted that the number of respondents close is 71.4 % ,open is 28.6%.

Inference :

The majority of respondents are close is 71.4 %

.

TABLE 4.1.11 HOW YOU MANAGED TO TRANSPORT WHEN FLIGHTS WERE CANCELLED.

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
LORRY	36	28.2%
VAN	33	27.3%
AUTO	43	30%
OTHERS	12	14.5%
TOTAL	124	100%

SOURCE : PRIMARY DATA

HOW YOU MANAGED TO TRANSPORT WHEN FLIGHTS WERE CANCELLED

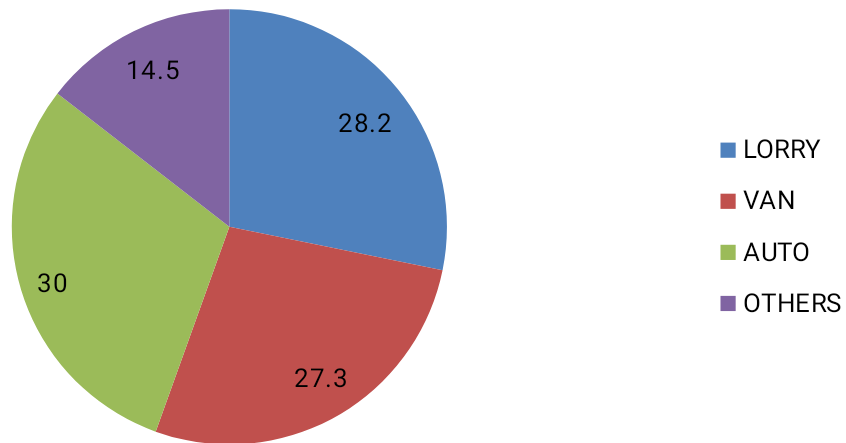


CHART 4.1.11 HOW YOU MANAGED TO TRANSPORT WHEN FLIGHTS CANCELLED

INTERPRETATION:

From the above table it is interpreted that the number of respondents between lorry 28.2% , Van 27.3 auto 30% and others 14.5%.

Inference:

The Majority of the respondents Auto 30%.

TABLE 4.1.12 IS THIS AIR LOGISTICS COSTLY

PARTICULARS	NO.OF.REPONDENTS	PERCENTAGE
YES	101	83.3%
NO	23	16.7%
TOTAL	124	100%

SOURCE: PRIMARY DATA

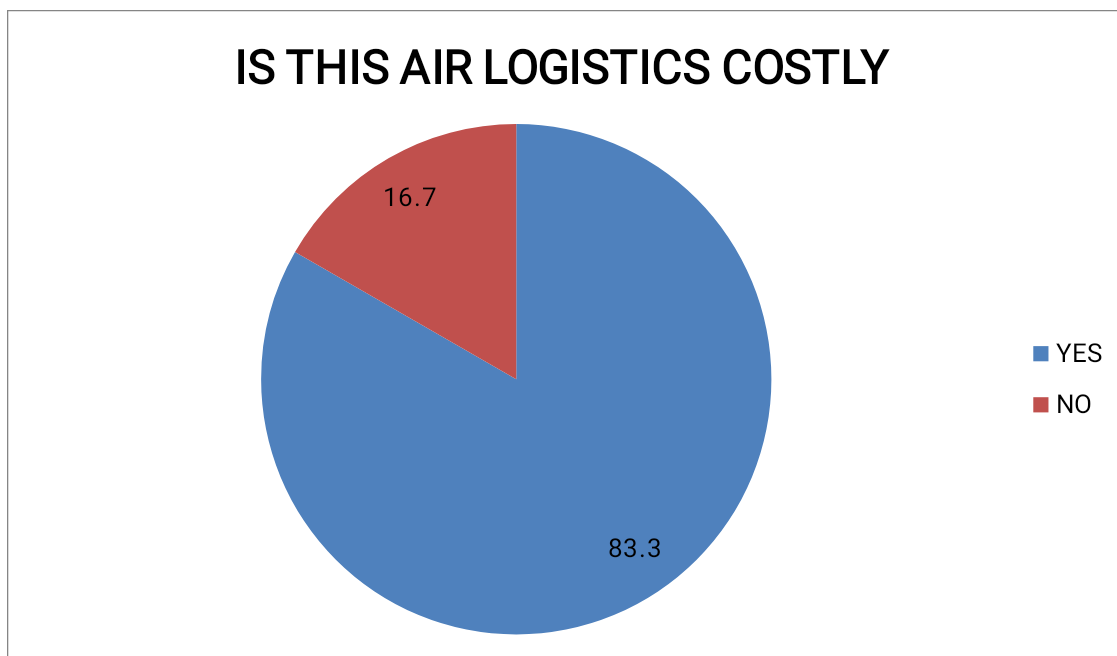


CHART 4.1.12 IS THIS AIR LOGISTICS COSTLY

INTERPERTATION:

From the above table is interpreted that the number of respondents is yes 83.3% and no is 16.7%.

Inference:

The majority of the respondents is yes 83.3%.

TABLE 4.1.13 ARE YOU EXPRIENCING LOW SALE OF POST COVID-TIME

PARTICULARS	NO.OF.REPONDENTS	PERCENTAGE
YES	80	68.4%
NO	44	31.6%
TOTAL	124	100%

SOURCE: PRIMARY DATA

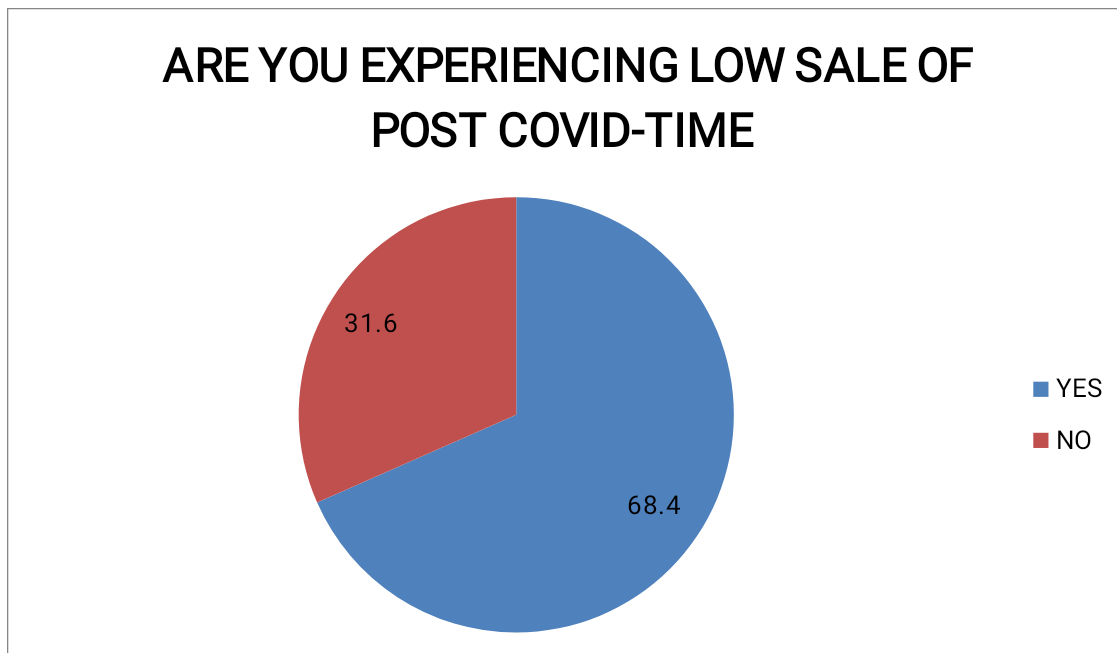


CHART 4.1.13 ARE YOU EXPERIENCING LOW SALE OF POST COVID-TIME

INTERPRETATION:

From the above table is interpreted that the number of respondents is yes 68.4% and no is 31.6%.

Inference:

The majority of the respondents is yes 68.4%

TABLE 4.1.14 HOW MUCH LOSS DID YOU COVID-TIME

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
5L	33	29.3%
10L	59	41.4%
15L	11	13.8%
MORE THAN	21	15.5%
TOTAL	124	100%

SOURCE: PRIMARY DATA

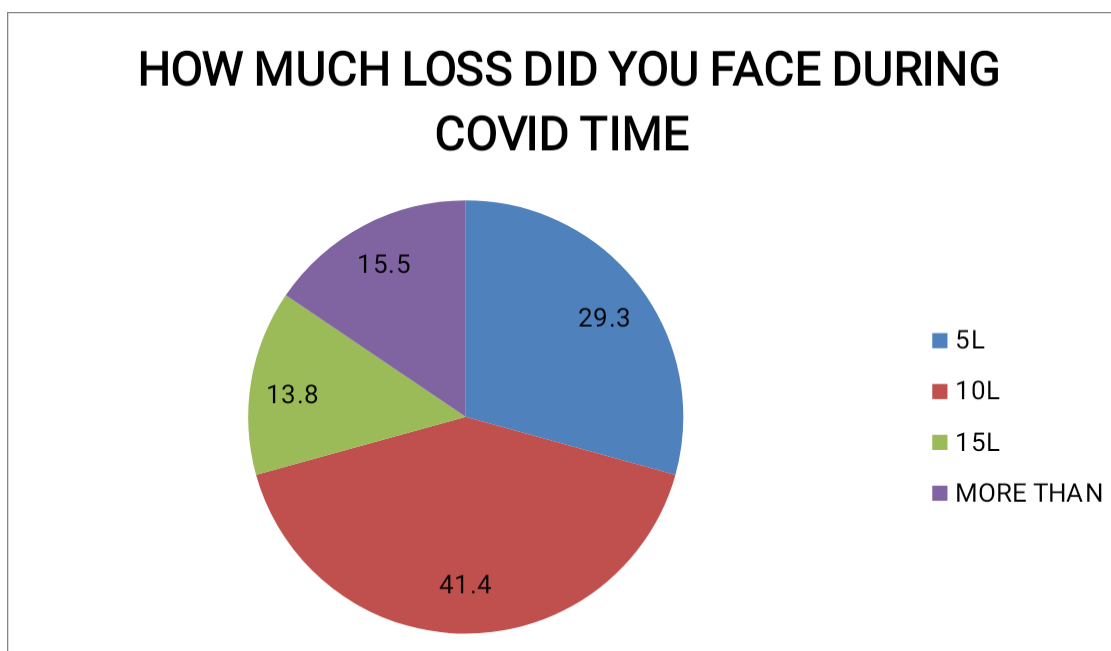


CHART 4.1.14 HOW MUCH LOSS DID YOU FACE DURING COVID TIME

INTERPRETATION:

From the above table is interpreted that the number of respondents is 5L is 29.3%, 10L is 41.4%, 15L is 13.8% and more than 15.5%.

Inference:

The majority of the respondents 10L is 41.4%.

TABLE 4.1.15 WHAT WERE THE SOURCES OF GETTING CREDIT IN YOUR BUSINESS

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
INDIAN BANK	27	26.6%
IOB	54	39.5%
HDFC	19	13.2%
OTHER SOURCE	24	20.7%
TOTAL	124	100%

SOURCE: PRIMARY DATA

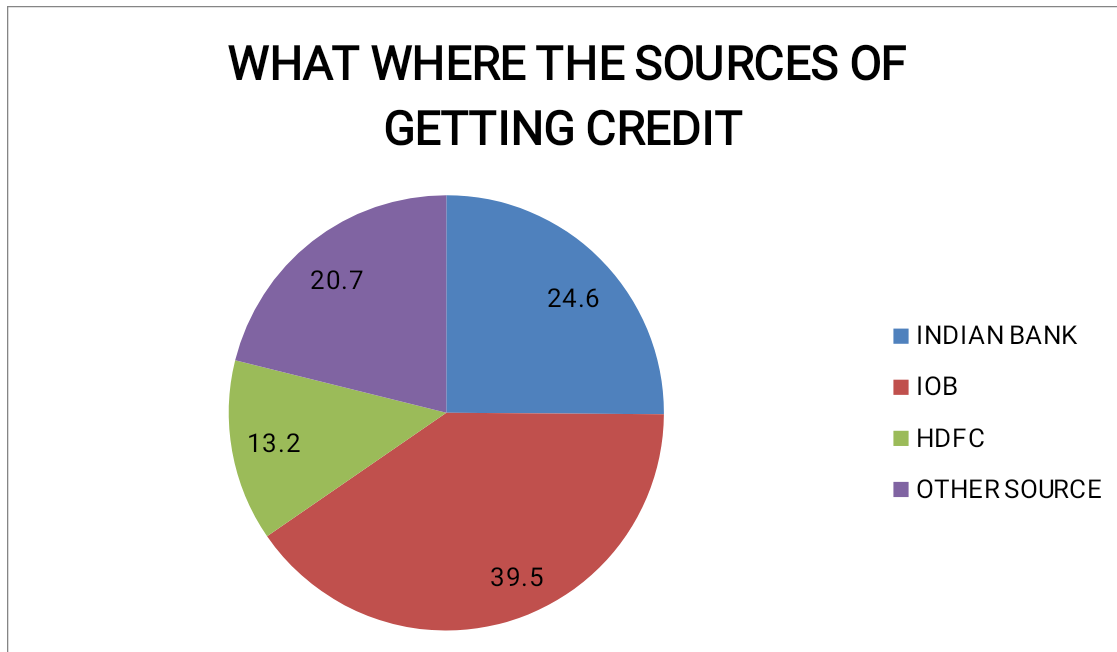


CHART 4.1.15 WHAT WERE THE SOURCES OF GETTING CREDIT

INTERPRETATION:

From the above table is interpreted that the number of respondents is Indian bank 24.6%, IOB 39.5%, HDFC 13.2%, other source 20.5%.

Inference:

The majority of the respondents is IOB 39.5%.

TABLE 4.1.16 DID YOU GET ANY LOAN DURING COVID –TIME

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
YES	98	73.5
NO	26	26.5
TOTAL	124	100%

SOURCE: PRIMARY DATA

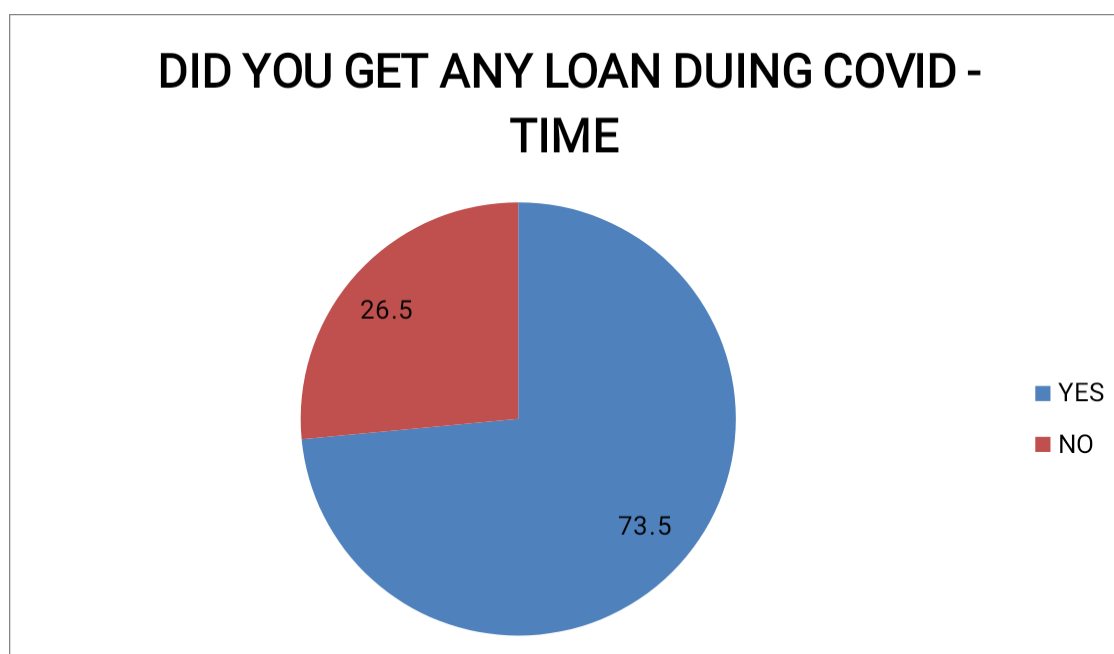


CHART 4.1.16 DID YOU GET ANY LOAN DURING COVID- TIME

INTERPRETATION:

From the above table is interpreted that the number of respondents is yes 73.3%, no 26.5%.

Inference:

The majority of the respondents yes is 73.5%.

TABLE 4.1.17 HOW MANY ORDERS WERE DEMAGED IN THIS PENDEMIC PERIOD

PARTICULARS	NO.OF.RESPONDERS	PERCENTAGE
100-200	22	21%
200-300	59	51.4%
300-400	37	23.8%
400 ABOVE	6	3.8%
TOTAL	124	100%

SOURCE: PRIMARY DATA

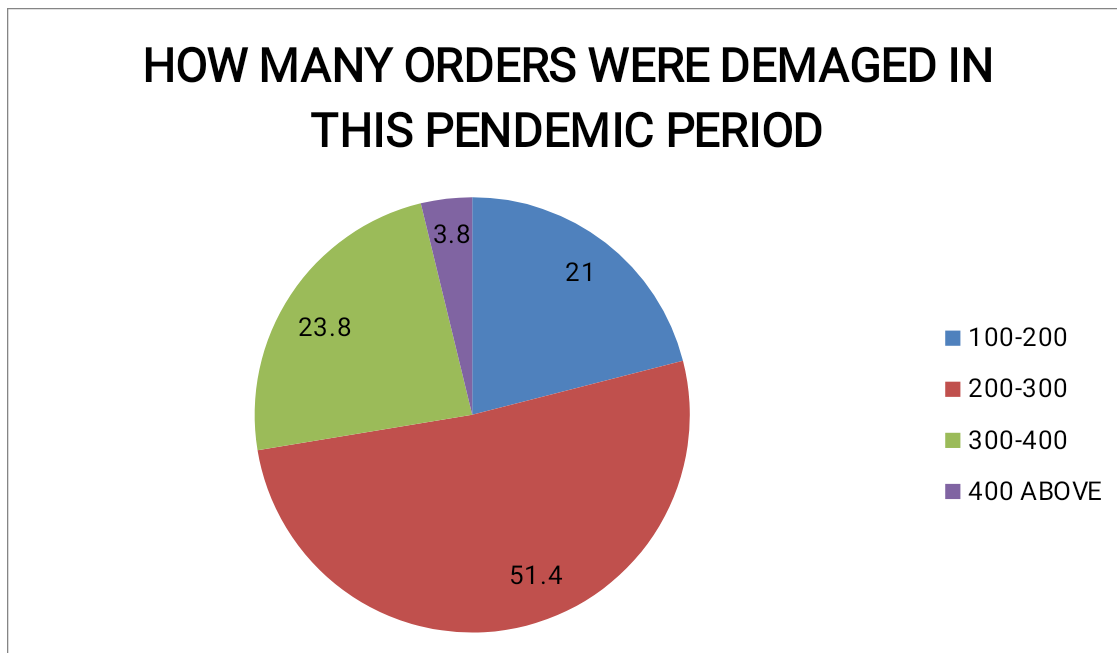


CHART 4.1.18 HOW MANY ORDERS WERE DAMAGED IN THIS PENDEMIC PERIOD

INTERPRETATION:

From the above table is interpreted that the number of respondents between 100-200 21%, 200-300 is 51.4%, 300-400 is 23.8%, and 400 above is 3.8%.

Inference:

The majority of the respondents is 200-300 is 51.4%.

TABLE 4.1.19 IS THIS AIR LOGISTICS FULLY SAFE

PARTICULARS	NO.OF.RESPONDERS	PERCENTAGE
YES	100	81.6%
NO	24	18.4%
TOTAL	124	100%

SOURCE: PRIMARY DATA

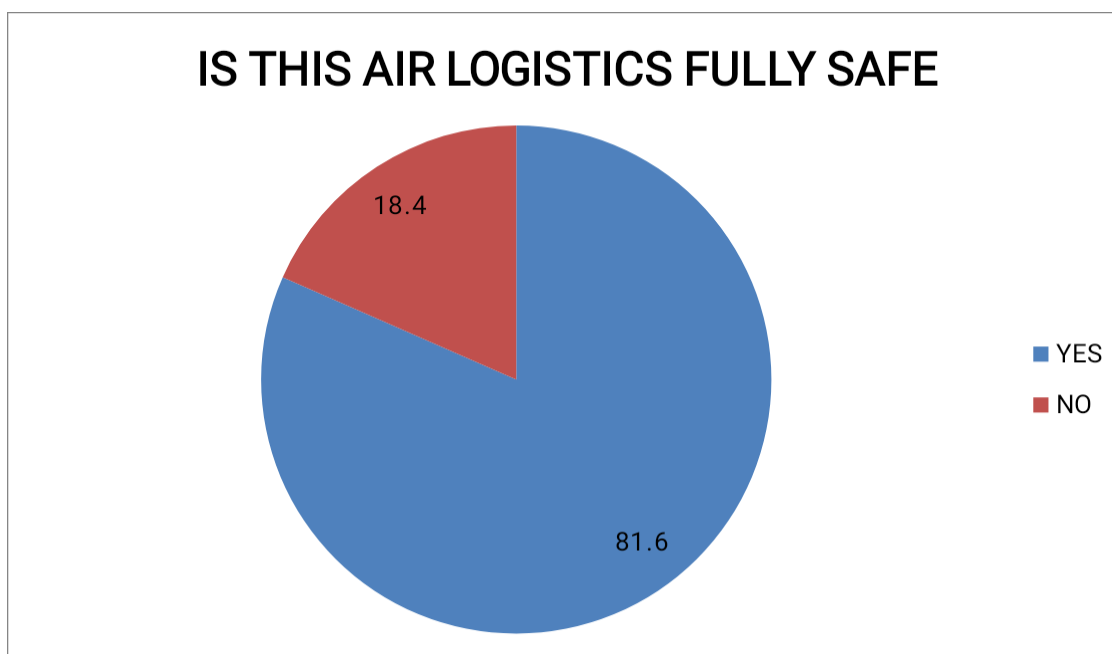


CHART 4.1.19 IS THIS AIR LOGISTICS FULLY SAFE

INTERPRETATION:

From the above table is interpreted that the number of respondents between yes is 81.6% and no is 18.4%.

Inference:

The majority of the respondents is yes 81.6%.

TABLE 4.1.20 RANK THE DEFFICULTIES YOU FACED FROM THE CARRIER FOR EXPORT

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
SHORTAGE OF DIRECT FLIGHT	27	32%
SHORTAGE OF CARGO SPACE	63	55.3%
OFF LOADING	14	8.9%
HIGH FREGHT RETE	10	5.8%
TOTAL	124	100%

SOURCE: PRIMARY DATA

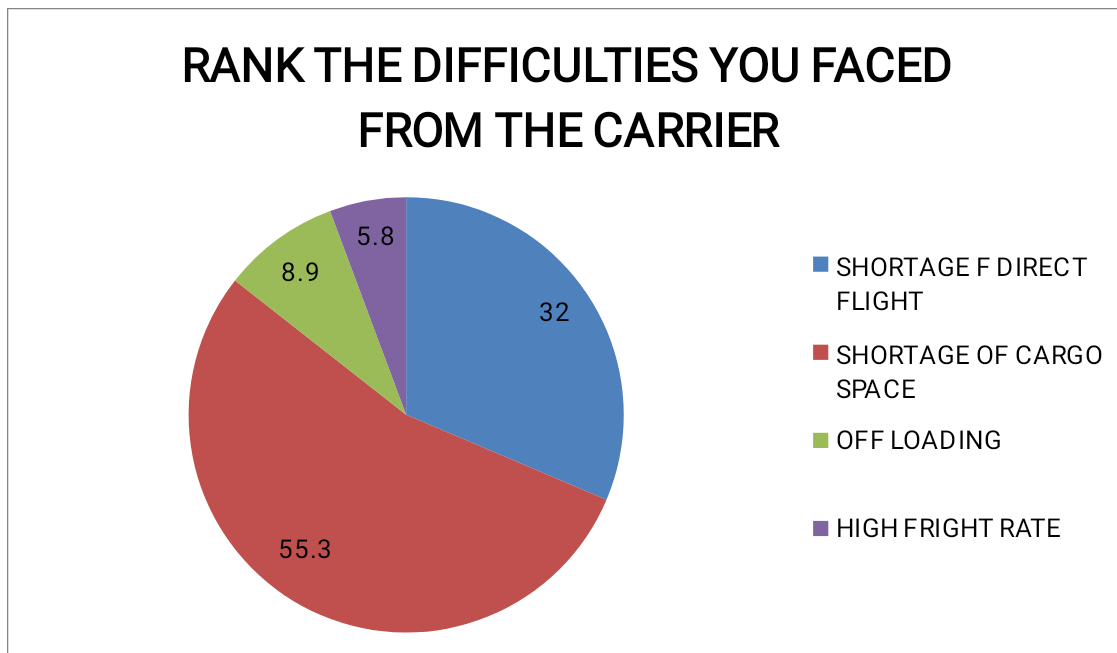


CHART 4.1.20 RANK THE DIFFICULTIES YOU FACED FROM THE CARRIER FOR EXPORT

INTERPRETATION:

From the above table it is interpreted that the number of respondents between shortage of direct flight 32%, shortage of cargo space 55.3%, off loading 8.9%, high freight rate 5.8%.

Inference:

The majority of the respondents between shortage of cargo space 55.3%.

TABLE 4.1.21 DO YOU IMPLEMENT IN A MEDICAL SERVICES IN YOUR AIR LOGISTICS

PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
YES	104	85.6%
NO	20	14.4%
TOTAL	124	100%

SOURCE: PRIMARY DATA

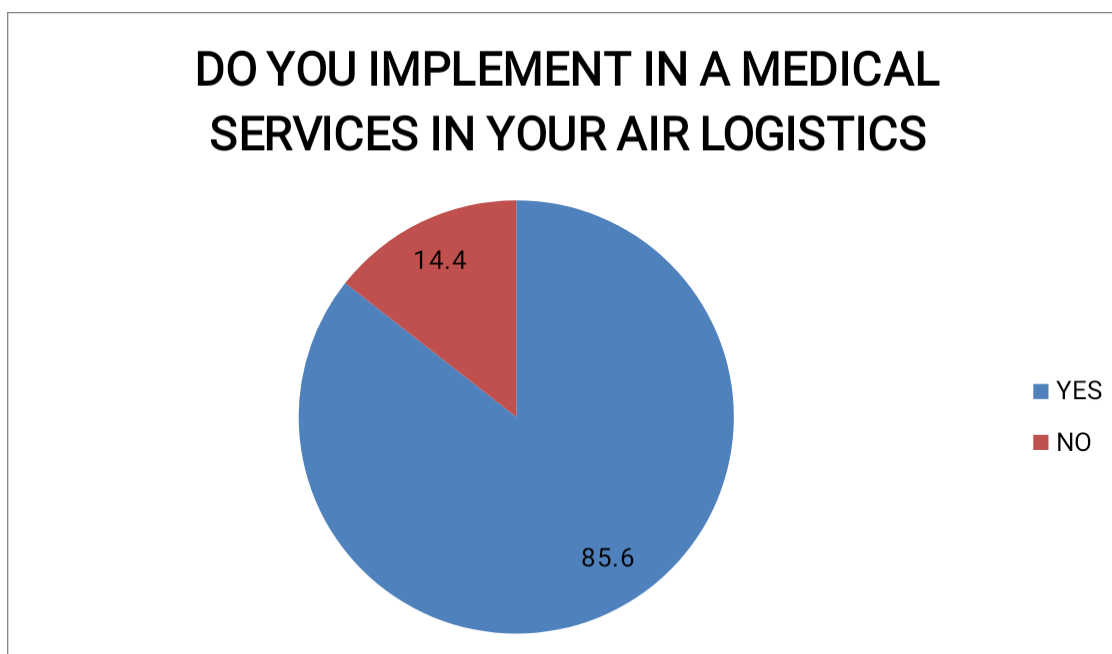


CHART 4.1.21 DO YOU IMPLIMENT IN A MEDICAL SERVICES IN YOUR AIR LOGITICS

INTERPRETATION:

From the above table is interpreted that the number of respondents between yes is 85.6%, and no is 14.4%.

Inference:

The majority of the respondents yes 85.6%

TABLE 4.1.22 WHAT PRODUCT SHIPPED IN THE AIR LOGISTICS

PARTICULARS	NO.OF.REPONDENTS	PERCENTAGE
MEDICINES	39	32.7%
GROCERICES	63	51%
METALS	16	11.5%
ANIMALS FLESH	5	4.8%
TOTAL	124	100%

SOURCE: PRIMARY DATA

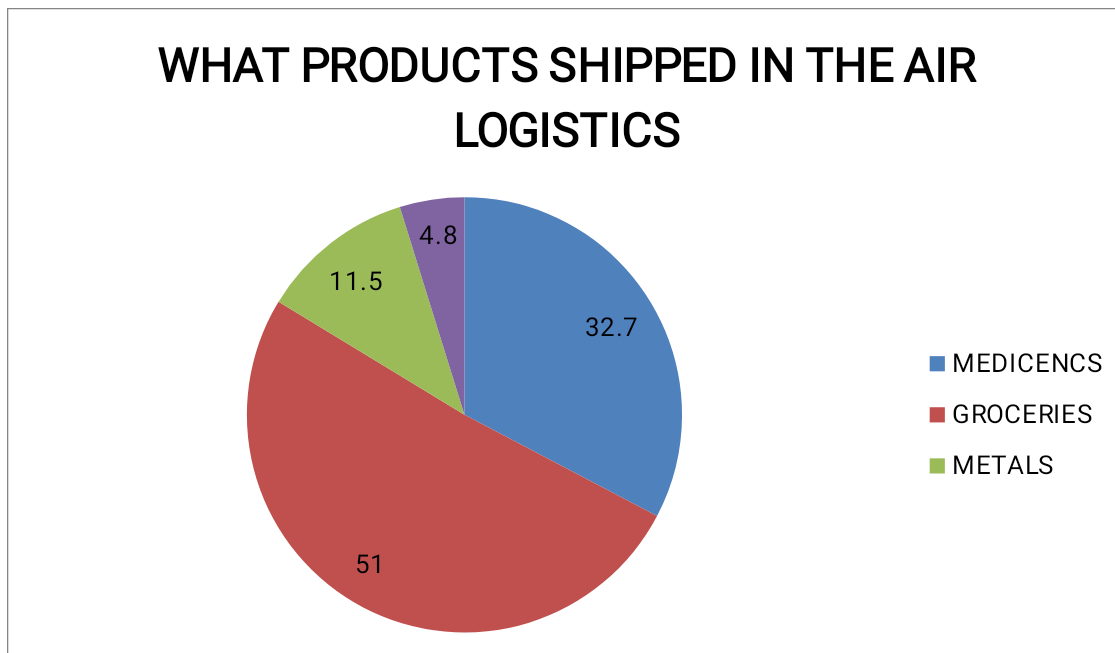


CHART 4.1.22 WHAT PRODUCTS SHIPPED IN THE AIR LOGISTICS

INTERPRETATION:

From the above table is interpreted that the number of respondents is medicines 32.7%, groceries 51%, metals 11.5%, animals flesh 4.8%.

Inference:

The majority of the respondents is groceries 51%.

4.2 ANOVA

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@15.Howmuchlossdidyoufaceduringcovidtimeinairlogistics BY @3.Age

/STATISTICS DESCRIPTIVES

/MISSING ANALYSIS

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Oneway

Notes

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[DataSet2]

Descriptives

N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean

						Lower Bound
13.Is this air logistics costly?	1	61	1.21	.413	.053	1.11
	2	39	1.05	.223	.036	.98
	3	15	1.07	.258	.067	.92
	4	7	1.71	.488	.184	1.26
	Total	122	1.17	.379	.034	1.10
14.Are you experiencing low sale of post covid - time in air logistics	1	62	1.45	.502	.064	1.32
	2	39	1.13	.339	.054	1.02
	3	15	1.40	.507	.131	1.12
	4	7	1.71	.488	.184	1.26
	Total	123	1.36	.481	.043	1.27
15.How much loss did you face during covid-time in air logistics	1	62	1.65	.851	.108	1.43
	2	39	1.56	.502	.080	1.40
	3	15	1.47	.516	.133	1.18
	4	7	2.57	1.397	.528	1.28
	Total	123	1.65	.789	.071	1.51

		Descriptives		
		95% Confidence Interval for Mean		
		Upper Bound	Minimum	Maximum
13.Is this air logistics costly?	1	1.32	1	2
	2	1.12	1	2
	3	1.21	1	2
	4	2.17	1	2
	Total	1.24	1	2
14.Are you experiencing low sale of post covid - time in air logistics	1	1.58	1	2
	2	1.24	1	2
	3	1.68	1	2
	4	2.17	1	2
	Total	1.44	1	2
15.How much loss did you face during covid-time in air logistics	1	1.86	1	4
	2	1.73	1	2
	3	1.75	1	2
	4	3.86	1	4
	Total	1.79	1	4

		ANOVA			
		Sum of Squares	df	Mean Square	F
13.Is this air logistics costly?	Between Groups	2.896	3	.965	7.863
	Within Groups	14.489	118	.123	
	Total	17.385	121		
14.Are you experiencing low sale of post covid - time in air logistics	Between Groups	3.518	3	1.173	5.640
	Within Groups	24.742	119	.208	
	Total	28.260	122		
15.How much loss did you face during covid-time in air logistics	Between Groups	6.737	3	2.246	3.860
	Within Groups	69.231	119	.582	
	Total	75.967	122		

		ANOVA		Sig.
13.Is this air logistics costly?	Between Groups			.000
	Within Groups			
	Total			
14.Are you experiencing low sale of post covid - time in air logistics	Between Groups			.001
	Within Groups			
	Total			
15.How much loss did you face during covid-time in air logistics	Between Groups			.011
	Within Groups			
	Total			

Post Hoc Tests

Homogeneous Subsets

13. Is this air logistics costly?

Duncan^{a,b}

		Subset for alpha = 0.05	
3.Age	N	1	2
2	39	1.05	
3	15	1.07	
1	61	1.21	
4	7		1.71
Sig.		.223	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.901.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

14. Are you experiencing low sale of post covid - time in air logistics

Duncan^{a,b}

		Subset for alpha = 0.05	
3.Age	N	1	2
2	39	1.13	
3	15	1.40	1.40
1	62	1.45	1.45
4	7		1.71
Sig.		.060	.068

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.918.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

15. How much loss did you face during covid-time in air logistics

Duncan^{a,b}

		Subset for alpha = 0.05	
3.Age	N	1	2
3	15	1.47	
2	39	1.56	
1	62	1.65	
4	7		2.57
Sig.		.538	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.918.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

CHAPTER 5

5.1 FINDINGS:

- The Majority of 83.5% respondents is male.
- The majority of 50% respondents are 20-30
- The majority of 60.6% respondents is unmarried
- The majority of 47.1% respondents is Any degree.
- The majority of 39.2% respondents is 30,000 – 40,000
- The majority of 46.7% is respondents is year 5
- The majority of 42.9% respondents is 100-150 orders
- The majority of respondents 400-500 orders is 38.1%
- The majority of respondents is godown 51.4%.
- The majority of respondents are close is 71.4 %.
- The Majority of the respondents Auto 30%.
- The majority of the respondents yes 83.3%.
- The majority of the respondents is yes 68.4%
- The majority of the respondents 10L is 41.4%.
- The majority of the respondents is IOB 39.5%.
- The majority of the respondents yes is 73.5%.

- The majority of the respondents is 200-300 is 51.4%.
- The majority of the respondents is yes 81.6%.
- The majority of the respondents between shortage of cargo space 55.3%.
- The majority of the respondents yes 85.6%
- The majority of the respondents is groceries 51%.

5.2 SUGGESTIONS:

- Cost for the transportation can be optimized.
- More than ways improve the business.
- Air logistics is useful for the products exports and imports.
- Save the goods and profits
- Avoid unwanted goods
- They all products are safety actively
- Save the goods and cost
- More ways try
- Avoid losses

- What problem arises we should not leave that work we should overcome from that(hard work)
- Hard work

5.3 CONCLUSIONS:

The airline industry is cyclical and sensitive to a number of external economic factors that affect the number of domestic and international travels, including consumer confidence and corporate profit. Improved economic conditions over the five years to 2016 have increased demand for both business and consumer travel. The newer aircrafts are continuing to update to satisfy the request from the consumers. There has been a tremendous surge in the percentage of people who are now travelling longer distance and becoming frequently flyers more than ever before. As far as changes in travel preferences

Millennial are found to be willing to spend more on business travel than other generations when it comes to be business travel. Globally the aviation industry is consumers over 200 million tons of jet fuel per year .there is an increasing demand for international flight and airport are beginning to grow and airports now have a system to comply with passengers with connecting flights ,it is very important for airport to standardize their process in order to minimize passenger confusion benefiting the foot traffic of airport and making the airlines more profitable.

Transport and the activities associated with storage are the biggest cost items in the supply chain, and therefore due attention is to be paid to their design and

optimization. Air freight has recorded a long-term growth of their performances, despite some negative effects in the past or in the current period. This mode plays an irreplaceable role in the global, continental and intercontinental transport relations for certain types of supplies, particularly supplies of high value and low volume. In order to ensure high quality transport services, particularly in terms of quality and accuracy of delivery, further growth of the integrated express carriers can be expected, and creating strategic alliances and partnerships between individual carriers. Air freight is increasingly becoming an integral part of a more robust global supply chains adding to their values

REFERENCES:

JOURNALS:

Airports council international north American (AIC) (2004) 2003-2004 AIR cargo facilities and security survey summary, washington, DC.
 Airports council international north American (AIC-NA) (2010). 2010 north America airport rankings, Washington, DC
 Ashford, N.J., Mumayiz, S., and wright, P.H. (2011). Airport Engineering: planning, design and development of 21st century airports new York john wiley & sons.
 Ballis, A (2007). Overview of air cargo terminal design aspects. Transportation research record: journal of the transportation research board no. 2007.
 Transportation research board of the national academics, Washington, DC, 117-125.
 Bigges, D.C M.A. Bol, j. basker, G.D. Gosling, J.D. Franz, and J.P. cripwell. (2009). ACRP report 26: guidebook for conducting airport user survays. Transportation research board.
 Allaz, camile (2005): the history of air cargo and airmail from the 18th century,
 Morel, peter S. (2011): Moving boxes by air. The economics of international air cargo
 Jhonsson, Julie. "Big-belly boeing 777 Blunts Demand for cargo –only jets"
 "A barrier to A380 sales in the united sates Runway Girl, 3 July 2014. Accessed: 20 July 2014.Randy Tinseth (Apr 26, 2018). "air cargo carries growth momentum into 2018"Wragg, David Airlift A history of Military Air transport shrewsbury airlife publishing 1986
 Jhonson, brain& cozens, H. I. bombers the weapon of total war London Methuen 1984
 Andrews and Morgen 1988. Kay, Anthony (2004). Junkers aircraft and engines 1913 - 1945 london: Putnam aeronautical books.Ben Hargreaves (sep 27, 2018) "Available Aircraft feedstock limiting cargo conversions" Aviation week intelligence Network."
 FERENC, J. et al.: Prevádzka letísk, Letecká fakulta, Technická univerzita Košiciach, 2013. (Original in Slovak) BOROŠKA, J., ŠADEROVÁ, J.: Technické prostriedky

logistiky I., Elfa, s.r.o., Košice, 2001. (Original in Slovak) GAJDOŠ, J., URBĽÍKOVÁ, D.: Logistika teoretické základy a prípadové štúdie, Ekonomická univerzita v Bratislave, 2005. (Original in Slovak) KOŠČÁK, P., FERENC, J.: Organizácia a riadenie prevádzky letísk, 1st ed., Košice, LF TU, 2010. (Original in Slovak) KOŠČÁK, P., OLEJNÍK, F., FERENC, J.: Riadenie prevádzky letísk, 1sted., Košice, LF TU, 2012. (Original in Slovak) KHOURI, S., KAČMÁRY, P. Optimalizácia tokov informácií v modelovej firme prostredníctvom zavedenia ERP systému, Doprava a logistika, Special issue Nr. 6, p. 125-127, 2009. (Original in Slovak) ŠADEROVÁ, J., KAČMÁRY, P.: The simulation model as a tool for the design of number of storage locations in production buffer store, Acta Montanistica Slovaca.

BOOKS:

1. Air cargo insurance by **Malcolm A. Clarke**; George Leloudas view eBook This link opens in a new window
Publisher: informa law 2016
2. Air cargo Management: Air freight and the global supply chain by Michael sales view eBook this link opens in a new window publisher: Routledge, 2016
3. Air cargo security by pierre turron view ebook this link opens in a new window
Publisher: nova science, 2011
4. Air freight directory call number: Reference HE9788. A91 XXXIII 2018
Publisher: Air cargo, Inc. 2018
5. Management perspective by john G. Wensveen view ebook this link opens in a new window
Publisher: Ashgate, 2015

Website:

www.nap.edu/read
<https://www.en.wikipedia>
www.moneychai.com

APPEXDIX-I (QUESTIONAIRRE)

A STUDY ON IMPACT OF COVID ON AIR LOGISTICS

1.Name

2. Gender

a) Male b) Female

3. Age

a) 20-30 b) 30-40 c) 40-50 d) 50 above

4. Marital Status

a) married b) unmarried

5. Education and Qualification

a) SSLC b) 12th c) any degree d) post graduate

6. what is your monthly turnover in your logistics business

a) 20,000-30,000 b) 30,000-40,000 c) 40,000-50,000 d) 50,000-60,000

7. Total number of year business in your air logistics

a) 2 b) 5 c) 10 d) 15

8. How many orders sell in per day in your air logistics

a) 50-100 b) 100-150 c) 150-200 d) 200 above

9. How many orders buy in a month in your air logistics

a) 300-400 b) 400-550 c) 550-600 d) 600 above

10. Where do you store a stock in air logistics

a) home b) godown c) store d) other

11. Is this air logistics during covid-time

a) close b) open

12. How you managed to transport the when flights were cancelled

a) lorry b) van c) auto d) others

13. . Is this air logistics costly.

a) yes b) no

14. Are you experiencing low sale of post covid – time in air logistics

a) yes b) no

15. How much loss did you face during covid time in air logistics

a) 5L b) 10L c) 15L d) more than

16. What where the sources of getting credit in your business

a) Indian bank b) IOB c) HDFC d) other source

17. Did you get any loan during covid -19 time to manage your air logistics

a) yes b) no

18. How many orders were damaged in this pandemic period

a) 100-200 b) 200-300 c) 300-400 d) 400 above

19. Is this air logistics fully safe
a)yes b) no
20. Rank the difficulties you faced from the carrier for export
a)shortage of direct flight b)shortage of cargo space c) offloading d) high freight rate
21. Do you implement in a medical service in your air logistics
a) yes b) no
22. What products shipped in the air logistics
a)medicines b) groceries c)metals d)animals flesh
23. Give you suggestions for improve the business

APPENDIX-2 (Article)

A STUDY ON IMPACT OF COVID ON AIR LOGISTICS

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ABSTRACT

Air transport industry has gradually increased its share of global passenger and freight traffic, and this trend has accelerated in the last 40 years. For the past, air freight sector offered limited services, with heavy reliance on several intermediaries and a significant dependence on air passenger operations. The sector can now be characterized as a sophisticated, innovative one, relying heavily on new electronic technologies, offering a wide range of transport and logistical products through dedicated specialist freight operators. With increasing emphasis on the globalization of trade and economic activity, air freight growth is expected to continue to outpace air passenger traffic growth. The air freight growth is expected to be greatest in the Asian markets the process of physical distribution of freight has become a highly sophisticated operation, with increasingly greater reliance being placed on the use of new technology to assist in the movement, storage, and tracking of consignments but transport is just one component in this logistics chain. In this paper, air freight sector is examined in terms of its structure, organization, its role in the supply chains the main trends in the recent period, constraints facing the sector and the future prospects in air-freight sector.

KEY WORDS: air freight organization, development, trends forecast, logistics services.

INTRODUCTION

Air cargo logistics introduction

Air cargo is growing in popularity as the medium of choice when it comes to shipping time sensitive goods, belongings documents and information from one place to another. Air cargo refers to the act of using an air carrier as the transport vessel for shipment purposes. The benefits of air cargo are the speed and convenience of using such a service. Air cargo can get your shipment to its overseas destination within a day in many instances and it has become an integral and important part of the global logistics network chain.

There are now plenty of airline that offer air cargo services. Generally these airlines are dedicated to air cargo transport, however, a number of commercial passenger airlines have separate divisions offering cargo services. Some of these air cargo companies are in actuality feeder services for larger express delivery companies and merely work under contracts for the larger businesses.

Using air cargo can be a tricky question in many peoples minds. After all there are a number of different shipping options when it comes to cargo. The determining factors for many businesses and individuals is time sensitivity, the fragility of the budget. While other forms of shipping are slow and cost efficient, air cargo is more expensive given its expediency. If you are looking to accompany the goods as they are specially equipped to carry passengers as well as merchandise.

When looking to send a shipment overseas using air cargo, most businesses and individuals to help them deal with the logistics and paper work involved with the process. Although you can always book the entire shipment by yourself, there are so many intricacies involved in the shipment of goods that it is best to retain the services of either a freight forwarder or arrange to have our goods sent by a big name delivery service. Among the things that you will also have to arrange for the person receiving the goods at the final destination to receive them either by picking it up themselves or paying for a third party to deliver it. Many larger air cargo companies will offer freight forwarding services for smaller shipments and deliveries, but if you are planning on shipping large quantities of goods or you are planning the removal of an entire house then you are better off hiring a freight forwarder to help you with the logistics planning of your shipment.

Finding an air cargo supplier is not too complicated thanks to a slew of highly visible and well established businesses that offer air freight services. Continue reading to get a better understanding of how air cargo shipments work, how they can best be used to suit your needs and what you can expect from such services. We have also provided a glossary of commonly used terms and selected articles that may be of interest to you.

Air freight is used by many industries to fulfil their transportation and supply chain management needs. Take manufacturing, for example : it doesn't just rely on the

benefits of air freight for movement of finished goods but also for components, which represent a substantial portion of cross border trade.

II. OBJECTIVES OF STUDY:

To facilitate the flow of materials across the supply chain of an enterprise so as to cost- effectively make the right product available at the right place, at the right time two polemic goals:- 1. Customer satisfaction and 2. Least cost

To be institution of global standing for making job ready professionals in industries of tomorrow. Fill the vacuum created due to lack of skilled manpower in logistics & aviation industry by imparting innovative and intellectually challenging education in the segment. Synthesize the highest academic standards with relevance to the need to present business and commercial policies collaborations with multiple organizations at national and international levels in areas of research, training, seminars and conferences. Represent the interests of professionals in the country ensuring that India does not lag behind in maintaining the internationally prescribed standards of logistics & aviation sector worldwide.

- Governmental restrictions aspiring to slow down the spread of epidemic and pandemic outbreaks lead to impairments for economic operations which impact of transportation networks comparing the rail, air, and trucking industries.
- Witnessing a substantial increase in the number of infections in germane the authorities have imposed drastic restrictions on everyday life. resulting panic buying and increasing home consumption had versatile impacts on transport volume and freight capacity dynamics in germane food retail logistics.
- Due to the lack of prior research on the effects of covid-19 on transport volume inertial logistics, as well as resulting implications, this article aspires to shed light on the phenomenon of changing volume and capacity dynamics in road haulage.

- This ratio was then examined concerning the number of covid-19 infections per day .the results of this study prove that the increasing freight volume for dry products in retail logistics does not depend on the duration of the covid-19 epidemic but on the strength quantified through the total number of new infections per day.
- Transportation companies and food retail logistics for non-cooled transport capacity.

III. REVIVEW OF LITERATURE:

- **Sube singh, Ramesh kuma , Rohit panchal, Manoj kumar** an outbreak of deadly covid-19 virus has not taken the lives of people but also severely crippled the economy. Due to strict lockdown ,the manufacturing and logistics activities have been suspended ,and it has affected the demand and supply of various products as a result of restrictions imposed on shopkeepers and retailers .impacts of covid-19 are observed ubiquitously in every type of units from different sectors .In this study, a simulation model of the public distribution system(PDS)network is developed with three different scenarios to demonstrate disruptions in the food supply chain. Diffculties have been increased in matching supply and demand in a vast network of PDS because of changing scenarios with the growth of infected cases and recovery. This paper also highlights the importance of a resilient supply chain during a pandemic. Our proposed simulation model can help in developing a resilient and responsive food supply chain to match the varying demand, and then further assist in providing decision-making support for rerouting the vehicles as per travel restrictions in areas. Paper has been summarized with significant highlights and including future research scope for developing a more robust food supply chain network.

- **Maciel M Queiroz, Dmitry Ivanov, Alexandre Dolgui, Samuel Fosso Wamba** the coronavirus (COVID-19) outbreak shows that pandemics and epidemics can seriously wreak havoc on supply chains around the globe. Humanitarian logistics literature has extensively studied epidemic impacts, however, there exists a research gap in understanding of pandemic impacts in commercial SCs guided by a structured literature review that collated a unique set of publications. The literature review findings suggest that influenza was the most visible epidemic outbreak reported, and distribution emerged as the most popular topic. The streamlining of the literature helps us to reveal several new research tensions and novel categorizations /classifications. Most centrally, we propose a framework for operations and supply chain management at the times of COVID-19 pandemic spanning six perspectives, adaptation, digitalization, preparedness, recovery, ripple effect, and sustainability.

- **Mohamed Grida, Rehab Mohamed, Abdel Nasser H Zaied** supply chain operations are disrupted due to natural disasters or epidemics. In the recent period, the supply chain suffers from obstacles and major challenges that affect its stages directly due to the spread of the COVID-19 epidemic around the world. The impact of this epidemic on supply chain performance is clear in terms of supply, demand, or logistics. This epidemic is characterized by a rapid spread, so countries have taken preventive policies in an attempt to limit its spread. These policies are direct impacts on the performance of the supply

- **Abid Haleem, Mohd Javaid, Raju Vaishya, SG Deshmukh** coronavirus (COVID-19) epidemic is growing exponentially in the whole world. Researchers, technologists, doctors and other healthcare workers are working day and night on the development of vaccine and medicine to control and treat this virus. SARS-CoV-2 is the name of the virus responsible for causing COVID-19

disease , which is highly infections and lethal. with exponentially increasing infections ,proportionate fatalities are being reported both from developed and under developed countries.

- **Kasilingam** (1996) provided a concise review of the literature in the area of yield management and compared passenger yield management with cargo revenue management
- **Kasilingam** (1997) proposed an optimization model for air cargo over booking by calculating the over booking levels for discrete and continuous probability distributions of capacity.
- **Popescu et al.** (2006) presented an alternative nonparametric distribution estimation method to calculate the show-up rate for cargo booking and compared the proposed discrete distribution with the normal distribution by using real data from airlines. From an information system perspective,
- **Wang and kao** (2008) developed a fuzzy knowledge system to determine the overbooking level based on fuzzy reasoning, in which they expressed fuzzy decision rules in the form of triangular fuzzy numbers.
- **Qin et al** (2012) established a dynamic programming model to achieve dynamic space inventory control for air cargo with consideration of overbooking. Some important structure properties were elicited from their model.

- **Totamane et al** (2014) used the potluck problem approach to propose a multi-producer or multi consumer solution for predicting the cargo demand in a route.
- **Amaruchkul et al.** (2007) proposed a single flight Markov decision model to help airlines decide if a request from the freight forwarder should be accepted or rejected.
- **Amaruchkul and Lorchirachoonkul** (2011) extended this model to multiple flights by using a dynamic programming model and then proposed two heuristics to solve it. As an improvement to Amaruchkul et al s model.
- **Hellermann et al** (2013) proposed an options contract that considers the overbooking of forwarders. A numerical study further provided analysis about the impact of overbooking on contract parameters and profitability.

IV. RESEARCH METHODOLOGY

The coronavirus (COVID-19) Outbreak shows that pandemics and epidemics can seriously wreak havoc on supply chains (SC) around the globe . humanitarian logistics literature has extensively studied epidemic impacts ;how ever ,there exists a research gap in understanding of pandemic impacts in commercial SCs.To progrees in this direction ,we present a systematic analysis of the impacts of epidemic outbreaks on SCs guided by a structured literature review that collated a unique set of publications .

the literature review findings suggest that influenza was the most visible epidemic outbreak reported, and distribution emerged as the most popular topic. The streamlining of the literature helps us to reveal several new research tensions and novel categorizations/classifications. Most centrally, we propose a framework for operations and supply chain management at the times of COVID-19 pandemic spanning six perspectives, i.e., adaptation, digitalization, preparedness, recovery, ripple effect, and sustainability. Utilizing the outcomes of our analysis, we tease out a series of open research questions that would not be observed otherwise. Our study also emphasizes the need and offers directions to advance the literature on the impacts of the epidemic outbreaks on SCs framing a research agenda for scholars and practitioners working on this emerging research stream.

Coronavirus (COVID-19) endemic is growing exponentially in the whole world. Researchers, technologists, doctors and other healthcare workers are working day and night on the development of vaccine and medicine to control and treat this virus. SARS-CoV-2 is the name of virus responsible for causing infections, proportionate fatalities are being reported both from developed countries. As of today, more than one million people.

Logistics technology includes aviation in the planning, organization, administrative control and enforcement operations in air cargo supply chain. These individual components are connected to the carriage of cargo in collaboration with intermediaries of air freight, airports, airlines and air traffic services.

Logistics technology based on the interaction of among the various subsystems of the logistics chain. The momentum of logistics technologies is usually based on production, but it to be controlled by and market needs and options. Thus, market affects production, but this binding also applies as a feedback - i.e. production affects the market. This interaction affects the choice of logistics technology and vice versa, logistics technology can affect the connection between production and market. Selection of logistics technology

The design and selection of appropriate technology, logistics must be based on the following facts, The trend of the ratio of total logistics costs to the manufacturing costs for final products has been decreasing. It is the result of reducing and

optimizing inventory and the transport processes. The requirements of the transport market in the small, precise and frequent deliveries, which results in increased use of automated handling, transport and information systems.

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@14. Are you experiencing low sale of post covid time in air logistics

@15. How much loss did you face during covid time in air logistics BY @3. Age

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/MISSING ANALYSIS

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/POSTHOC=DUNCAN ALPHA(0.05).

Oneway

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[DataSet2]

		Descriptives				
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound
13.Is this air logistics costly?	1	61	1.21	.413	.053	1.11
	2	39	1.05	.223	.036	.98
	3	15	1.07	.258	.067	.92
	4	7	1.71	.488	.184	1.26
	Total	122	1.17	.379	.034	1.10
14.Are you experiencing low sale of post covid - time in air logistics	1	62	1.45	.502	.064	1.32
	2	39	1.13	.339	.054	1.02
	3	15	1.40	.507	.131	1.12
	4	7	1.71	.488	.184	1.26
	Total	123	1.36	.481	.043	1.27
15.How much loss did you face during covid-time in air logistics	1	62	1.65	.851	.108	1.43
	2	39	1.56	.502	.080	1.40
	3	15	1.47	.516	.133	1.18
	4	7	2.57	1.397	.528	1.28
	Total	123	1.65	.789	.071	1.51

		Descriptives		
		95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
13.Is this air logistics costly?	1	1.32	1	2
	2	1.12	1	2
	3	1.21	1	2
	4	2.17	1	2
	Total	1.24	1	2
14.Are you experiencing low sale of post covid - time in air logistics	1	1.58	1	2
	2	1.24	1	2
	3	1.68	1	2
	4	2.17	1	2

	Total	1.44	1	2
15.How much loss did you face during covid-time in air logistics	1	1.86	1	4
	2	1.73	1	2
	3	1.75	1	2
	4	3.86	1	4
	Total	1.79	1	4

ANOVA

		Sum of Squares	df	Mean Square	F
13.Is this air logistics costly?	Between Groups	2.896	3	.965	7.863
	Within Groups	14.489	118	.123	
	Total	17.385	121		
14.Are you experiencing low sale of post covid - time in air logistics	Between Groups	3.518	3	1.173	5.640
	Within Groups	24.742	119	.208	
	Total	28.260	122		
15.How much loss did you face during covid-time in air logistics	Between Groups	6.737	3	2.246	3.860
	Within Groups	69.231	119	.582	
	Total	75.967	122		

ANOVA

		Sig.
13.Is this air logistics costly?	Between Groups	.000
	Within Groups	
	Total	
14.Are you experiencing low sale of post covid - time in air logistics	Between Groups	.001
	Within Groups	
	Total	
15.How much loss did you face during covid-time in air logistics	Between Groups	.011
	Within Groups	
	Total	

Post Hoc Tests

Homogeneous Subsets

13. Is this air logistics costly?

Duncan^{a,b}

		Subset for alpha = 0.05	
3.Age	N	1	2
2	39	1.05	
3	15	1.07	
1	61	1.21	
4	7		1.71
Sig.		.223	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.901.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

14. Are you experiencing low sale of post covid - time in air logistics

Duncan^{a,b}

		Subset for alpha = 0.05	
3.Age	N	1	2
2	39	1.13	
3	15	1.40	1.40
1	62	1.45	1.45
4	7		1.71
Sig.		.060	.068

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.918.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

15.How much loss did you face during covid-time in air logistics

Duncan^{a,b}

		Subset for alpha = 0.05	
3.Age	N	1	2
3	15	1.47	
2	39	1.56	
1	62	1.65	
4	7		2.57
Sig.		.538	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.918.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

VI.CONCLUSIONS:

The airline industry is cyclical and sensitive to a number of external economic factors that affect the number of domestic and international travels, including consumer confidence and corporate profit. Improved economic conditions over the five years to 2016 have increased demand for both business and consumer travel. The newer aircrafts are continuing to update to satisfy the request from the consumers. There has been a tremendous surge in the percentage of people who are now travelling longer distance and becoming frequently flyers more than ever before. As far as changes in travel preferences Millennial are found to be willing to spend more on business travel than other generations when it comes to be business travel. Globally the aviation industry is consumers over 200 million tons of jet fuel per year .there is an increasing demand for international flight and airport are beginning to grow and airports now have a system to comply with passengers with connecting flights ,it is very important for airport to standardize their process in order to minimize passenger confusion benefiting the foot traffic of airport and making the airlines more profitable.

VII. REFERENCES:

JOURNALS:

- 1) Airports council international north American (AIC) (2004) 2003-2004 AIR cargo facilities and security survey summary, washington, DC.
- 2). Airports council international north American (AIC-NA) (2010). 2010 north America airport rankings, Washington, DC
- 3).Ashford, N.J., Mumayiz, S., and wright, P.H. (2011). Airport Engineering: planning, design and development of 21st century airports new York john wiley & sons.
- 4). Ballis, A (2007). Overview of air cargo terminal design aspects. Transportation

research record: journal of the transportation research board no. 2007.
Transportation research board of the national academics, Washington, DC, 117-125.

5). Bigges, D.C M.A. Bol, j. basker, G.D. Gosling, J.D. Franz, and J.P. cripwell. (2009).
ACRP report 26: guidebook for conducting airport user surveys. Transportation
research board.

6.) Allaz, camile (2005): the history of air cargo and airmail from the 18th century, p. 8

7) Morel, peter S. (2011): Moving boxes by air. The economics of international air
cargo

8).Jhonsson, Julie. "Big-belly boeing 777 Blunts Demand for cargo –only jets"

9). "A barrier to A380 sales in the united sates Runway Girl, 3 july 2014. Accessed: 20
july 2014.

10).Randy Tinseth (Apr 26, 2018). "air cargo carries growth momentum into 2018"

11).Wragg, David Airlift A history of Military Air transport shrewsbury airlife publishing
1986

12).Jhonson, brain& cozens, H. I. bombers the weapon of total war London Methuen
1984

13).Andrews and Morgen 1988.

14).Kay, Anthony (2004). Junkers aircraft and engines 1913 -1945 london: Putnam
aeronautical books.

15).Ben Hargreaves (sep 27, 2018) "Available Aircraft feedstock limiting cargo
conversions" Aviation week intelligence Network."