# FACTORS AFFECTING MARKETING STRATEGY IN MARITIME BUSINESS

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## ABSTRACT

Developing a marketing strategy evolves in the main concept of rightful definition of the products or chain of events which leads to creation of the core value of a company together with the quality service to its customers with in the scope of global indicators that effect the shipping markets. Main subjects included in thesis are the analysis of the dynamics governing marketing strategy and influencing factors around it, maritime sectoral groups and descriptions of concurrent marketing conditions are breifly documented. Different marketing mix and strategies can be implemented when it comes to maritime transportation considering global impacts on economic performance indexes such as freight and oil markets. General overview on marketing tools such as funnel and swot analysis has been underlined as to be fresh and convenient research areas.

# ÖZET

Pazarlama stratejisinin gelişimi, taşımacılık pazarını etkileyen global faktörler çerçevesinde bir şirketin ana değerini oluşturmaya yol açan olayların ve maddelerin doğru tanımlanması ve müşterilerine kaliteli servisin verilebilmesi ile yakın ilişkilidir. Tezde ana konular pazarlama stratejisini etkileyen dinamiklerin ve çevresel faktörlerin ortaya konması, denizcilik sektörel gruplarında ki mevcut pazar dinamikleri olarak dökümante edilmiştir. Deniz taşımacılığı söz konusu olduğunda faklı pazarlama bileşimi ve stratejilerinin uygulandığı görülmekte olup global etkenler olarak navlun ve petrol ekonomik peformans indisleri ele alınmıştır. Yeni ve kullanışlı diğer pazarlama araçları olarak funnel ve swot analizleri üzerine yapılmış olan araştırmalara yer verilmiştir.

To my lovely family whom has supported me and abled me to find courage and determination althrough my work.

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# INTRODUCTION

Marketing strategy has been defined by different perspectives through out the literatures and book writers, some of the definitions include the ability to use the marketing function at a company, to be able to achive goals, to develope the future schemes of an oragnisation. All three of the use of the concept is focusing on the same similarities and differences when the effort to gain more customer and increasing sales is organised and put to its most effective ratio.

There are four main approaches to explain marketing strategy; the marketing mix, the product life cycle, market share and competition and positioning. There are also special nieche marketing tools as such for developement for markets which will be defined later on.

The marketing mix consists of four principals, product strategy, distribution strategy, sales promotion strategy and pricing strategy. The mix of these elements are applied to general marketing strategy or vice versa. This approach is limited but it is observed to be used wideley. When it comes to maritime transportation this approach to be further structured according to business and market dynamics.

The product life cycle is used in correlation with the marketing mix, it is assumed as an application considering the different life stages of a product. Although it is difficult to estimate which marketing mix to apply at what stage and it is also hard to apply when product scale varies from eachother. In shipping and logistics the product becomes the transport service which duly diversifies from the life cycle stages of a phsycal product. Shipping cycle theory is generally considered and used in research areas regarding shipping markets.

Another approach used in marketing strategy is to take a perspective out of market share and competition which could be called and outbound strategy. With what specifications a company could define the optimal market share of its own given a set of requirements. After the identification  the strategy is evolved around so the target share could be reached at some cases even to decrease the market share. Some writers indicate these strategies as building, holding and harvesting strategies. Here there is a certain freedom range to the meaning of strategy there are different stragtegies and application of strategy not immediateley apperant. Shipbuilding Industry is a good example to put forward in this respect such a huge value which is

%80 credited by banks is not an investment that could be decided upon only outbound strategy but also at the least monitoring the freight, oil, shipbuilding markets very closeley and up to date. Present academic research and literature also focuses on new methodology and ways to make better estimations towards to future.

The other approach to the definition of strategy is to make use of the concept of position. Mentioned position could be according to the products sales, market share and profitability. Another way of putting it could be the selection from the market strategies and later on to consider it to be the component part of the corporate strategy. For some other point of view positioning is considered to be the relation with the customer it explains the profile and how customer percieves the goods. Another important way of explanation includes as which the company investigates the separation of a particular market and then decides on the segment or segments to participate in . This selection is defined as market positioning. Shipping market if considered as one logistic operation itself is divided according to labour differences, ship technical differences, supplier and cargo differences, world wide global routing of locations, geopolitical differences, environmental approaches and many more variables which positions each sectoral company into a segment of its own.

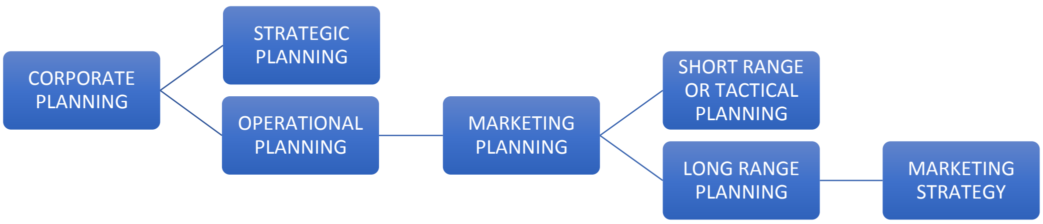
The fleet size defines the company size by means of tonnage, putting forward its competitive advantage. Shipowner could use both owned or chartered vessels to obtain a elacticity instrument. Owned vessels represent security during market upturns but fragile for market downturns. The way business and risk come together the way company shall design its tools. The potential for classification again arises to different segmentation as which vessel types and sizes vary. In the end we can assume different segmentations are independent from each other with medium long period decisions. These decisions are again correlated with risk, an investment such huge requires the reduction of the risk it bears with in. Diversification strategies help to monitor the risk and reduce it to a point. Although some researches state that in the long run concentrating on diverse segments is less efficient than focusing on one market. This is especially the case if different markets are strongly correlated in terms of time charter equivelent.

I find it important to express the concept of corporate planning which is a base stage neccesary before marketing strategy improvement. Corporate planning could be examined in two parts as strategic planning and operational planning. Strategic planning is indicating the objectives, mission and future vision of the company.

Operational planning includes the marketing planning which could be explained as short term tactical planning and long range planning which is also the marketing strategy. This definition thrieves its meaning from the point where company structures are similar and also when in depth very much particular in relation with segmentation and environmental factors. At operational planning, plans are the responsibility of the functional managers the main objective evolves around the success of the operation and future planning. Marketing is also a part of a function of the operational overview thus it is considered a part of the operational planning. Overall strategic planning of a company differs from operational planning as per ranges. Strategic planning is focused on long term planning towards missions which then needs to be transformed to short term tasks which operational planning and marketing planning has to overcome. Ofcourse this target based planning is limited with operational resources.

**Figure 1** The Relationship of Marketing Strategy to Corporate Planning

The Relationship of Marketing Strategy to Corporate Planning




Strategical planning on the other hand consists of overall planning towards the direction firms intend to move towards. Which creates the mission and objectives to follow. Performance analysis guide the company as which where as the current state is situated. SWOT[1] analysis is one way of quantifying the strategical planning.

The steps of strategic planning; Corporate Mission, Corporate Objectives, Internal and external streghts and weaknesses, Performance Gap Analysis,

[1] SWOT: Streghts, Weaknesses, Opportunities and Threads

Identification and evaluation of corporate strategies, choice of corporate strategy, preparation of strategic plan.

The initial step starts with the direction the company whishes to proceed or the long term vision as where the company see itself in the form of company mission and objectives. An example of a mission statement could be ’’To accelerate the world's transition to sustainable energy.’’ An than following with the objectives to achieve the mission such as low sulphur bunker usage or any technological advancements used to achieve the goal. Next step would be determining the internal and external strenghts and weaknesses that creates the gap between the objectives and current sitation and performance. After this stage company is ready for considering its strategy by directing resources to achive the objectives.

Entry to market and timing are other two concepts which requires deep research and analysis to be on the right side. Alternatives to market entry could be acquisition, collaboration and internal developement. Approach of acquiring another company is in close relationship with companies overall direction such as growth, competitive advantage and synergy. Collaboration with another company can provide market expertise, overall level of synergy has an important role before any sort of colloboration strategy. Internal developement strategy means the company does not require any involvement from other company, all marketing is developed with in its self resources. Choosing such a strategy would be affected by the objective element of the corporate mission, the level of synergy and also the rates of growth. Timing represents the point of time where the elements of marketing mix and the tactical plan is to be implemented. One of the approaches here is to link the strategy to current competitors market activity, here the strategy can be to be first to implement, or to be early or following the first company, or to take a later position, or even being one of the last companies to implement. Another approach of selecting times is to follow concurrent indicators from the external business environment. These can range from economic indicators, industry trends, seasonal trends, to trade exhibitions. Immediacy of the required growth has to be considered. Marketing strategy also relates to selecting the optimum timing to explore a particular market or market segment. The opportunity in the market can be defined as strategic window. Strategic window puts forward a companies anticipation and response towards an opportunity in the markets. The term is used to point out the limited period which the combination between the requirements of a market and the particular competencies of a company competing in the market is at an optimum. (Abell, 1995)

All marketing tools mentioned above can be applied to any market situation regardless of the nature of the market thus also shipping markets. But the important task in doing so threives from being able to understand the whole market environment of marketing operation within the related field. This includes both internal aspects plus the external environment of not only the market conditions but also the full macro-environment.

At a regular marketing mix there are 4P and 4C as breifly descripted below;

Product: The scope of the product or services, usage of positioning and brand.

Price: Payment, commision and discounts

Placement: Distribution or service connection methods.

Promotion: The method of advertisement

Customer: Studying of the customer needs.

Cost: The price customers are willing to pay

Convenience: Consider the customers requirements and provide easier ways to conduct.

Communication: Active correspondance and connection with the customers.

Although it may seem that they are interchangable in reality the 4P represents the link between the product or services to the customer although 4C represents the link between customer and the marketer. A successful marketing plan can be made with combination of both theories.

## 1.1 Background

### 1.1.1 Marketing strategy in shipping business

Marketing has been delayed to be implemented to services sectors in comparision with product based operated companies. Thus also implemented later to sea transport industry which is service oriented. Marketing early in the decade 1980-90 is followed by research on service quality but the concept has evolved to creating value for the customer. Shipping business is peculiar when it comes to marketing because in shipping, the clients does not physically see either the environment or the contact person situated at providers premises, before hiring the service, as the hiring is done via third parties from both sides who act as salesmen. Also when it comes the ship services quality we can not emphisize only the way the service is delivered we also have to consider vessel safety guides and ship related variables. Providers of the services are companies employees, subcontractors, brokers, agents, outsourced entities which what stands for People at marketing mix. Internal marketing to recruiting, training, motivating, rewarding and providing equipment and technology should also be taken into account.

Supply and demand at shipping sector can not be evaluated or calculated based on the actions of the individual firms nor the customer can be trained. Thus the analysis provided by the marketing to a shipping company is mostly a advisory philosophy and planning and success can not be gained right away. There is a gap between the marketing strategy point and the gain of profits due to the complexity of estimations at shipping sector. At tramp shipping companies thus the price is an out of control variable one has to focus on momentary leadership but this only saves the day.

In marketing science the practices should be perfectly alligned with the initial planning and intentions. The methodolgy used and the priciples applied to the companys marketing is stable and consists of the above mentioned bases such as marketing mix. Strategic thinking takes current inputs into consideration with todays environment and tries to build up a new scenario to play through in order to reach optimal targets. When developing further into the theory strategic marketing can be ammended and reshaped to become suitable for different or nieshe companies such as shipping companies. Corporate must be cautious that economic gain is a function of time and of competitive advantage. In all marketing sources, the term competatitive advantage has been encountered in place of strategy, a long list of plans and intentions, all producing complicated expressions resulting in self-organization of complexity.

It is important for the marketer to adjust to the point of view and focus that it is only this company and its affiliates together with the business environment which will gain market share. Key to success is not only to estimate the future advantage but also to generate it.

There is an argument regards to the disclosure of the marketing strategy, only few percent of companies actually declare their strategy publicly and get approval from affiliates. This depends on the characteristics of the market, if not a dominant market share is withold it is not reasonable to declare the short term strategy due to the high exposure to market volatility.

Shipping marketing mix consists of the following 8P's;

The Product-Service is the base, when shipping firms present new services on the market they face obsticals such as to introduce themselves to the consumers as they do not have any information on the new services or the firms reputation. Shipping companies reputation is mainly driven by the level of safety and security. For lineer shipping the services are predefined according to trading routes, on the other hand bulk shipping companies represent traditional tramp services where time and place of the cargo and the carrier is of importance. The safety of shipping services is legislated by the ISM Code(1998) and is compulsory applying safety standard also aiming to protect sea environment.

The Price-Freight: At the shipping market the agreement between the parties which are accompanied by their brokers are authorised by negotitions in line with current supply and demand framework. The freight rate is known to be very fluctuent due to concurrent variables effecting it, when settling gor a voyage charter both vessel owner and charterer subscribe to worldscale[2]. The system is centred on an estimate being made for each and every possible oil-tanker voyage, using the formula of a standard tanker with constant speed, bunker consumption, brokerage, etc. with the same total port time being allowed for each voyage estimated. (Packard, 1981)

The Process: Initially a cargo is sold by the producer to the merchant for further sale or distribution. Secondly the charterers broker explores a transport model and decides on the optimum vessel to transport. The shipowners broker negotiates and sets charterparty terms between charterer and owner. This charterparty is later on relayed to the operation field from the sales department(chartering) in order for the exercise to take place in respect of the shipper.

The People: Human element is of great importance specially on board the vessel. An operator also supervise the crew from office whom is called as ''designated person ashore'' is responsible for the safety of the vessel and cargo. Continious proffessional training and certification is possesed by the crew. There are many regulations in place to ensure rightful crew management and labour force is to be treated with well care.

[2] Worldwide tanker nominal freight scale

The Place: (the ports and world wide range or routing) From the starting point of the voyage of the vessel till the delivery point to shipper.

The Promotion: Maritime services are considered as ‘’experience goods’’ which means that the services are known to the shipper once they have been used. Experience is the first hand knowledge and if a new hire is to take place more guaranteed way to proceed from hirers perspective. Although this approach is of unreturnable expense thus brokers and affiliates gather information and provide actuel reports and vessel listings as to find the proper match between cargoes and ships continously.

The Physical Evidence: (the vessel specification) name, year of built, flag, cargo capacity, speed, draught, width and lenght, cargo handling equipment, number and type of holds, fuel consumption. The shipowner has to pursue the seawothiness and suitability of the vessel and the cargo according to charterparty.

The Paperless Trade, to spend less time with formalities and make the travel faster and thus more productive. Certain aspects are with in the control of the industry like electronic mail and internet. Others like edi files(vessel loading plans) are in the control of the Port Authority.

**Figure 2**

The Tools(8P's) of Shipping Marketing Mix


Note. From ''Plomaritou''2008,p.59-7. Reprinted with permission.

### 1.1.2 Differentiation and positioning strategies

In order to gain competitive advantage companies positioning and differentiation is the two modules which are preffered when modeling the marketing strategy. After the target market is detected successful shipping companies select differentiation to set themselves apart from the competitors. It requires skills apart from the cost leadership at the market. They offer a specific transportation service which is unique or advanced compared to the competitors or provide qualification which is superior in comparision. Which is a method which can be closeley observed in lineer shipping as to container companies whom share the world wide routing system with differences accompanying the market differentiation.

The differentiation approaches;

Qualitative Differentiation: According to charterers and shippers the quality of services include; reliability, frequency, flexibility and immediancy of service as well as the safe carriage of goods.

Geographical Differentiation: The enterprise may achieve this with the ability to manage the best network of trading routes at the global market place.

Personnel and Crew Differentiation: Providing crew onboard and ashore with continuous training and even providing simulation centers for further developement.

Image Differentiation: This is achieved by gaining the reputation by displaying how reliable and responsible the shipowning company is towards the cooperated parties such as bankers, insurers, suppliers, agents, charterers or even investors.

The company which is targeting to differentiate and gain competitive advantage should also goal to progress continuously so that its innovative approach and exercises are not easily copied by competitors.

Positioning strategy applies to the final targetted market segment including clients and business seeked to be served. The suitability of the positioning determines business growth and profit performance, another way of describing is to target the market segment which has the most competitive advantage for the company itself. Instead of promoting towards the total market to spend effort and source towards segmented and rightfully targeted service receivers.

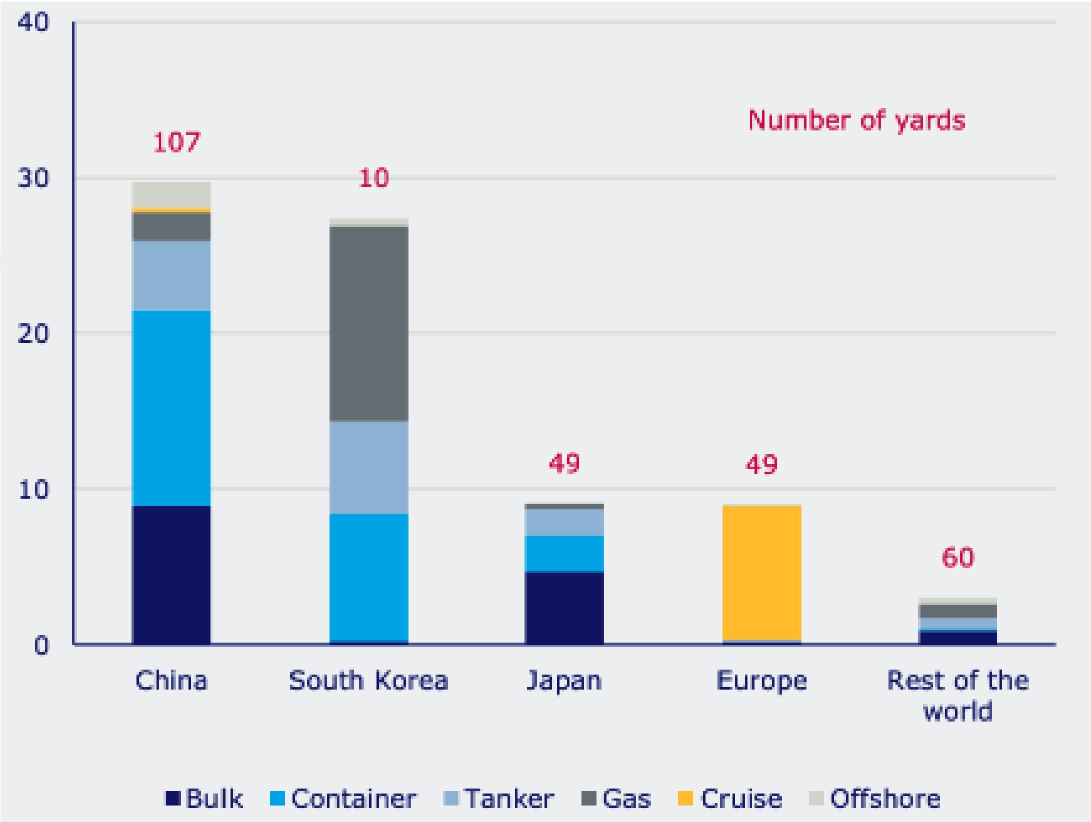
### 1.1.3 Marine markets

In the shipbuilding industry market competition is thrived by product diversification and technology together with production development. Capability, efficiency at facilities and workforce, systematical production process are all key factors for proper market share. According to researchers worldwide competitive shipbuilding locations can be referred to as Korean, Japanese and Chinese. Chinese shipbuilders are known to be more efficient with workforce and facilities whilst Japanese are more competitive with production management and capability. The

European shipbuilding market is more known for its specialization in high-valued vessels.

**Figure 3**

Shipyards Segmentation




Note. Number of yards in the world are shown indicated by vessel type, Source: (Danish Ship Finance, 2021)

In order to implement systematic production management, such factors as production process, inventory, human resources, quality, operation process, operation activity, material and production schedule need to be managed in an integrated way, and a supporting system is required. Especially, along the main activities of production management, production planning is a core process that determines a product need date (PND), manages inventory, and provides necessary information for human resource planning, including outsourcing. The objective of production planning is to improve the accuracy of production management and to increase productivity by optimizing the management of available resources. In this regard, production planning is essential for securing production competitiveness. (Jong Moo Lee, Jeong, & Hun, 2018)

The shipbuilding market is a competitive, global, and continually changing diverse market. It is dependent on the global shipping demand, volume of the global maritime trade, its structure and efficiency thus, on world economic growth. Both the shipbuilding and the maritime transport demand are affected by the performance of the international markets, being subjected to differentiations in the volume of the maritime trade. This gives a cyclical character to the shipbuilding market. The ship demand increases during the economic growth and drops during the recession. (Gasparotti & Rusu, 2018)

The demand for new ships is affected by multiple factors. According to a survey by SAJ (Shipbuilders' Associations of Japan) on the ship demand forecast, the main factors influencing its evolution are (Iwamoto, 2015):

Evolution of the world economy, evolution of the world energy consumption, changes in the average shipping distance, increasing of the fleet productivity as a result of the use of faster and/or larger vessels, ship demolitions.

There are also below main indicators when to determine market conditions at ship sales and purchase;

- Yard Capacity
- Yard Utilisation
- Deliveries
- Contracting
- Scrapping
- Order book
- Demand
- Travel Distances

The new building market is also affected by expectations concerning the degree of equilibrium between shipping capacity and transportation demand.

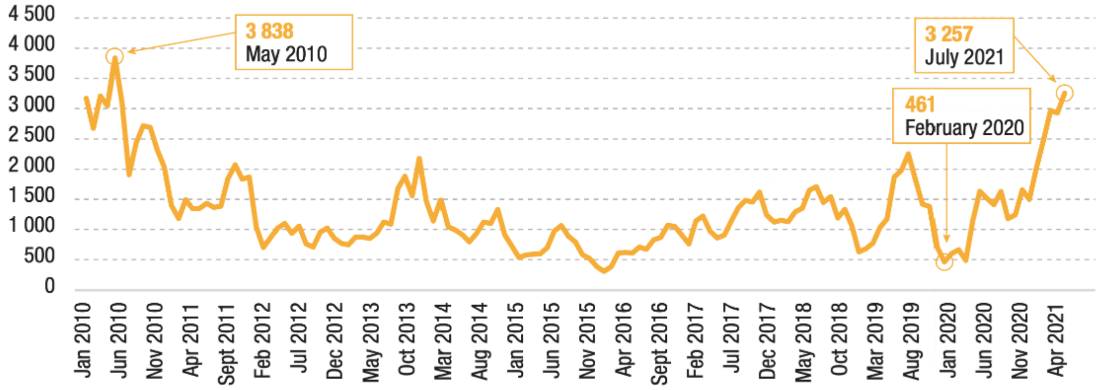
A dry bulk parcel is derived of raw material delivered in large quantities as unpackaged. Grain, metal and energy materials are along the goods that are transported in bulk by the sea in large freight vessels by shipping companies that specialize in dry bulk transportation. Storage and alteration, as well as technical problems and pre-delivery checks, are all part of the dry bulk shipping service before material or parts are shipped to the customer. Iron ore, coal, and grain are major bulks, while sugar, cement, and steel products are minor bulks. Coal is one of the most widely traded large bulks in terms of volume in dry bulk.

**Figure 4**.

Dry Bulk Shipping Market Segmentation

**Figure 5**

Baltic Exchange Dry Index, Jan 2010-July2021




Note: Performance indexes for drybulk freight. From UNCTAD, Clarkson Shipping Intelligence Network. Reprinted with permission.

The effect of the corona 2019 is also previewable at the above freight index for dry bulk shipping markets.

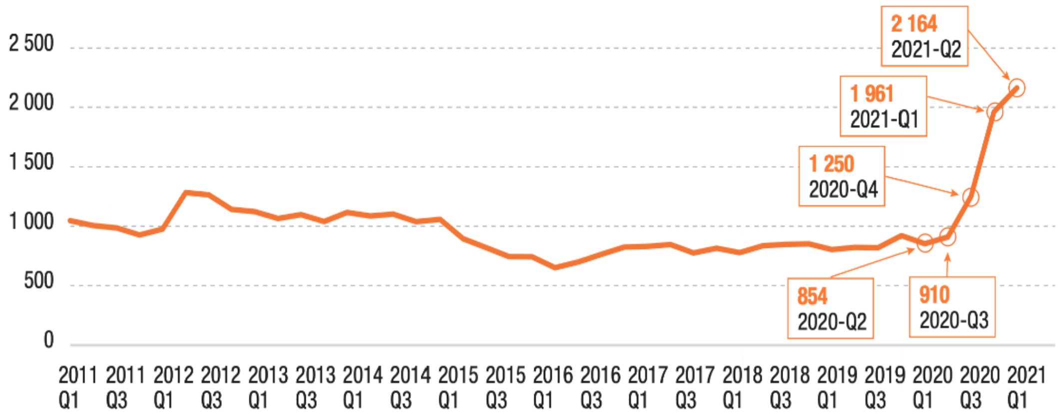
The freight rate is the price of a transportation service that cannot be traded or stored; the usual definition of the efficient market hypothesis does not attribute to the freight rate prices. However, the notion of market efficiency still applies in the freight market. Normally, it should not be possible to make excess profit by taking chartering positions in the freight market based on public information such as past levels of the spot freight rate or the shape of the term structure of freight rates. The chartering decisions should be based on identification of the peaks and troughs in the freight market cycles. The present research results suggest that a large tanker operator (a pool) could have achieved significant profits without investing in ships by trading on such information. (Malkiel, 2003)

Since the 1960s, container transportation has reduced the costs of international trade of commercial goods and increased its speed.

Container freight rate fluctuates due to the interactions between the demand for transportation and fleet capacity. When the rates are high shipping companies tend to order bigger container vessels to assign for the related routes.

**Figure 6.**

CCFI composite index, 2011-2021(Quarterly)




Note: Based on data from 22 carriers, spot and contract rates from chineese ports. From Clarkson Shipping, Shanghai Shipping Exchange. Reprinted with permission.

Container shortages, port congestion and delays has caused higher freight rates during 2019-2021. This is an evidentual happening when supply chain has been distrupted during coronavirus which caused bottlenecks overall the network of transportation.

Container markets as also seen above is at normal conditions less volatile compared to other shipping segments. This is due to monopoly characteristics of the market being shared between comparably constant players all around the globe. Competitions usually search for demand according to world wide route they are situated in and the local routes where they get more offer to require additional transportation at these cases they cooperate with merger agreements in between companies. This approach is not applicable at other segments such as bulk or oil transportation. Also intermodal transportation between logistic hubs is a main quality factor when customer decides to send their containers door to door. More flexible the company responds to clients more it shall gain advantage. Thus logistic developement is crucial to container shipping, can be defined as core module in respect of marketing overview.

Tanker vessels are diverse by categories as which deadweight tonnage; general-purpose, Handymax, Panamax, Aframax, Suezmax and Ultra carriers. This segmentation is based on the carrier capacity and the sea channel where it can pass through. For example, Suezmax can carry 150 deadweight tons and can pass through Suez channel.

Crude oil transportation is particularly important and an implication as an input for economic growth. Crude oil transport both supports international trade and puts forward the sensitivity of the international economic environment. During the 2008 financial crisis the crude oil price decreased to extremely low levels. These low prices also counter effected tanker freight market. The adjustments in supply and demand influenced periodic tanker freight rates. Another reason for the decline in freight rates is the new vessel order book which creates excessive capacity if higher than sectoral demand. Companies and shipyards decide on tanker charters, manufacturing and dismantling is also based on differences in tanker freight rates. Therefore, a correctful forecasting of tanker freight and estimation of volatility in market conditions are major subjects to be considered.

Freight rates being lower than profitability margin of a shipping company can also create concerns on maritime policy and administration. IMO [3] is concerned about keeping the standards on vessels and crew managements its mission statement is ‘’Safer Shipping and Cleaner Oceans’’. Whilst there is a strong and emerging developement in the area of avoiding accidents and providing sufficient crew training these require substantial amount of budgeting for the companies. Above mentioned issues are key points in environmental pollution and accidents. Undesirable incidents ussually take place when shipowners have insussicient earnings to maintain their ships and train their personnel. To keep business going vessel owners tries to reduce operational costs and even change crew with inexperienced ones with low salaries.

Insurance markets create tariffs for the coverage of hazards during the transportation, loading, and unloading process. Historically the marine insurance market is known to be emerged in London. Still the worlds most largest syndicate

[3] INTERNATIONAL MARITIME ORGANIZATION

market remain to be lloyds market. Every coverage policy is signed by the underwriters stating from datum and with the stated premium levels in the policy.

Marine Insurance products vary according to market players' coverage needs and capital equity providers. Which main ones are given below;

Hull & Machinery; is high value coverage from different providers at different percentages.

Protection & Indemnity; is a coverage for liability towards third parties which is commonly provided through pooling system where every owner accept to pay premium into and get covered at high liability levels.

War risk insurance is also an important insurance coverage because the companies making up the shipping sector are financially fragile. Many tramp companies are small and can not sustain the uninsured loss of one ship. Even the largest liner companies could be destroyed in the case of an uninsured loss of a few ships. Therefore, from the beginning of the war the keeping of credit against a collapse caused by panic or uncertainty became a problem of wartime statesmanship as urgent as the protection of shipping against the attacks of hostile raiders. War risk insurance management was addressed by the Committee for Imperial Defence (CID) in May 1913. The problem was that war risks could not be averaged for a general war, so underwriters had no idea of their exposure and insurance could not be issued. They also understood that war experience would develop the ability to estimate and average war risks, and that trade could not be permitted to stop. (Bailey, 2017)

# CHAPTER 2
# LITERATURE REVIEW

It is seen that many writers on the subject of marketing strategy provide different perspectives to the concept. (Greenley, 2018) discussed the concept of corporate planning and marketing planning. This valuable literature has been used to give the concept and provide insight to the subject thus following observations could be understandable for the simplified. The article concludes that in order to define the marketing strategy the company initially has to complete the strategic planning framework than working from this point a comprehensive definition of the marketing strategy coponent parts should be visible. Failure to complete this task leads to incomplete definition, application, and effeciency of marketing strategies. The marketing operation in companies in recent times has been targetting short term gains in revenue and profit thus tactics are applied for the short term developement of marketing although the overall and full marketing strategy is as of same importance. The factors that influence on selection of the strategy according to (Stevens, Louden, & Williamson, 2008) research work done on law business states as resources, company's competencies, company's life cycle stage and competitive strategies. The strategy to be implemented should be the best fit within consideration of above four factors. There could arise limitations if factors are not in line with the marketing strategy. With in the scope of the research the positioning strategies, service-market oriented strategies and competitive marketing strategies gives clues on observation key points for also shipping business.

The implementation of marketing strategy through orientation has been explored in the research (Dobni & Luffman, 2010). According to the researchers results market orientation provides a moderating function for implementation of marketing strategies in hich technology communication services. The definition of the marketing orientation is breifly the culture how employees think and act. Consideration of the culture in respect of marketing strategy implementation and performance is a discussion subject between researchers. It is nowadays considered as culture has an influence in strategy. Factor descriptions of market oriented behaviours are given as; Response design and implementation, formal intelligence generation, intelligence dissemination, Informal intelligence generation, planning and profit orientation, customer orientation. These are areas which also can be applied in container shipping companies due to container booking approval processeses at customer services.

Alexandros and Evi(2014) has examined the shipping marketing strategies with in the framework of complexity. The writers has applied several models in both servicing and complexity theory core elements such as dynamic life cycle of products and industries, strategy, leadership, team-work, safety and security culture. Peculuarities of maritime business when it comes to marketing strategies are described with the complexity theory and appliance to standard marketing strategy bases. The shipping marketing mix has been defined as a dynamic tool and requires the optimal combination of the marketin mix for a given market segment over time. Time and place apart from making the mix dynamic is equally important at shipping this means another point in time a different marketing mix has to be applied. It is mentioned that there is nonlinearity at the strategic marketing level.

According to (Teece, 2010) every firm starts with a business model which defines the architecture and design of the creation of value. it puts forward the outcome to the customer after then utilises the gain as profits. At the article the significance of the business models in connection to the strategy has been throughly explored. Since technologic developements allowing lower cost of information and easier customer solutions businesses are now required to find diverse ways to attract demand. Old fashioned supply driven approach seems to have been a part of the past. Without a well explored and up to target business model innovators can fail to capture value from their innovations. A succesful business model is expected to provide value to customer and in return obtain revenue to fullfill its duties. But the model itself is not sufficient to win competitive advantage in the market. With in time the model gets to be used by other competitors and becomes a shared value. Coming up with isolation mechanism to protect the business model together with segments and this avoiding it from bein replicated, marketing secrecy is this angle to consider after acquiring the portfolio, which facts to declare and which to define as secret has been evaluated inb the research paper (Berthon, Lord, Hannah, & Parent, 2020); Secrets can attract or dispell customers or even create speculations about the company in the market. Thus ultmost care should be given to this grey area when marketing for products of any including maritime business. Current literature in this field is limited as of now, further exploration is expected according to the researcher. Management of information is vital and of importance, information exchange between customers, competitors and stakeholders even collegues. For example a former collegue of marketing division of a company decides to transfer portfolio to next company in the same sector, what would the job ethics say at such grey areas is further to be explored. Setting boundaries is an initial step in managing marketing affairs, company can not determine how others will see the boundry, plus although a boundry has been placed it can lose its ability over time.

Every business needs to acquire new customers in order to grow or start up, including maritime affairs. According to literature (Sapian & Vyshnevska, 2019) generating new customers requires funnel technique which is basically guiding target clients throughout the purchase process and turning them into buying customers. Company should consider how to attract clients, relating them and conversion stages a role in healthy marketing. The researcher explores the traditional funnel method awareness, interest, desire, action respectiveley. Awareness represents the problems of the customers and the solutions the company provides. It's a happening whilst the company brand is exposed apposed to the competitors for the possible clients whom are called prospects. This can be done through activities such as webinars, workshop sor other channels on reaching customer. At the stage interest customers start to acknowledge the products or services presented and the company must assure prospects on providing service compatible to the customers requirements. Next step is desire where the customer intends to buy but doesent address from which company. At last action stage they either purchase or change their mind. Funneling continues repeatedeley for all prospects althroughout the marketing process. Research also addresses the next tool as customer value optimization which where the return path back to the funnel process is secured by the marketer.

(Jong Moo Lee, Jeong, & Hun, 2018) intends not only to structure a systematic and integrated process of production planning in shipbuilding companies but also to offer an evaluation of production planning to build a system that can evaluate production planning repeatedly enough to cover every decision making point and functional organization of a shipbuilding company. The planning takes marketing as a perspective togather with design, procurement, production, personnel and finance. Key information on evaluation is factors such as target, method, relation, main agent, time and object.

When the key information is defined for each perspective researcher implies that strategic outline can be determined successfully. The researcher concludes with the real evaluation system for a virtual shipyard it is based on an production planning analysis of a huge Korean shipyard. The Industry 4.0 idea, proposed in Germany, is developing the shipbuilding industry. Korean shipbuilding industry is also getting ready for the intelligentisation and automation of shipbuilding production management. The application of the mentioned evaluation method of shipyard management system to actuel developed technology, simulation based production management system can be considered as an innovative approach. Researcher (Gasparotti & Rusu, 2018) has explored shipbuilding markets and put forward the forecasting for 2018-2035, according to the findings demand for newbuilding ships is getting higher but with small rates, smaller than the previous years. After 2008 crisis because of over supply of vessels shipbuilding markets has also been affected negativeley. Low level of GDP also had an adverse effect for the industry.

Below mentioned literature is developed around two principles which are updated market conditions for both transport freight and crude oil. (Bai, 2021) focuses on the relationship between tanker freight rates and global uncertainty. With mathematical approach freight rate volatility spillovers across sectors such as maritime transportation, oil market, stock market and commodity market has been examined. The researcher chooses wavelet based capula approach to explore the diverse relationship between tanker freight rates and uncertainty measures. As a result the constant correlation coefficient is not sufficient to describe the relation between freight rates, policy uncertainty. The findings of this research can be of value for shipowner companies whom contract time charters with different durations. Banks and loan financers can also make a better prediction of the future trends.

Researcher (Scarsi, 2007) stresses out the point of cycling behaviour of freight market and investigates shipowner reaction towards the cycles, the points in which a shipowner company has troubles on deciding to add a new vessel to its fleet and how to position the vessel in means of chartering types such as spot or time charter. The overview is that the volatility and uncertainty throughout the markets effect the decision maker although clear approaches with given effort on estimating the demand market can provide insight and rightfull path making. Demand market is implied to be the main drill due to the volatility ratio of the freights on the other hand supply market is considerably easier to estimated due to clear ship order books.

The identification of the peaks and throughs at a stock market and evaluation of efficient marketing hypothesis is explored through the valuable document (Malkiel, 2003). Although its not exactly applicable to freight markets due to the characteristics with in it gives a scope as to interperet the financial data. Undetermined behavior of stock prices is existent although it does not imply an opening that lets investors to earn extraordinary risk adjusted returns. Same can be utilised for also freight market returns, which basically means there is very small or none profit from incidential cycles such as covid-19 effect on the market. Whilst the market in the short period may be a scoring mechanism, in the long period it is a weighing mechanism.

Freight market is affected by crude oil prices (Choi & Seong-Min, 2020), explores the affects by proposing new methodology decomposition and copula approach which can put forward the time differentiating effects and asymmetry in the tail dependence structure between rates. Main results of the experiment puts forward that dependence in extreme times like financial crisis and dependence increase at a economic boost. The results say that dependence can be different over time and change relying on extreme events, implying that the strategies should be different in the long run and short run.

Prices plummeting due to Covid-19 and the OPEC and non-OPEC countries actions together with re settlement towards price is throughly explored in the up to date literature (Hanieh, 2021). According to the latest situation poorer oil exporters seems to be at the risky part when oil crisis takes place this puts preassure on countries such as Venezuela Ecuador and Iran two of which is also dealing with US Sanctions. Nigeria is one of them as they depend on oil 57pct of government revenue. Researcher emphasizes on the industry shock in means of politics concerning fossil fuel usage. First half of 2020 when the everday car usage plumetted oil prices decreased as 5 percent, the plunge has even exceeded 2008 global financial crisis. Some researchers observed the situation  as an opportunity for transition away from fossil fuel energy usage. Another perspective for the Covid outbreak has been put forward by (Ling Xu, Li, Chi Chu, & Dinca, 2021) the writer has taken interest on transportation and logistics sector in China after the outbreak. The lockdown has severley affected the logistics and transportation both moving of cargo and storage. The existing intermodal companies got adverseley affected by the bottlenecks in supply chain in one of the biggest supplier country China. Restrictions on truck deliveries have seen to 15 percent at the beginning of Covid and managed to go up to

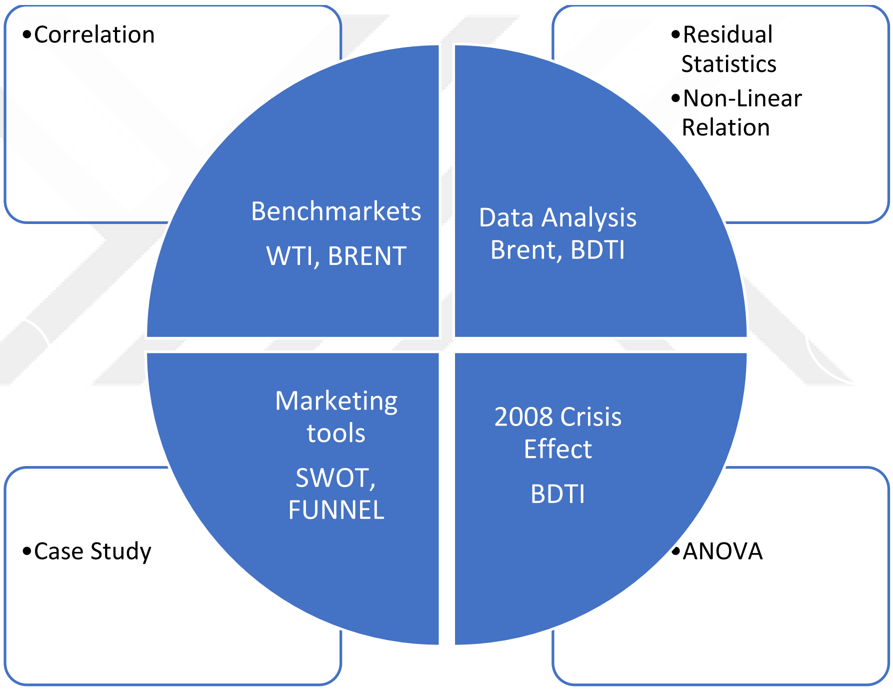
%92 in february 2020, this shows the successful recovery at China. Container sector has also been affected in means of performance showing weak demand on supply due to virus threat. Researcher also demonstrates hypothesis test on the affect of Covid-19 on three transport modes; land, air and seabourne. The result has been interpreted as significant on both land and air although rejected on sea trade. This means there has been less effect on maritime transportation compared to land and air. (Zhao, Weiguo, Gong, & Wang, 2021) explores the comparison of modeling techniques to imply the effect of covid outbreak on crude oil prices.

(Bailey, 2017) puts forward the wartime exploited areas for maritime global affairs including war risk insurances and financial organizations to protect international trade during the years 1915-1916. In my opinion at insurance markets the relationship is more clear regards to the global effect and how system reacts to instant impacts of actuel incidents such as crisis and war like scenarios.

# CHAPTER 3
# 3.RESEARCH METHOD

**Figure 7**

Methodology Breakdown Scheme




The applied methods are basic and simple only to be able to monitor the effect of the important activities in the transportation and maritime sector. Also taking into account the data characteristics of benchmarkets and freight market indices. Introduction of marketing tools which are providing insight on developing new expeditions.

### 3.1. Data Selection

Crude oil prices and freight prices has been taken into consideration in order to reflect trends in marine transportation world wide. Study focus is on the driving forces behind Crude oil prices of Brent and Dubai benchmarks. The demand for oil refinery products, OPEC[4] decisions and transportation costs, global trends, international policy sanctions are some of the main factors influencing market conditions. There are certain liquid bulk commodities such as crude oil petroleum products, chemicals, liquified natural gas and vegetable oil. Crude oil price is one of the data groups used when trying to explain the effect of global economic fluctuations to the marine markets. Also huge energy consumption around the world has a big share on demand for crude oil. Such a sensitive indicator is closeley monitored by researcher, policy makers and investors to project future trends in the markets. There are many types of crude oil blends which are benchmarked such as WTI, Brent and Dubai. Supply demand, and will towards future contracts, which are traded heavily by speculators, play a dominant role in price determination.

The latest OPEC Monthly Oil Market Report projected world oil demand to increase by 2.2mb/d year-on-year in 2023.

Crude oil is transported by tanker vessels which are divided into groups by their voyage specifications and deadweight measures. Meidum Range (25.000-50.000 dwt), Panamax(50.000-75.000dwt), Aframax(75.000-120.000), Suezmax(120.000-180.000 dwt), VLCC(200.000-320.000 dwt), ULCC(320.000 dwt).

When a tanker owner company leases vessels to shippers or charterers each party has to obey charter parties-well organised contracts with globally recognised formats that each party signs and agrees to its terms such as freight to be paid, vessel delivery conditions, schedule time. Tanker freight assesment is a delicate issue, freight is calculated parallel with voyage estimation, bunker consumption, running costs of the fleet owned. Also researches done regards to global estimates and economic market conditions is also considerably important. Below diagram shows the determination factors for Baltic Dirty Tanker Index(BDTI);

**Table 1**

Determinants of Freight Index BDTI

---

[4] Organization of the Petroleum Exporting Countries

| Parameters | |
|---|---|
| Route&Haul | Oil Demand/ Oil Supply |
| Cost&Revenue | Oil Price(Brent Price)<br>World Economy(S&P Charts, Dow Jones) |
| Vessel Specification | Shipping Capacity |

The importance of a benchmark in the oil market is that benchmarks serve as a reference price for buyers and sellers of crude oil. Oil benchmarks are repeatedly quoted in the media as the price of oil. Though Brent crude and WTI crude are the most popular benchmarks, their prices are often used by the market players. The difference in price between Brent and WTI is called the Brent WTI spread. Each one of them has unique supply and demand variables.

**Table 2**

Comparison of Brent Oil and West Texas Intermediate (WTI) benchmarks

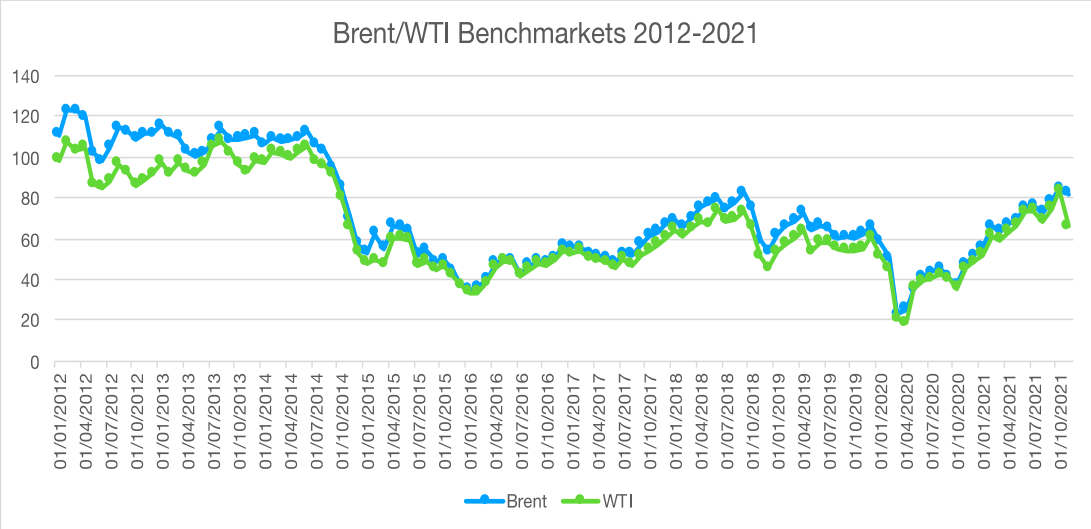
| BRENT | WTI |
|---|---|
| Most Popular | Less Popular |
| Relatively higher Sulphur content | Low Sulphur Content |
| Price scale is high compared to | Current price scale is lower |

Benchmarkets does not exactly give the settled price between parties it can differ with a wide range when it comes to actuel sales agreement between oil exporter and importer. Crisis situations are controlled by global price regulations which are put forward by the OPEC and non-OPEC countries.

As below chart shows the index performance levels.

**Figure 8**

Data Time Series




Note. Above data taken is in between 2012-2021 from both oil prices.

As seen above both benchmarkets react vertically approximateley at the same dates. These are performance levels for oil prices lower estimates show more supply then demand and higher estimates show higher demand then supply. But does it imply a flexible supply and demand curve as such in other commodity prices. There are arguments regarding this issue some explorers state that organisation price regulations and oil supply stock management governs heavily comparision to free trade princibles. One must take this into account befor analysis.

Covid-19 in 2020 has hit oil markets plummeting the rates at a very low level. Producers rushed for land space where they can stock the oil instead of selling it at low prices. (Hanieh, 2021)

Data collected as freight index (BDTI) and crude oil price WTI and Brent for the last 10 years monthly.

### 3.2. Research Design

The initial method Pearson Correlation is applied to preview the relation between two benchmarks Brent and WTI. The bivariate Pearson Correlation conducts a sample correlation coefficient, *r*, which calculates the strength and direction of linear relationships between pairs of continuous variables. By extension, the Pearson Correlation puts out whether there is statistical evidence for a linear relationship among the same pairs of variables in the population, represented by a population correlation coefficient, ρ. It is a parametric measure. All data requirements are met when appliance of the method.

- Two ore more continous variables
- Non-missing measures on both variables
- Linear Relationship between the variables
- Independence of observations
- Bivariate Normality
- No outliers

A probable estimation is made by using the linear trend line method. The linear trend line method is known as Chi Square analysis.

**Figure 9**

Linear trend line formula

$$a = \frac{\sum y - b \sum x}{n}$$

$$b = \frac{n \sum (xy) - (\sum x)(\sum y)}{n \sum x^2 - (\sum x)^2}$$

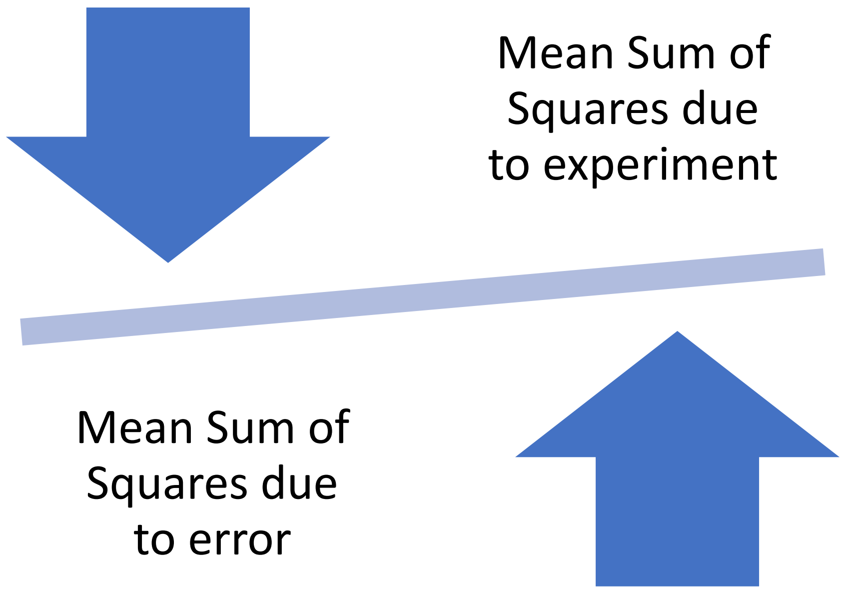
$x$ = **The current time period**

$n$ = **The number of time periods**

Analysis of variance is an analysis tool used in statistics that splits an observed aggregate variability found inside a data set into two parts: systematic factors and random factors. It has been created by Ronald Fisher in 1918 the systematic factors have a statistical influence on the given data set, while the random factors do not. Analysts use the ANOVA test to determine the influence that independent variables have on the dependent variable in a regression study. technique is employed for comparing means of data coming from two or more populations. At least two levels for each factor and at least two factors exist. The variation in the means is analyzed through sum of squares to detect degree of importance of factor(s) and related interactions. The analysis can be randomized and replicated but unbiased measurement should be done by the user. Unbiased randomized analysis is possible when user allocates experimental units to variable factors (or policies) ideally through a random process using equal probabilities with logical quantitative or qualitative values of the treatments. Experiments are performed to compare treatments or factors and obtain variability through repeated observations or replicates in ANOVA.

**Figure 10**

ANOVA coefficient, F ratio




One way Anova has been used to present the affects of 2008 crisis on shipping freights, three groups have been randomly created according to time lane; before crisis effect, after crisis and stable and up to date period where there has not been a major crisis. In order to quantify freight rates, Baltic dirty tanker index (BDTI) data has been used.

Decision making analysis can be taken from various angles as business development point of view we shall mention SWOT analysis and Marketing Funnel then apply a quick decision matrix on how to preliminary decide on spending of marketing budget for a new market.

SWOT analysis is a way for identification of the present situation, can be considered to be a useful tool to freeze the current situation to observe the internal and outside obstacles on the way to a target which has been clearly defined. The target in this case will be to decide on budget allocation for marketing activity such as workshops, and the application of various prospecting techniques to acquire new clients.

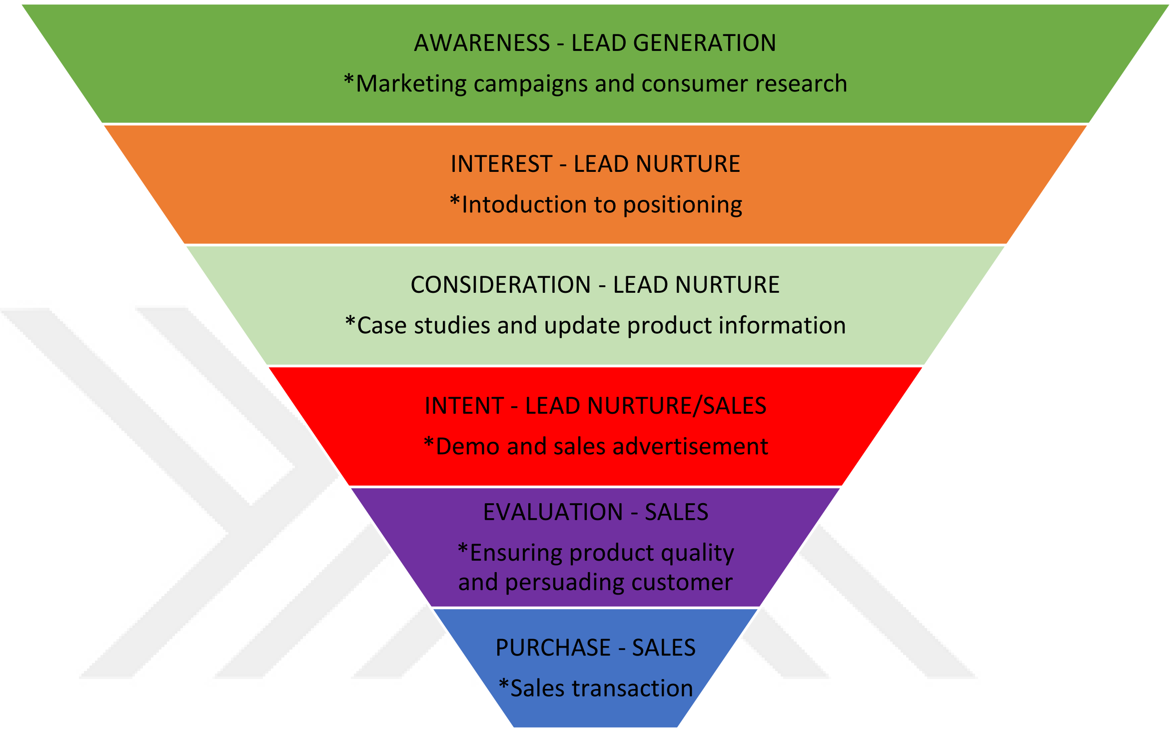
**Figure 11** SWOT Analysis Diagram

SWOT Analysis Diagram


Marketing funnel is a business tool used when acquiring customers, turning prospected client into real customers. Thus instead of the method for decision making it is taken as an assumption towards the second step as to where there is adequate amount of prospects whom has been gained in the result of new marketing strategy.

**Figure 12**

Marketing Funnel Diagram




Initial step is lead generation where the possible client as also referred to as prospects are located and contacted to apply commercial tools such as organising events, workshops, electronic groups. Secondly the interested parties shall be relayed to their actual position with regards to the service or product being given. Consideration phase implies where to clearly define the product to the prospect using workshops, seminars and updated events connected with in. Sales phase is divided to three parts which in the end completes with actual sale transaction. Why the shape is a conus is because of the initial stage where awareness is you may have large quantity of possible customers but in the end the target population shall be lots smaller quantity.

# CHAPTER 4
# 4.RESULTS

The shipping cycle has four stages.

- Through: Shipping capacity reduces freights near operating costs, second hand ship sales increase while the shipbuilding orderbook reduces
- Recovery: supply and demand move towards balance, freights increase
- Peak: Freights are high and orderbook expands
- Collapse: Supply overtakes demand and freights get lower (Scarsi, 2007)

The time difference between buying and selling a vessel is of importance and can be considered as a reason for the cyclical character of the market. Usually when a new vessel is ordered the actual operation of the vessel will be 2-4 years of time lag.

Depression of a market shall worsen when new vessels which were bought when the conditions were better add up to the operating fleet.

When operating the fleet vessels owner usually decides on freight distribution on voyage and time charter basis. On voyage charter there is a chance of getting good spot rates but on the other hand it is volatile to market conditions concurrently. On time charter owners can find security to pay off loans at a steady freight rate. There are also ship pools designated and organized to beat market volatility for ship owner members.

Rational way of putting it as a correct evaluation of the expected development of the market cycle as which; buying low, selling high, spot chartering at an increasing market and taking a time charter when rates are high should be efficient for the shipowner’s company. This is of course the case apart from the incidental happenings such as damage to the fleet or geopolitical decisions or economic crisis affecting the market conditions. The main problem is there is no actual guess on when shipping cycles turn around, shipping cycles are sequences of through and peak periods overall. The second approach is the difficulty level of methods which vary from researcher to researcher all over the globe. The third problem is the lagging period between buying and operating a vessel within a 2–4-year period of time there could be many changes within the shipping market.

A ship that has been bought at the correct timing pays off the break-even point much faster thus enabling the profitability to affect the whole of the balance sheet.

When selling the vessel, the market conditions would be at their peak so the secondhand market could offer better selling prices.

About chartering of the vessel main look out point is when there is a word spreading that the volatility of freight market could be a problem that is when chartering on time basis could secure the owner from low rates.

**Table 3**

World fleet by principal vessel type, 2020-2021

| Principal Types | 2020 | | 2021 | | Percentage change 21 over 20 |
|---|---|---|---|---|---|
| Bulk Carriers | 879 725 | %42.47 | 913 032 | %42.77 | %3.79 |
| Oil Tankers | 601 342 | %29.03 | 619 148 | %29 | %2.96 |
| Container Ships | 274 973 | %13.27 | 281 784 | %13.20 | %2.48 |
| Other: | 238 705 | %11.52 | 243 922 | %11.43 | %2.19 |
| Offshore | 84 049 | %4.06 | 84 094 | %3.94 | %0.05 |
| Gas Carriers | 73 685 | %3.56 | 77 455 | %3.63 | %5.12 |
| Chemical Tankers | 47 480 | %2.29 | 48 858 | %2.29 | %2.90 |
| other | 25 500 | %1.23 | 25 407 | %1.19 | -%0.36 |
| Ferries | 7 992 | %0.39 | 8 109 | %0.38 | %1.46 |
| General cargo | 76 893 | %3.71 | 76 754 | %3.60 | -%0.18 |
| World total | 2 071 638 | | 2 134 640 | | %3.04 |

Note. Based on UNCTAD[5] calculations (thousand deadweight tons and percentage)

[5] United Nations Conference on Trade and Developement

The above chart gives an idea of fleet growth, classified according to different segments. Gas carriers have been the fastest growing segment compared to others, there is a probability that this can be seen as a rise in global demand for gas trade or also can be interpreted as higher supply than demand thus resulting in lower freight rates. Fleet capacity levels are quite unpredictable due to uncertainty considering different markets which are diversified althrough the investors global locations. As it is seen for tanker fleet although at a rough period the fleet has grown as 2.96. One might expect this rate to fall due to lower freight rates but this is not so simple to interperet because of the cycling period which could be at a average range of 6-7 years according to speculative happenings such as covid-19, wars, financial crisis. Prior research has concluded that crises formed part of a wave-like mechanism, acting on economy. Shipowners and maritime economists must be able to predict depression cycles before opening up an order book for their fleet. Perfect timing in decision making has always been a task where shipping companies find themselves vulnarable towards. Recent studies aim to estimate by various stochastic and forecasting techniques which to follow with technological developements.

Freight rates are the result of market adjustments and vessel operators are the takers of the last price. Asset movements are huge margins the end sale price of a ship is connected to freight market but also the outlook of the market meaning the forecasts about future market conditions. They depend on available information but also on the ability to read the present market conditions correctfully. Due to the market transperancy expetations normally move towards the same direction. This means when the market is towards growth, it is well known eventually it will collapse and vice versa. At this case real difference originates from individual perspectives and ofcourse from luck. (Scarsi, 2007)

The null hypothesis ($H_0$) and alternative hypothesis ($H_1$) of the significance test for correlation can be expressed in the following;

One-tailed significance test:

$H_0$: $\rho = 0$ ("the population correlation coefficient is 0; there is no association")

$H_1$: $\rho > 0$ ("the population correlation coefficient is greater than 0; a positive correlation could exist")

$H_1$: $\rho < 0$ ("the population correlation coefficient is less than 0; a negative correlation could exist") where $\rho$ is the population correlation coefficient.

**Table 4**

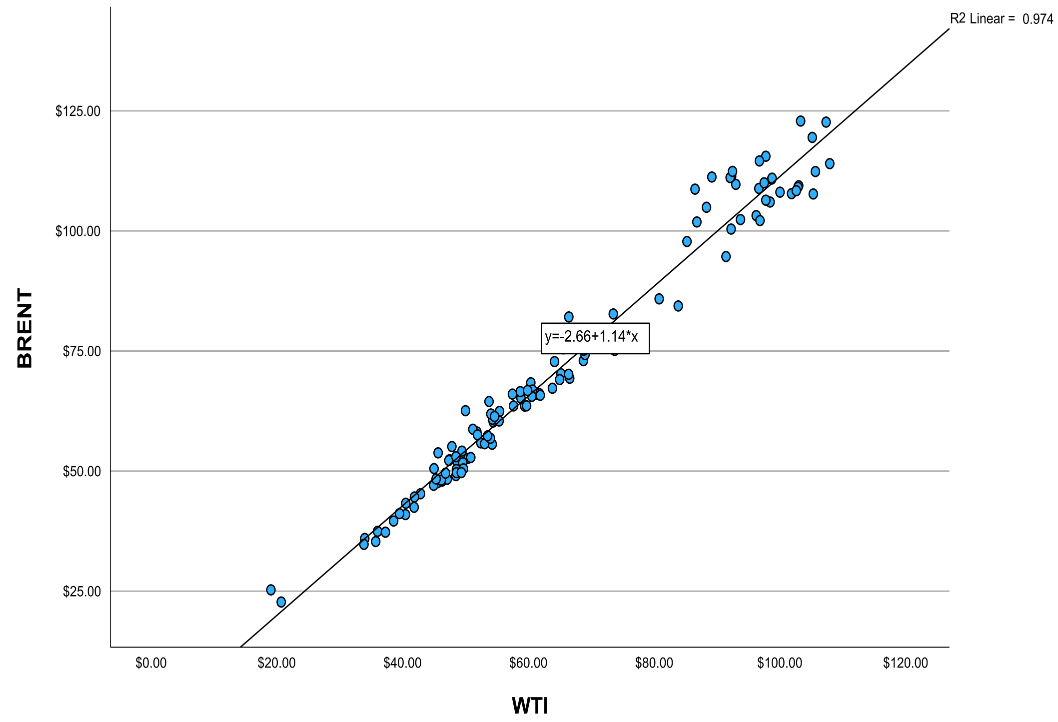
Correlation Results for Brent and WTI Benchmarks

| Correlations | | | |
|---|---|---|---|
| | | BRENT | WTI |
| BRENT | Pearson Correlation | 1 | .987** |
| | Sig. (1-tailed) | | <.001 |
| | N | 119 | 119 |
| WTI | Pearson Correlation | .987** | 1 |
| | Sig. (1-tailed) | <.001 | |
| | N | 119 | 119 |
| **. Correlation is significant at the 0.01 level (1-tailed). | | | |

According to the above test results correlation coefficient is 0.987 which reveals the fact of positive linear relationship between data groups which has been taken from Brent and WTI markets. As one increases the other responds the same way. A trend in oil markets has a similar effect on both bench markets. This close relationship is merely a result of a strict and timely manner of price setting within the scope of regulations governing the global market.

**Figure 13**

Scatter Plot with r value

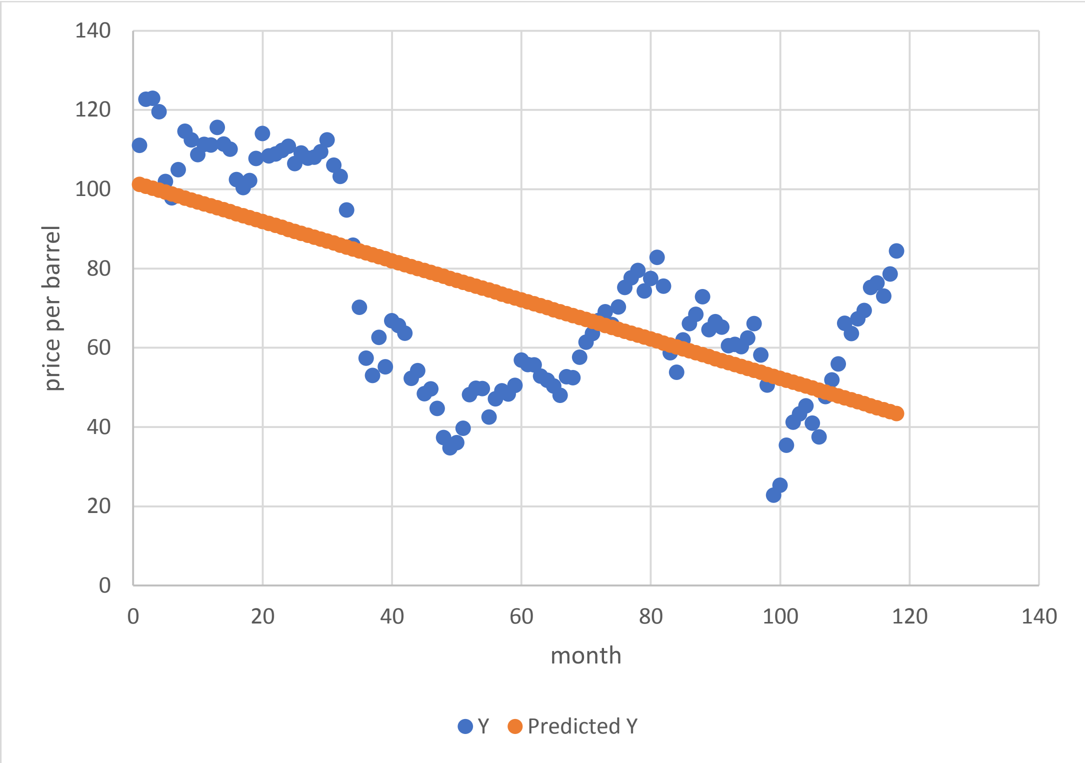



Although both benchmarkets are driven by different parameters such as different geographical locations and different supply and demand values they show huge correlation in between. This underlines the following statement of global drivers being in place for both oil markets.

When linear regression applied for Crude oil data following outcomes reveal.
Brent Crude Oil:
As seen as below chart crude oil price data is quite volatile, thus the trend estimation could be deviated from actual price with a higher range. Volatility is valid even at the index, there is also the realisation point of view where prices also differ from the benchmark data itself.

**Figure 14**

Brent Crude Oil Prices- Line Fit  Plot




Simple Linear Regression Model is applied to BDTI and Brent Oil Price after data convergence. Convergence is necessary because of the economical character and the raw time lapsed specification of the collected data we concurrently use. First we apply below residual analysis of the raw data. An according to the negative result we can interpret that there is a outlier that will stand out at the scatter plot.

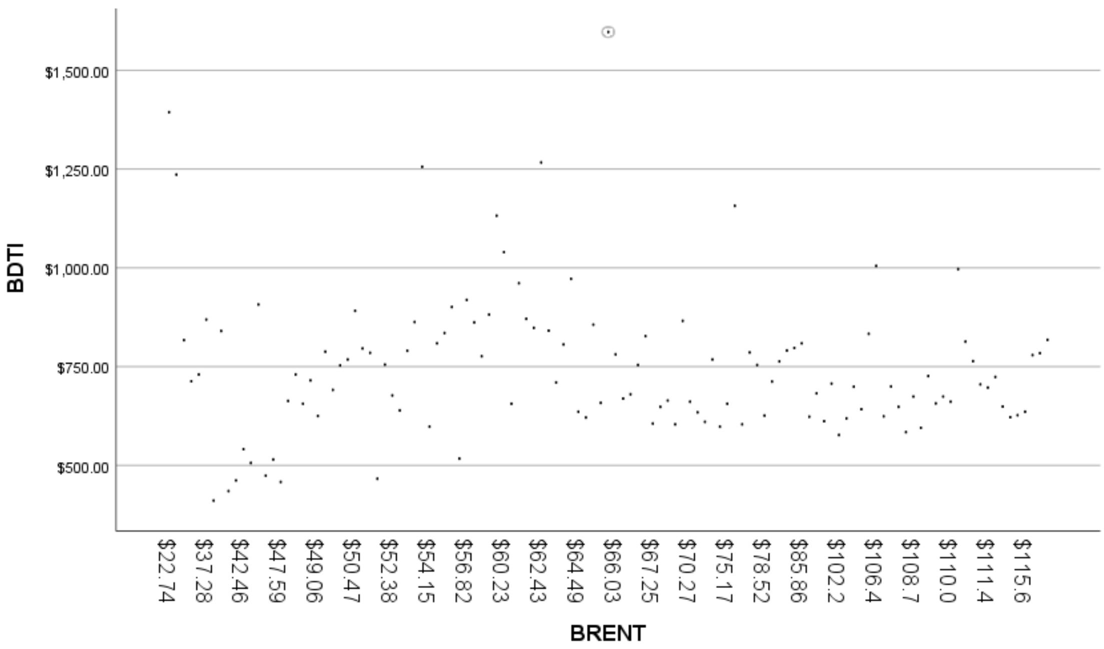
**Table 5**

Residuel Statistics for BDTI and Brent

| Residuals Statistics | | | | | |
|---|---|---|---|---|---|
| | Minimum | Maximum | Mean | Std. Deviation | N |
| Predicted Value | $721.92 | $723.78 | $722.96 | $0.53 | 114 |
| Residual | ($312.72) | $434.08 | $0.00 | $137.76 | 114 |
| Std. Predicted Value | -1.945 | 1.527 | 0 | 1 | 114 |
| Std. Residual | **-2.26** | **3.137** | 0 | 0.996 | 114 |
| a. Dependent Variable: BDTI | | | | | |

**Figure 15**

Scatter Plot and Outliers



The above outlier is the data taken during impact of coronavirus 2019 where which the supply chain crisis took place creating high freight rate peaks although oil price was at its course. The related outlier has been deleted to reflect simple lineer regression observation validating the data specification rules.

**Table 6**

Lineer Regressin Model

| Descriptive Statistics | | | |
|---|---|---|---|
| | Mean | Std. Deviation | N |
| BDTI | $722.96 | $137.76 | 114 |
| BRENT | $73.50 | $25.39 | 114 |

| Correlations | | | |
|---|---|---|---|
| | | BDTI | BRENT |
| Pearson Correlation | BDTI | 1 | -0.004 |
| | BRENT | -0.004 | 1 |
| Sig. (1-tailed) | BDTI | . | 0.484 |
| | BRENT | 0.484 | . |
| N | BDTI | 114 | 114 |
| | BRENT | 114 | 114 |
| Variables correlate at a negative 0.004 | | | |

| Variables Entered/Removed | | | |
|---|---|---|---|
| Model | Variables Entered | Variables Removed | Method |
| 1 | BRENT[b] | . | Enter |
| a. Dependent Variable: BDTI | | | |
| b. All requested variables entered. | | | |

| Model Summary[b] | | | | | |
|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
| 1 | .004[a] | 0 | -0.009 | $138.37 | 0.554 |
| a. Predictors: (Constant), BRENT | | | | | |
| b. Dependent Variable: BDTI | | | | | |

According to pearson correlation as resulted negative we can come to an assumption as bunker price is much more relavant and has a greater impact on freight market rather than demand for oil transportation. Because when oil prices goes up it actually means the demand for oil has gone up which at first sight gives an idea as if transportation demand will also go up which is true but when it comes to numbers taken from last 10 years data overall lump-sum calculation shows that oil price which rises effects freight rates negativeley. This means for the last ten years bunker price of a vessel effected its nominal revenue negativeley.

**Table 7**

Coefficients of the Lineer Model

| Coefficients[a] | | | | |
|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients |
| | | B | Std. Error | Beta |
| 1 | (Constant) | 724.513 | 39.853 | |
| | BRENT | -0.021 | 0.513 | -0.004 |

| Coefficients[a] | | | |
|---|---|---|---|
| Model | | 95.0% Confidence Interval for B | |
| | | Lower Bound | Upper Bound |
| 1 | (Constant) | 645.55 | 803.477 |
| | BRENT | -1.037 | 0.995 |

a. Dependent Variable: BDTI

It is seen that the oil price effect on freight index is negativeley corrolated at a very week matter. This is because there is a non linear relationship between variables. Thus further wavelet analysis instead of time series would reveal better results at a sensitive matter. BDTI has a much more volatile wave graph as below.

**Figure 16**

BDTI time series graph

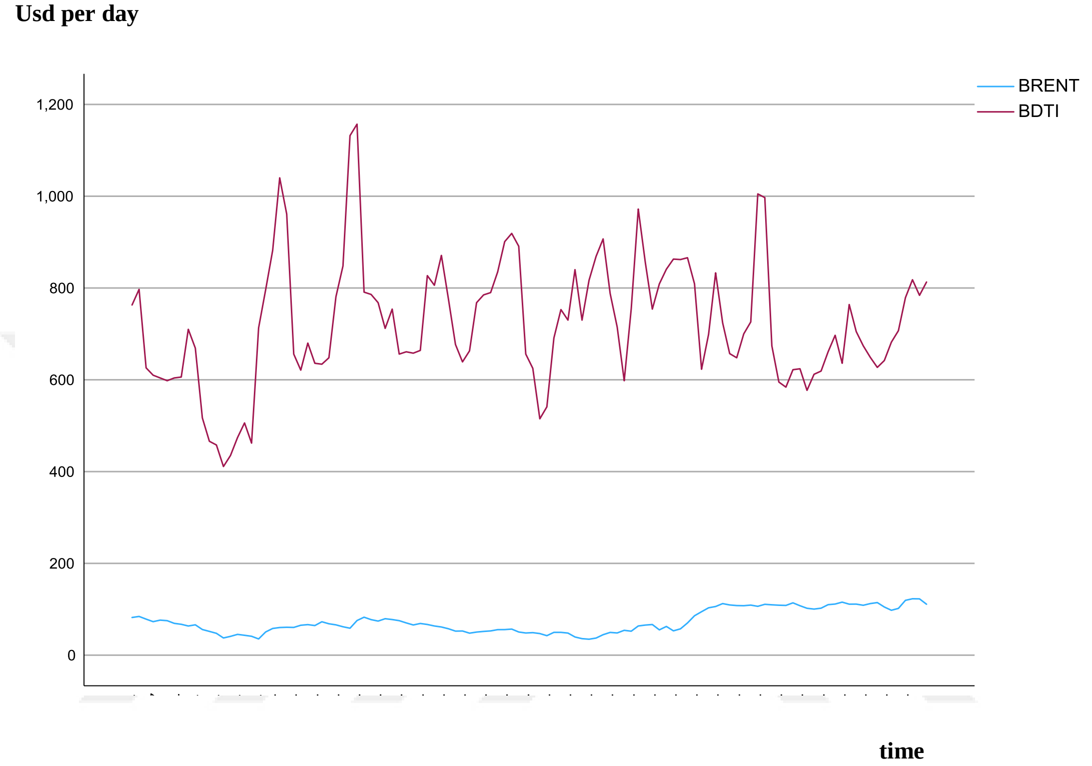
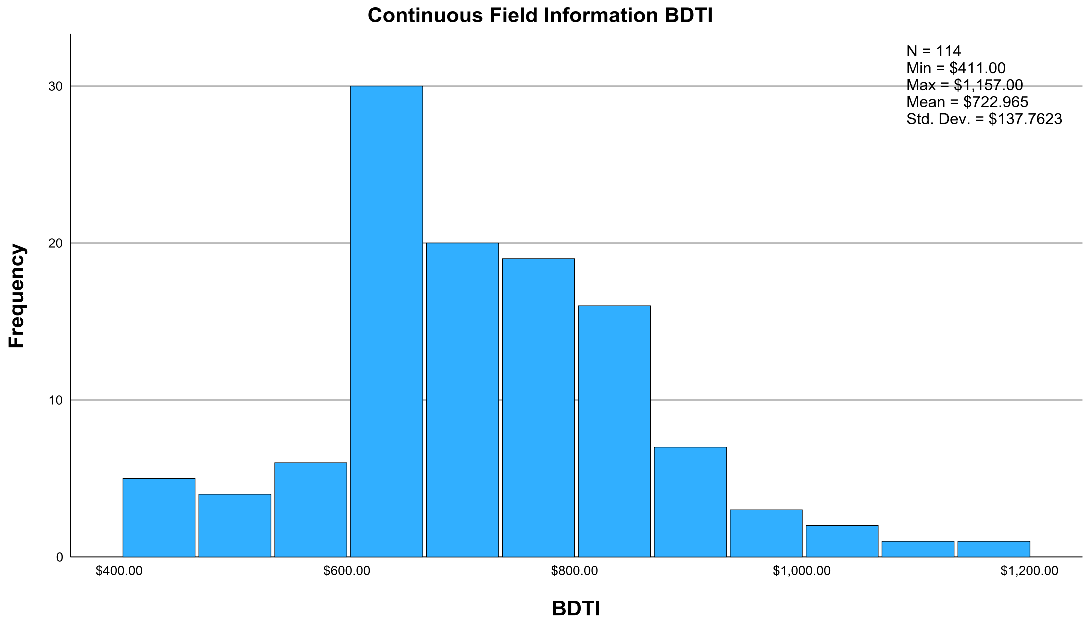



**Figure 17**

BDTI Frequency Graph



Approximateley ten years data reveals minimum freight rate as 411$ maximum at 1.157$ at a mean of 722$ standard deviation of 137$.

Hypothetically oil price affect the shipping freight market as in below parameters;

- Transportation Cost; capital costs, voyage costs and running costs. Voyage costs can be explained with transport route, fuel costs, port costs. Fuel cost is a considerable factor which is a product of crude oil itself which is linked to oil price. When oil prices goes up it effects the profit and causes freights to go up also.
- Crude Oil Demand; If there is increase in economic activity in the global economy more energy consumption thus will increase oil price. Shipping is highly connected to global trade as production of goods and raw material senses dynamics with in seperate locations. If freight volüme increases the freight will also increase. Shipowner may request higher freight rate to reimburse fuel spendature, thus oil price and freight rate move together. although represent different performance parameters.
- Crude oil Transport Services: With oil supply shocks, oil prices directly a□ect global oil transportation operation, mainly served by ocean tankers. If crude oil supply reduces unexpectedly, the volume of crude oil transport services decreases, and the freight rate of oil tankers decreases. In this case, oil price moves in the opposite direction to the freight rate.

**Table 8**

ANOVA Test Results for Baltic Dirty Tanker Freight Index in the scope of a possible global crisis

**Descriptives**

Freight

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean |
|---|---|---|---|---|---|---|
| | | | | | | Lower Bound |
| No major crisis | | 60 | $901.32 | $417.25 | $53.87 | $793.53 |
| Before crisis | | 60 | $1,407.42 | $459.94 | $59.38 | $1,288.60 |
| After crisis | | 60 | $945.93 | $396.25 | $51.16 | $843.57 |
| Total | | 180 | $1,084.89 | $481.15 | $35.86 | $1,014.12 |
| Model | Fixed Effects | | | $425.31 | $31.70 | $1,022.33 |
| | Random Effects | | | | $161.78 | $388.82 |

**Test of Homogeneity of Variances**

| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| freight | Based on Mean | 0.33 | 2 | 177 | 0.719 |
| | Based on Median | 0.286 | 2 | 177 | 0.752 |

| | | | | | |
|---|---|---|---|---|---|
| | Based on Median and with adjusted df | 0.286 | 2 | 175.791 | 0.752 |
| | Based on trimmed mean | 0.294 | 2 | 177 | 0.746 |

**ANOVA**

freight

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 9421894.48 | 2 | 4710947.24 | 26.044 | <.001 |
| Within Groups | 32016707.3 | 177 | 180885.352 | | |
| Total | 41438601.8 | 179 | | | |

**ANOVA Effect Sizes**[a]

| | | Point Estimate | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower | Upper |
| freight | Eta-squared | 0.227 | 0.123 | 0.322 |
| | Epsilon-squared | 0.219 | 0.113 | 0.314 |
| | Omega-squared Fixed-effect | 0.218 | 0.113 | 0.313 |
| | Omega-squared Random-effect | 0.122 | 0.06 | 0.186 |

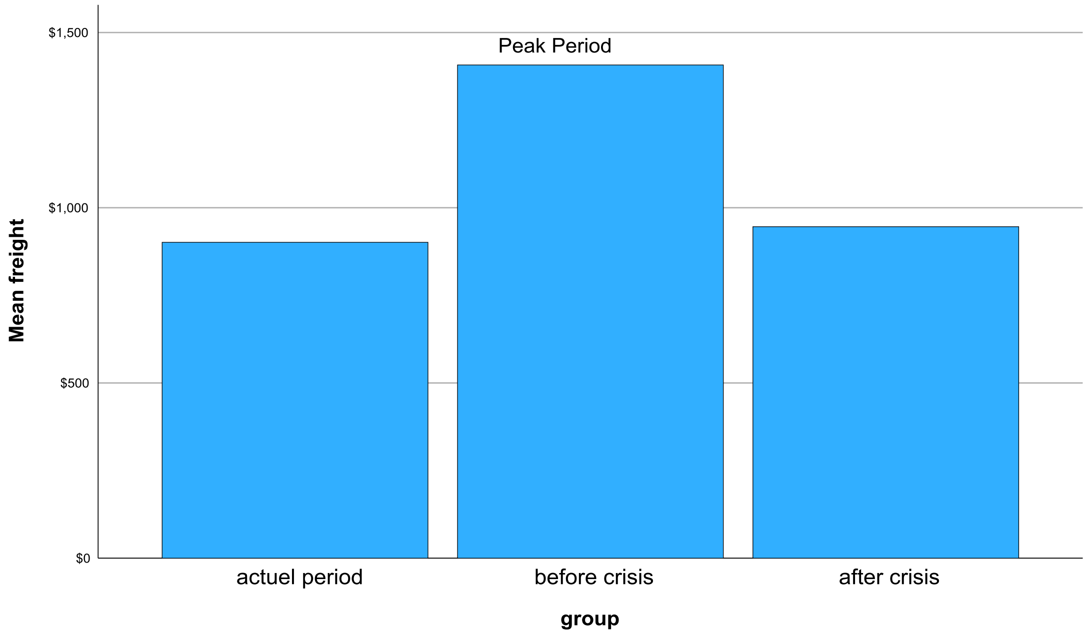
| |
|---|
| a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model. |

| Robust Tests of Equality of Means | | | | |
|---|---|---|---|---|
| freight | | | | |
| | Statistic[a] | df1 | df2 | Sig. |
| Welch | 23.807 | 2 | 117.573 | <.001 |
| Brown-Forsythe | 26.044 | 2 | 174.239 | <.001 |
| a. Asymptotically F distributed. | | | | |

Anova test result findings are summarized as above. Null Hypothesis is rejected with high F ratio. Which means the three-group means are different from each other. There is a probabilistic relationship between crisis effect and related data collection of three groups. At current state shipping market is at through period since the crisis in 2008.

**Figure 18**

Accelaration of Freight according to 2008 Crisis




The shipping market is composed of several types of players with different trading patterns. Short-term players such as voyage charterers, speculators and traders primarily focus on the freight dynamics in the shorter time period. The sale agreements are often made at a relatively high frequency. On the other hand, long-term players such as oil majors and banks concentrate on long-term market trends. The shipowner’s intentions are both about the short- term period for voyage chartering strategies (which trading route) and the longer-term horizon for time charter and ship investment decisions. Therefore, it is vital to examine the scale properties as different trading and contracting horizons exist in the shipping freight market. (Bai, 2021)

Let’s assume a company strategy developement for a marine insurance product to be acquired as a market share from the concurrent competitors. A stable marketing strategy should be selected from available market research and focus on the right product mix to achieve the maximum profit potential and endure the business. As mentioned before insurance market has its own dynamics as originally the product is only a piece of paper(policy) which indicates coverage for a liability thus in means of production cost we may assume only office and communication resources. When constructing marketing plan which is a written document detailing the marketing methods selected ( advertising, price promotions, workshops) it also states the objective of which in this case is to evolve in current marine markets in the companies local area. It also examines the resources which will be needed as campaign budgets or meetings, exhibitions. First approach is gathering information on current market situation, finding out the competition level, what are the competitiors positioning, how they control the way the customers see the products or services. Next step is setting of the objectives, achievements in terms of sales and image, how the company is going to achieve the target is known to be as the strategic plan. The company SWOT analysis is important mainly considering the competition area, formulating the product strategy is a task to be completed, marketing mix acknowledgement, and lastly planning of resources with rightful budgeting. There are also tactics involved with in the marketing operation however they ar efor short term targets. Some marketers prefer to use client tracking as a tool, sales discounts, promotion, exhibits can be counted as tactics.

The task may seem easy as to get the insurance companies and clients as shipowner companies together and contracting business. But there is not always a possibility to win competitive advantage towards current market conditions. This challenge istself is a research area which is interconnected between academia and private sectors. Every company should understand customers and clearify their needs. Marketing funnel as explained, has been the most useful tool to attract the customers. It is a foundation of the journey of the client whom purchases at the last. One of the marketers objectives should be to keep the funnel performance high as possible. This can only be possible by acknowledgement of the marketing funnel through out every stage carefully and in detail. Than again if company still fails to develope in the market can consider partnering or promotion through more eligible events. constrained maximization problem below represents the marketing start up program; if the decision maker is certain about the input data cost and profit according to below results we can come to the conclusion as to invest on only workshops and advertisement, but this is merely the case if we are to talk about aggressive or undynamic market conditions a company new to the markets usually prefer partnership with concurrent affiliates. Again, when observing the outcome of an ordinary budget decision the result would disturb the decision maker as profits seem below the budget amount, but this is never the case in marketing. Thus, the consideration could wind up as a start up program. After this decision, up to success one shall proceed with the marketing funnel strategy to gain and keep customers thus until that point the estimated profit will be under cumulative effect.

**Table 9**

Marketing Budget Decision Making Matris

| *Investment* | *Workshops* | *Advertise* | *Partner Agr.* | | | |
|---|---|---|---|---|---|---|
| *Profit per Investment* | 9000 | 7000 | 14000 | *Invested* | *Cons traint* | *Budget* |
| *Cost per investment* | 15000 | 9000 | 30000 | 200000 | <= | 200000 |

| *Investment decisions* | |
|---|---|
| Workshop s= | 4 |
| Advertise ment = | 15 |
| Partner Agr.= | 0.1666 67 |
| Profit = | 14333 3.3 |

$$
\begin{aligned}
&\text{maximize } Z = 9000x_1 + 7000x_2 + 14000x_3 \\
&\text{subject to} \\
&\qquad 15000x_1 + 9000x_2 + 30000x_3 <= 200000 \\
&\qquad x_1 <= 4 \\
&\qquad x_2 <= 15 \\
&\qquad x_3 <= 2 \\
&\qquad x_1,\ x_2, x_3 >= 0 \text{ and integer}
\end{aligned}
$$

# CHAPTER 5
# 5.DISCUSSION

A shipping company may succeed on innovative ideas toward servicing although without sufficient resources such as financial, marketing or personnel will certainly limit competition in the markets. The distinctive competencies evolve around abilities with in the operational framework, in shipping business one might think all companies with in same segment relate within eachother but thats not the case. For example a tanker operator differs between competitiors in means of high operation standards, there are outsourced companies just to evaluate and give score on how security measures are taken during shore based operation of a vessel. These results are then relayed to transport clients through marketing channels. Each big oil company has obligations on high standard operators when selecting their carriers. The company life cycle is another important factor, if the break even point of the newly acquired vessels are at a long range the strategy will rely on stabel marketing but if the pay off of a vessel is completed which means the age of the fleet has grown the marketing strategy can be more aggressive.

Inhibition of disclosure is an important subject to discuss when it comes to marketing strategy in general and also at shipping markets. Especially in the maritime market we are basically inferring to volatile economic indicators with high competition between companies, thus the secrecy of strategic approaches of a shipping company is an aspect to be clarified.

At marketing management, the information to reveal is as much as important as the information which is kept aside. The bigger the level to which a secret is noticeable by the consumer and other stakeholders the greater the risk to the company. The company will decide the level of risk that they want to assume and the type of secret that collaborates best for their marketing efforts. (Berthon, Lord, Hannah, & Parent, 2020)

The business model is put forward by generating conceptual understanding in line with but not solely limited by budgeting and financial outcomes. Especially nowadays technological advancements and a greater number of customer choices leave newly emerged companies to develop unique marketing techniques. Which also goes for maritime enhancements such as new marine insurance products, crew training companies, safety management companies, communication companies and many more.

Operational sustainability requirement for logistics industry passes through correct and constant supply chain management. To give an up-to-date example would be the covid-19 period we all went through, it caused discrepancies at the supply chain that triggered logistic operations to halt or delay throughout the whole World. This could be avoided only if supply chain evaluations are made according to regulations and safety with consideration of probable events that may cause problems in the future.

Environmental sustainability is another main subject that also should be taken into consideration. The aim of this subject involves reducing the ecological footprint and avoiding consumption and residual pollution to the environment, also to avoid any accidents that may result in loss and harm to the environment. What is needed to achieve these goals passes through another field as sustainability in energy field for example environmentally friendly transport vehicles could be preferred and economically supported for logistics. For the residual part of the plan a very systematic garbage or waste disposal strategy could be developed. Meantime there are many institutions such as Environmental Protection Agencies that reside in many countries including ours. Logistics providers and constructors could be in colloboration with such agencies to accomplish environmentally friendly projects together.

Within one country or throughout the world production facilities are located according to the economical and geographic optimization rules such as where the raw material(pre production material) is located or the location of modification bases(where the produced goods get combined to get to its final form) or where warehouses for distribution to demanding market is located and how much their rental price for storage of the product before it gets to the costumers. These and many more parameters are involved, these parameters could be diversified according to the product type.

At rural areas you may notice that the production is mainly steaming fabrications which could be harmful for the city residents due to air or noise pollution. Industrial complexes happen to be because the same location is optimal for the same industry players, so they start renting a similar slot for their operations that creates the industrial complex from the consumers point of view. Another important geographic reason is the ability to transport without paying high freight costs.

Transition to industry 4.0 and spread of robotic technology is a two-sided issue if we are to relate it with unemployment. The main positive side is considered to be the gain of time throughout the supply chain, this way it is easier to supply just in time product to the growing consumer side. The main negative side is replacement of labor force with machines which requires no wage at all. And what happens to the excess labor force, considering the high birth rates of the country in the meantime causing more consumers to get in line. A proper answer could be the alternative sectors that can welcome blue collar jobs and shift the excess labor force accordingly. Technological shops created with the emergence of industry 4.0, rebound service sector for repair of the robotic devices. This way the system can circulate its own workforce but sometimes there is still an excess of labor force which shall be accommodated and trained until they are situated in suitable other areas or other sectors. In my opinion it is a sad process as per human rights because you can not simply transform an advanced worker by training over and over to something else he/she is not used to even if adequate working space is provided, thus with certain amount of compensation also support should be provided to the worker, this is another angle being worked on by law makers and implementers.

E-commerce is the only sector growing during Covid-19 in which the goods are being carried by container vessels. This area seems to have a positive effect as per rise of demand, these global web-based providers usually choose main liner companies by signing extended period agreements on transporting their goods through logistics networks with a quality door to door service. The future of e-commerce is also related to the exponential growth of door-to-door services. Considering the software developments regarding web-based platforms we may assume that the gap between physical providers and e-commence providers will widen. This might seem to be a harmless situation but when you consider the health of society and extreme consumption ratio of course there will also be a limit to e-commerce.

The lack of qualified human resources is an assumption which should clearly be defined by the authorities. At which part of logistics sector is there any more need of qualified human resource if we assume at management level qualification, the crucial element missing could be proper education given by sector experts and given the adequate proper education the power to accept and evaluate such educational skills is of importance also. This could be an ineffective area. A proper human resources division should be aware of the qualifications and also carry the responsibility when repatriating and accepting employees to be part of an organization, whether logistics or another sector.

There are opinions that globalization widens the gap between developed and underdeveloped countries in terms of foreign trade. This sort of gap could be considered as a negative effect in means of economy. Small companies who cannot compete with the global trade network of globalized companies either close or merge with each other. The unification of this process may not cover alternative consumers, this way opens another market for such demands. The authorities push the underdeveloped countries to regulate customs policies for the benefit of the local traders at the same time avoiding breach of liberal trade. The developed countries take over the wheel with huge responsibilities they must overcome.

Short term impacts of Covid-19 are accounted as a limitation to the growth of international growth.

Due to lower consumption workplaces closed, production decreased shopping stopped except for basic needs, companies lost stock values. Service sectors have come to a closing point. These shutdowns also negatively affected import and export activities, which caused international trade to come to its limits.

Globally containers arrive from Asia filled with manufactured goods and the empty containers which have arrived are then filled with specialty crops and other consumption goods on the way to Asia. The Covid-19 related shutdown of production and decrease of demand has created a shortage of empty containers which are to return to Asia.

Other impact is the decrease of dynamics on trade relations, due to less visits between countries companies has changed character as forced them to target on keeping existing contacts and business relations which caused a more static market condition in means of global trade including container transport. Thus, most of the customers who are already in connection with certain container line companies continued with the same which is a positive effect to the server liner company giving the advantage of gaping the prices as much as required. On the other hand this approach had a negative effect for whom alternative relatively smaller liner companies which hold smaller portion of the routes at its scope, for these companies whom are looking to acquire more share has troubles on finding new customers because of the demanders for containers are secured to be at their usual serving companies to be at the safe side on their own perspective.

There is a difference in means of physical distribution when one displays goods at their branded shop they get the privelage to be the trusted maker. Which gives confidence to the customers specially when there is need to return the products or in case of a break down or need of repair thats why electronic goods mainly has branded sales places. When it comes to e-commerce the goods are delivered door to door speedily and at a lower cost compared to branded shops, the shop rentals and workers needed when there is a physical distribution. E-commerce has another advantage in respect of customers as every consumer is able to make a benchmark before they but the product.

The World Economy as we know consists of parameters such as economic management, production, consumption, work, exchange of financial values and the trade of goods and services. Shipping and transportation are directly related to the trade of goods and services, which then also has a cross effect on other values. As an economic overview the World imports and exports are accounted as equal to each other considering all nations under international trade. This leaves us with the transport value of goods, we can assume the value of the goods being carried is excluded and only the shipping cost is considered. At this case fuel consumption and daily running cost of the transport vehicle as such vessel is of importance when calculating freight. We can conclude that shipping has an economic effect on World Trade in correlation with bunker prices and running cost items such as crew wages, insurance, office costs, technical and provision vessel supplies and so on. During the process, an additional marginal value is created which is the earnings or the profit of shipping. Which is important because it is a driving force for the shipping market which is in relation to the global economy. Earnings provide future shipping as a means of both labor force and technologic advancements. This creates added value when GDP[6] is calculated so in sense of the development of shipping sector there will also be an effect on World economy in a greater sense. If we divide both effects from each other, we can say shipping has an inwards and outwards effect on World economy. Shipping costs as an inward effect profit and earnings as an outward effect.

[6] Gross Domestic Product

Up until now I have emphasized the economic parameter shipping triggers when it comes to world economy. The second angle which is of importance is the factorial effect of shipping on the world trading and global economy. Shipping consists of a well-trained and constantly renewed group of professionals who is dedicated to pushing limits further to improve and qualify the maritime sector. In many of the literature global economy is also defined by the researchers as all economic activity within and between nations, the economies of all humas of the World. The human aspect has great importance when it comes to improvement of the global economy. Shipping expeditions and marketing events bring people together to procure investments and realize new business connections. These interactions are vital for the improvement of global trade in a dynamic matter. Apart from the human aspect we can also consider the technological function of shipping as we all know transport requires constant advancement in technology to overcome environmental and consumption-related problems. These advancements, which are also implemented in other sectors, then produce a positive effect for global trade overall. As the conclusion above economic and factorial overview shows that the shipping sector is vitally interrelated with global economy and trade as an actor on a strongly positive perspective. This relation will continue for many hundred years as long as maritime industry and logistics continue to evolve with concurrent values.

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