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JOYCE WANJIRU MAINA, ISAAC OTIENDE

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Joyce Wanjiru Maina[*1], Isaac Otiende[2]

[*1] Jomo Kenyatta University of Agriculture and Technology P.O BOX 81310-80100, Mombasa, Kenya
[2] Jomo Kenyatta University of Agriculture and Technology P.O BOX 81310-80100, Mombasa, Kenya

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ABSTRACT

Liner shipping being a sector of maritime transportation is finding it difficult to boost their financial performance. This proposal sought to determine the effect of cost management on the financial performance of shipping lines in Kenya. The proposal outlined four main objectives which were to determine the effect of charter hire cost, to determine the effect bunkers cost, to determine the effect of container management costs, and to determine the effect of insurance costs on financial performance of shipping lines. The target population was finance staff working in finance department of all shipping lines calling Kenya Mombasa port. The study focused on a sample of 77 staffs who were respondents in this study. Descriptive research design was used since all the companies had a representative office in Mombasa. Questionnaires were used as a means of collecting data from the respondents. Data resulting from the questionnaire was analyzed using Statistical Package for Social Sciences version 24, regression analysis and presented using charts and graphs. Secondary data was obtained from reports and records maintained by Kenya ships Agents Association, Kenya Ports Authority and Kenya Maritime Authority.

Key Terms: Charter hire cost, Bunker cost, Container cost, Insurance cost

INTRODUCTION

Maritime transportation plays a major role in the national and international trade economic growth (Ellram, 2004). The global activities are changing in terms of manufacturing and trading and therefore shipping lines are facing some structural changes to suit the global demand. The market and market places are located everywhere creating demand for shipping lines to ship goods from countries of abundance to countries of deficit. China is the world's leading manufacturer followed by India and other Asian countries (Panayides & Wiedmer, 2011) greatly supporting the shipping industry. The major shipping lines were initially concentrated on the East-West routes which linked the three main poles of global economy, that is, Europe, Asia and United States of America, and are now serving the North-South routes with the market liberalization. Global goods movement is critical element in the global freight transportation system that includes ocean and coastal routes. The freight transportation network connects locations by multiple routes. Seaborne trade represents more than ninety percent of the international trade in the world (Bichou, 2014).

China economic opening to the outside world, which led to their admission to the WTO in 2001 was very significant because its exports quadrupled within five years (Winebrake, 2007). Globally the shipping industry is made up of three main divisions (Agarwal & Ergun, 2014). The first division is industrial shipping which refers to the case where the shipper owns the ship and aims at minimizing shipping cost. The capital costs of buying the marine vessel is borne by the shipper (Sui & Lam, 2013). The second division is tramp shipping which refers to carriers engaging in contracts with shippers to move their goods from one port to another. They don't have a fixed schedule or published port of call and carry anything and anywhere and freight rates are influenced by demand and supply (Freeman, 2010). The third division is liner shipping where shipping companies engage in a fleet of ships to carry cargo between predetermined ports at regular intervals under publicly advertised schedule. They have an obligation to accept cargo from all customers and to sail on the date fixed in the published schedule and the carrier decides on the set of trips, make schedules available to shippers and operates it (Limbourg *et al*;2012).

In Africa, where road and air links remains weak, sea transport accounts to ninety percent of foreign trade (Backstrom, 2005). Efficient maritime transport is therefore critical to the regions trade and income growth. Shipping and ports in this region lag behind global trends and standards. There are no large ports serving as regional hubs because of limited land transport links and most ports are predominantly owned and run by the national public sector (Backstrom, 2005). The port equipment is often inadequate or poorly maintained. The region lacks modern cranes, hindering the use of efficient container ships. Most ports cannot receive ships exceedingly 2,500 twenty foot equivalent, even though more than 6000 TEUS are now common on international routes (Pearce &Robinson, 2011). This has led to costly delays and congestion in ports. The share of total transport time spent in port is up to four times as large in Africa as in East Asia (Morgan, 2012). These factors have led to high trading costs in Africa.

Reforms aimed at increasing port efficiency and maritime transport in Africa has been initiated. There is a notable stream lining of procedures and controls to reduce handling costs, container turnaround and dwell times (Waithaka, 2010). Public port authorities are also increasing private participation in cargo terminal operations in order to transfer know how and private investment in new installations and equipment (James & Wendy, 2010). The recent reform of the Nigerian port sector offers an example for other West and Central

African countries. The reform created autonomous port authorities, reducing meddling by the central government. Labor redundancies with severance packages reduced in the Nigerian Port Authority from 13,000 to 3,000(African journal of business management, 2014). These has led to increased productivity and reduced delays. In response shipping lines reduced their congestion surcharge by more than eighty five percent. With a well-developed infrastructure, African ports might compete successfully for international trade as regional hubs and transshipment centre. Increasing differentiation between the hub ports attracting global megacarriers and the smaller ports for local distribution could create opportunities for national ship owners to provide feeder services between the two ports.

In Kenya shipping lines are handled by Kenya ports authority at Kilindini port. Kilindini port in Mombasa serves as the key entry and exit point for cargo belonging to Kenya as well as cargo belonging to land locked countries such as Uganda and Burundi (Mugenda, 2003). The first vessel to dock in Kenya Kilindini port was the First Jetty, which was used for discharging materials for construction of the railway line (Olavarrieta, 2009). Shipping lines in Kenya support economic developments such as exporting agriculture produce which earns foreign exchange currency, and importation of plant and machinery which aid in manufacturing goods for domestic use and partial export .The containerized cargo handled in Mombasa Kilindini port has gradually increased for the last five years. In 2011 the containerized cargo was 5,226,000 dwt followed by 5,954,000dwt in year 2012, and in the year 2013,it was 5,974,000dwt ,year 2014 was 6,524,000 and 6,955,000 in year 2015(KPA annual report,2015),(Kenya port authority newsletter 2015).

Shipping companies in Kenya call different ports in different countries. This makes the shipping lines in Kenya to be no exception in experiencing the various challenges which affect shipping lines globally. One of the biggest challenge is that industries are continuously adding capacity. By 2015, a typical vessel delivered is handling about 10,000 20- foot equivalent teus, five times more than ships built in 1990's (Taudal, 2015).There is pressure to fill this capacity and capture the efficiency benefits of larger vessels which has led to hasty decisions by carriers. In turn, profits have become exceptionally volatile due to supply and demand imbalance. Another challenge is that the market is saturated and the industry is now in a race for market share. The quest to take share is squeezing out smaller players and has started another wave of price wars. Shipping lines are forsaking their guidelines on pricing, both in spot rates and general rate increases (Nicolaou & Andrea, 2002). There has also been a notable conflict between asset managers and transportation companies leading to suboptimal business decisions. Many carriers are caught in conflict with owners of the ships they manage since the carriers want to manage the transportation business for profit while owners want maximum value of their assets under lease.

Shipping industry is highly volatile with some years of supernormal profits and some years of abnormal losses (Stephens, 2003). It accounts for ninety percent of global trade and this makes shipping industry a lifeline of world trade (Manson&Nair, 2013). The vessel's operating expenses and container handling equipments constitute about eighty five percent of the shipping companies costs (Stephens, 2003). The standardized nature of shipping service and the industry makes it difficult for any single shipping company to increase or decrease the freight rates since it's an oligopoly industry and others will follow suit (Saari, 2006).Shipping industry stabilizes their earnings by deploying cost management strategies in terms of

judicious mix of chartering the vessels, bunkering of the vessels , containers management strategies and vessel insurance costs. The industry is globally regulated by International Maritime Organization (IMO) and other international agencies such as United Nation Conference on Trade and Development (UNCTAD)

The shipping industry is a capital intensive industry and ship operators face high costs to finance and acquire vessels. The cost of building a 180,000 dwt capsize vessel costs between USD 50M to USD 55M with daily earnings of USD 7000 which barely covers the operating costs with little profit (ship owners and agents association newsletter 2015). The main costs involved in shipping industry are the charter hire costs, bunker costs, container management costs and Insurance costs (Lintaner, 2006). There is scarcity of research on charter costs, bunkers costs, containers management costs and vessel insurance costs in Kenyan shipping Lines. Most of the research work done has not considered all the variables jointly rather they have studied one factor independently. The maritime industry is greatly supporting the Kenyan economy by providing employment and cargo turn around. Statistics shows that the maritime industry provide employment directly and indirectly to over 10,000 employees and the volume of cargo handled at Kenya Ports Authority in 2015 was 26.732 million tonnes compared to 24.875 million tonnes in 2014 reflecting an increase of 1.857(KPA Annual report 2015). It is therefore necessary to study costs affecting financial performance of shipping lines to tap financial gains in the maritime industry and improve Kenyan economy.

Boccardelli & Magnnusson (2012) in their study on financial performance of shipping lines they underlined importance of shipping lines learning to balance their cost elements to ensure savings in cost but they concentrated on container management costs. They recommended a further research on other cost elements in the shipping industry. Research by (Muthiani, 2008) indicated that shipping lines needed to exploit gains from savings in bunkers consumption. He concluded that shipping lines need to strike a balance between the quality of bunkers and bunkers price. They should take the best combination possible available in the market. Jiang & Quashi (2010) in their research argued that shipping companies use outsourcing strategy to tap expertise who have diverse knowledge in managing the increasing charter hiring costs and bunkers costs. Their idea was to increase the bottom line of the company by training the staff at the shipping lines in various cost cutting strategies. They recommended a further study on other ways of reducing costs in the shipping industry. All these studies were done in developed countries which have different economic and social factors compared to developing countries.

There is need to study costs affecting financial performance of shipping lines particularly in Kenya in order to improve the Kenyan economy. This is because any factor that negatively affects profit, usually has a severe effect on financial performance of shipping companies (Dyrnes, 2015). Emergency of bigger vessels with more capacity has resulted to pressure to fill the vessels and at the same time control the costs. To remain competitive and increase financial performance of shipping lines, the shipping companies are looking at ways of managing their costs of operation. There is no direct substitute for maritime transport especially where bulky and uneven shaped goods are involved and hence maritime transport is a sector of transport that greatly support the gross domestic product a country. The research is seeking to answer the question: how does charter hire cost, bunkers cost, container management cost and insurance cost affect the financial performance of shipping lines?

Objectives of the study

- To determine the effects of charter hire costs on the financial performance of shipping lines in Kenya.
- To determine the effects of bunkers costs on the financial performance of shipping lines in Kenya.
- To determine the effects of container management costs on financial performance of shipping lines in Kenya.
- To determine the effect of insurance cost on the financial performance of shipping lines in Kenya.

RELATED LITERATURE

Theoretical framework

Many theories have been used in literature to explain strategic choices of companies.

Portfolio theory

Modern portfolio theory was introduced by Harry Markowitz with his paper "Portfolio Selection". The theory of portfolio management describes the resulting risk and return of a combination of individual asset (Athanasoglou, 2006). The primary objective of the theory is to identify asset combinations that are efficient. Here efficiency means the highest expected rate of return on an investment for a specific level of risk. This means a portfolio with high risk will not be considered unless it is accompanied by a higher expected rate of return. Modern portfolio theory was largely defined by the work of Markowitz (1952) in a series of articles published in the late 1950s.This theory was extended by (Sharpes 1963, Linter 1949 & Tobin 1941).

Portfolio theory integrates the process of efficient portfolio formation to the pricing of individual assets. It explains that some sources of risk associated with individual assets can be diversified by holding a proper combination of assets (Maskell, 2009). Prior to Markowitz's work, investors focused on assessing the risks and rewards of individual assets in constructing their portfolio. Standard investment advice was to identify those assets that offered the best opportunities for gain with the least risk and then construct a portfolio from these. Markowitz has detailed the mathematics of diversification and proposed that investors focus on selecting portfolios based on their overall risk and reward characteristics instead of merely compiling portfolio from assets that each individually has attractive risk and reward measures (Fisher, 2012).

Resource based theory

Robinson (2011) define the resource based view as a method of analyzing and identifying a firms strategic advantages based on examining its distinct combination of assets, skills and capabilities as an organization. According to this theory competitiveness of a company is related to its ability to exercise control over resources and to organize a particular set of resources that is not easy to imitate (Perose, 2012). The company takes advantage of distinctive competences and capabilities that rivals cannot imitate. The costly to copy attributes of the resources are the real sources of competitive advantage. Resources are made up of physical resources, organizational resources and human capital resources (Progoulaki & Theotokas, 2011).Firms diversification based on core resources and competences is more effective and produce superior performance (Olavarrieta & Ellinger ,2012). Olavarrieta & Ellinger (2012) believe that to provide sustainable competitive advantage, strategies like cost control or perceived uniqueness should be based on resources. Resource based theory emphasizes on company's tangible and intangible resources that are built over time (Jauga *et al,* 2015).

Progoulaki & Theotokas (2011) described how shipping firms can build sustainable competitive advantage based on human resource. For them, because shipping is a mature commodity business, there is a need for minimum unit cost. Companies are running after cheaper crews, they are fueling in the Middle East, that is, Karachi and Jebel Ali where fuel is cheap unlike in East Africa. Knowledge is a key resource in decision making in shipping industry. Developed knowledge management model helps in operational parts of the business for example the best route combination (leg) and the best operational high season periods. Kim,s.*et al,* (2011). The ability to develop a long term and trusting association with customers is a complex phenomenon that cannot be imitated (Tongzon *et al*.2013).Cui & Hertz, (2014) explain more the link between resource and capabilities by stating that capabilities are sources of competitive advantage and resources are the sources of capabilities. Shipping lines with owned vessels have a higher capability compared with shipping lines with chartered vessels. This is because the shipping lines with owned vessels can offer their customers reduced freight rates. Shipping lines with marketing staff who maintain good relationship with their customers experience loyalty from their customers hence even if new shipping lines enter the market their customers remain loyal and do not switch to the new entrants.

Efficiency Structure Theory

The efficiency structure hypothesis states that firms earn high profits because they are more efficient than others (Athanasoglou, 2006). There are two distinct approaches within the efficiency structure theory; the X-efficiency and the scale efficiency hypothesis. According to the X-efficiency approach, more efficient firms are more profitable since they have lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any casual relation from concentration to profitability (Athanasoglou, 2006).The scale approach emphasizes economies of scale rather than differences in management or production technology. This enables large firms to acquire market share, which may manifest in higher concentration and then profitability.

Conceptual framework

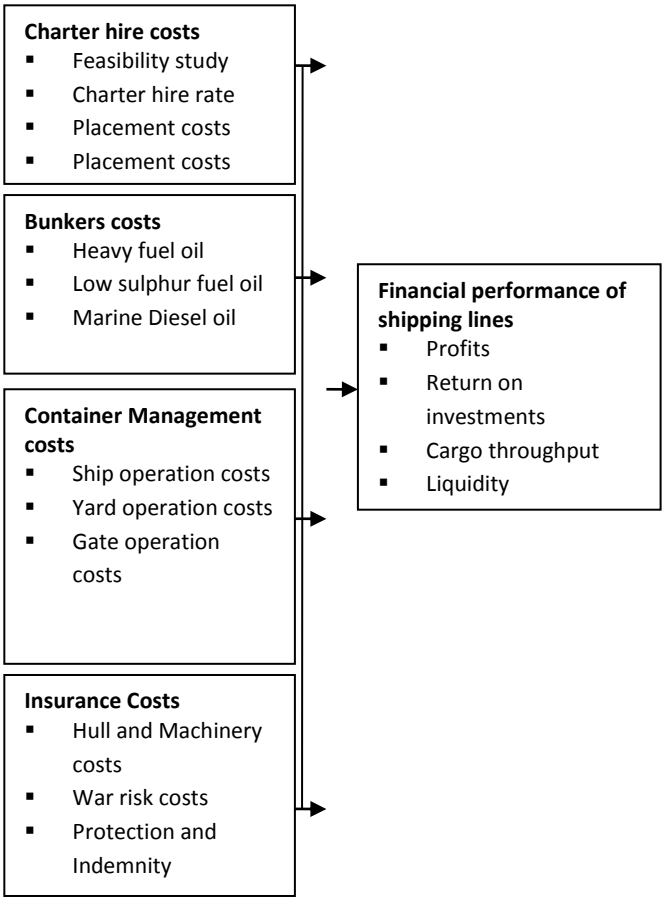

Figure 1: Conceptual framework

Charter hire cost

In charter hire parties get into a contract called time charter contract and it gives the charterer the operational control of the vessel leased, whereas

the option to purchase the vessel gives the charterer the right, but not the obligation to purchase the vessel at the options expiration (Gilman, 2014).The owner of the vessel is obliged to provide a seaworthy ship while the charterer is obliged to provide cargo. The owners provide crew, but the crews take instructions from the charterer. A feasibility study is usually done to ensure that the vessel to be acquired will meet the demand of the shipping lines in terms of vessel tonnage, speed and crew experience. The flag state of the ship is established. A ship flag state shows the state under whose laws the vessel is registered and licensed (Coad, 2006).The flag state has the authority and responsibility to enforce regulations over vessels registered under its flag, including those relating to inspection, certification and issuance of safety and pollution prevention documents. The charterer also checks whether the ship size will manage to dock at the ports of charterer's preference.

The charter hire rate is taken into consideration to ensure the shipping lines get the best bargaining deal available in the market. Depending on the type of charter, a standard contract called charter party is used to record the exact time, duration and charter rate agreed between the ship owner and charterer. Vessel placement costs includes ship master and crew orientation into the particular shipping lines, docking, mooring and unmooring, pilotage and tugging (Stevenson,2013).Ship master is a professional seaman responsible for sailing of the vessel while ship crews are the people who work in the ship excluding the master. The ship master main duty is navigation while the ship crews are responsible for lashing, tallying and monitoring the containers during loading and discharging.

Bunkers cost

Bunkers consumption is mostly a function of ship size and cruising speed. While shipping lines prefer consuming the least fuel by adopting lower speed, this advantage must be mitigated by longer shipping times. Vessels consume various types of fuel, namely, heavy fuel oil (HFO) which has a high Sulphur crude oil. Sulphur emissions controls and environmental considerations encourage a gradual shift from heavy fuel to bunkers with a low sulphur content, the so called low sulphur fuel oil (LSFO). Other bunkers fuel used are marine diesel oil (MDO) and marine gas oil (MGO) (Notteboom & Vernimmen, 2010). Bunker's is used depending on the territorial waters that the ship is passing through. Strict countries require ships to steam on low sulphur fuel oil while territorial waters where government is not strict on environmental considerations heavy fuel oil can be used (Edward, 2015).

Bunkers consumption highly depends on the speed of the ship size and cruising speed (Notteboom & Vernimmen, 2010). The main ship speed is the normal speed (20-25 knots;37.0-46.3km/hr).This is the optimal cruising speed a container and its engine have been designed to travel at. Most container ships are designed to travel at 24 knots. We also have low steaming (18-20 knots; 33.3-37.0 km/hr).Here the ship is run below speed to save fuel but at the expense of additional travel time, particularly over long distances (compounding effect).In addition we have extra slow speeding (15-18 knots; 27.8-33.3 km/hr). It's also known as super slow steaming or economical speed. It's a substantial decline in speed for the purpose of achieving a minimal level of fuel consumption. It's usually applied in short distance routes and lastly we have minimal cost (12-15 knots;22.2-27.8km/hr (Nutt, 1976). This is the lowest speed technically possible, since any further lowering of speed does not lead to any significant additional fuel economy. This level of service is however commercially unacceptable, so it is unlikely that maritime shipping companies would adopt such speed.

Container management costs

Containers are mainly divided into: flats, liquid bulks and refers and their sizes are divided into 20ft, 40ft and 45ft which is also known as high cube container (Fourgeaud, 2014).The container costs are of different classes. These include ship container operation costs .These are costs involved in discharging and loading of containers onboard the vessel. This is handled by quay cranes working in synchronization so as to maintain safe separation from each other (Nicolaou, 2002).To achieve high crane rates (number of containers moved per hour), the planner has to optimize the crane working sequence, so that there would not be any crane clash with the neighboring cranes. We also have yard operation costs that involve discharging containers from the vessel, loading containers into the vessel, shuffling containers that are out of sequence in the yard block and shifting of containers to other blocks for more efficient loading onto the second vessels and inter terminal haulage where containers are moved to another yards in another terminal (Kepelko, 2006).

Gate operation costs deals with external freight forwarders. It involves activities that exporters bring containers to the yard or wharf to be loaded onto the vessels and import activities where freight forwarders receive containers from the yard or wharf to the importers (Waithaka, 2010). Container costs also includes unproductive moves that is concerned with handling of all containers that do not have to be unloaded but have to be moved for example empty and light containers and those containing hazardous materials, loaded on the top or on the deck. Empty containers are repositioned from ports with less import to ports with more export (Erhan, 2010). Shipping lines usually reposition empty containers since they control fleet and they can reposition containers when capacity is available. Trade imbalances are the most common source of accumulation of empty containers in the global economy (Symonds, 2010). A region that imports more than it exports face a systematic accumulation of empty containers, while regions with exports more than it imports face shortage of containers .

Insurance costs

Marine insurance covers the loss or damage of ships, cargo, terminals and any transport or property by which cargo is transferred, acquired, or held between the points of origin and final destination (Lorange & Fjeldstad,2010). Marine policy is used to cover either the ship owner or the shipper. The ship owner is provided legal liability protection to others, for instance in the event of vessel collision. Marine insurance is divided into three classes. The first class is Hull and machinery which is a class of insurance that protects the insured vessel or fleet against physical damage caused by peril while the vessel is in transit (Olson, 2002). It contains collision liability, which protects the owner of the ship against legal liability which may arise out of the owner's vessel colliding with another ship. Usually Hull and machinery insurance does not cover risks of a vessel sailing into a war zone. War risks cover protects damage of vessel and goods in a war zone. Cargo war risk policy is designed to provide coverage where the standard cargo policy ends in times or places of war (Geroski, 2002). The scale and sophistication of piracy have been remarkably elevated in East Africa through hijacking of ships off the coast of Somalia.

Protection and Indemnity insurance is a ship owner's insurance cover for legal liabilities to third parties. It covers all marine liability risks associated with the operation of the vessel, other than that those covered by hull and machinery and piracy insurance (Horgarth, 2008). It covers insured legal liability arising from ship operations such as damage or loss of cargo, personal injury of crew, contamination and oil pollution, wreck removal, and

blocking free navigation of other vessels. Legal liability is decided in accordance with to the laws of the country where the accident takes place. It is usually a contract of indemnity, the insurer is not obliged to pay unless the insured has paid the third party claim (Bunni, 2003). The ship owner must demonstrate his loss before the insurance pays out. Protection and indemnity insurance uses the policy of pay to be paid principle. Loss is determined by surveys, entries in the log book, reports and statement submitted by the ship master and witnesses (Egan, 1998). Protection and Indemnity insurance is very comprehensive which makes it easier for a ship owner or charterer to trade in international shipping transportation.

Financial performance

Financial performance in shipping lines is indicated by profitability, rate of return on investment, cargo throughput and liquidity of the shipping line. Shipping lines focus on high profits and a common approach is a cost control that is expected to produce the greatest overall financial performance (Salter 1995).Cost management strategy implementation generates value to the firm by lowering unit cost and cost variance. Financial performance measures are intended to evaluate the effectiveness and efficiency of shipping lines in using physical capital to create value for shareholders (Morgan, 2012). Profitability measures the extent to which a shipping line generates profit by comparing it with other shipping lines. Profitability ratios such as return on assets, return on equity, operating profit margin and net income are used (Tantiset & Ussahwanitchakit, 2010). Return on assets measures the ability of a shipping line to utilize its assets to create profit and it's often used as an overall profitability index, and the higher the value, the more profitable the shipping line.

Return on Equity is used to measure the rate of return on the owners equity employed. The higher the rate of return on equity the more profitable the shipping line is (Amonphaisal, 2002). Operating profit margin is used to measure the returns to capital per unit of gross revenue. Net income comes from the income statement by matching revenue with expenses incurred to create the revenue in addition to gain or loss on disposal of capital assets (Zenios ,1999). Cargo throughput is used by shipping lines to quantity the cargo that pass through a port on over a given period of time. An increase in cargo throughput in a given route is an indicator of increase in sales and thereby resulting to increase in financial growth (Sharman ,2007). It's established by comparing the volume of containers shipped in prior year with the volume of containers handled in the current year at different ports. Liquidity measures the ability of shipping lines to meet its financial obligations as and when they fall due, without disrupting the normal ongoing operations of the shipping company (Horngren, 2000). It is measured in current ratio which is current assets over current liabilities.

METHODOLOGY

The researcher used descriptive research design. Descriptive study is concerned with identifying the characteristics of an observed phenomenon of exploring possible correlation among two or more phenomenon (Mugenda, 2003). The researcher adopted a sample size of 77 at 95% confidence level. The sample size was calculated from the formulae $n=N/1+N \times e^2$ where n is the sample size, N is the population, e^2 is the margin of error which was 5%. The study applied multiple regression analysis to determine the relationship between the research variables. The following model will was used.

$y=a+\beta\times1+\beta\times2+\beta\times3+\hat{e}$

Where:

Y=Financial Performance of shipping line which is the Dependent factor

a = Fixed costs

B×1=Charter hire cost

B×2= Bunkers cost

B×3= Container Management cost

ê= Error term

FINDINGS

Effects of charter lines cost on financial performance

Table 1: Effects of Charter Lines Costs on Financial Performance

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
High charter hire feasibility costs reduces the financial performance of shipping lines	62	1	5	3.87	.859
Low charter hire rate improves the	62	2	5	3.87	.735
High charter placement cost	62	1	5	4.02	.820
Charter hire cost directly affects	62	1	5	3.87	.914
Valid N (listwise)	62				

The financial managers and accountants were in agreement that charter costs directly affected financial performance of shipping lines in Kenya and that low charter hires rates improved financial performance of shipping lines. Respondents agreed that high charter hire feasibility costs reduced the financial performance of shipping lines with mean value of (M=3.87 SD=0.859) Respondents agreed that low charter hire rate improved the financial performance of shipping lines (M=3.87, SD=0.735), they also agreed that charter hire cost directly affected financial performance of shipping lines (M= 4.02, SD=.820). Respondents agreed further that high charter placement cost reduced the financial performance of shipping lines (M=3.87, SD=.914). The results brought evidence that all factors contributed significantly to charter line costs which affected financial performance. This concurred with (Kim & Mauborgne, 2011), argument that there is need to study a combined cost factors that affects financial performance of shipping lines. This was also found to be true in Onyango's study The study is in line with the findings by (Onyango,2017)who stated that charter lines cost greatly influence the financial performance of a firm.

Effects of Bunkers cost on Financial Performance

Table 2: Effects of Bunkers cost on Financial Performance

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Steaming at high heavy fuel oil reduces the financial performance	62	1	5	3.85	.938
Steaming at low sulphur fuel oil improves the financial performance	62	2	5	4.08	.775
Steaming at low marine diesel oil improves financial performance of	62	1	5	3.71	.894
Bunkers cost directly affects	62	1	5	3.84	.772
Valid N (listwise)	62				

The study sought to evaluate the effects of bunkers prices on financial performance. Respondents agreed to the statement steaming at high heavy fuel oil reduced the financial performance of shipping lines (M=3.85, SD=0.938), They also agreed to the statement steaming at low sulphur fuel oil improved the financial performance of shipping lines (M=4.08, SD=0.775). Respondents also agreed that steaming at low marine diesel oil improved financial performance of shipping lines (M=3.71, SD=0.894) while bunkers cost directly affected financial performance of shipping lines (M=3.84, SD=0.772). From the analysis the implication was that fuel oil greatly directly affected financial performance and this made due to a major contributor of bunkers cost. Bunkers consumption highly depends on the speed of the ship size and cruising speed (Notteboom & Vernimmen, 2010). The ship was run below speed to save fuel but at the expense of additional travel time, particularly over long distances (compounding effect) in order to reduce fuel usage (Edward, 2015).

Effect of Containers Management Costs on Financial Performance

Table 3: Effects of Containers Management Costs on Financial Performance

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
High ship operation cost reduces the	62	1	5	4.19	.846
High yard cost reduces the	62	1	5	3.66	.991
High gate operation cost reduces	62	2	5	4.16	.729
Container cost directly affects	62	2	5	3.85	.568

Valid N (listwise)	62

The study sought to establish effects of containers management costs on financial performance. Respondents agreed that high ship operation cost reduced the financial performance of shipping lines (M=4.19, SD=.846). They also agreed that high yard cost reduced the financial performance of shipping lines (M=3.66, SD= 0.991).Respondents further agreed high gate operation cost reduces financial performance of shipping lines (M=4.16 SD=0.729) and that container cost directly affects financial performance of shipping lines (M=3.85 SD=0.568)

According to (Kepelko, 2006) in order to achieve high crane rates (number of containers moved per hour), the planner has to optimize the crane working sequence, so that there would not be any crane clash with the neighboring cranes. Container costs also includes unproductive moves that is concerned with handling of all containers that do not have to be unloaded but have to be moved for example empty and light containers and those containing hazardous materials, loaded on the top or on the deck.All the mentioned procedures enable a shiping line to reduce costs and improve on profitability as mentioned by (Erhan, 2010).

Effect of Insurance Costs on Financial Performance

Table 4: Effects of Insurance Costs on Financial Performance

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
High hull and machinery insurance cost reduces the financial performance of shipping lines	62	1	5	4.03	.849
High war risk insurance cost reduces	62	1	5	3.50	.988
High protection and indemnity insurance cost reduces the	62	1	5	4.05	.711
Insurance cost directly affects	62	1	5	3.89	.870
Valid N (listwise)	62				

The study sought to investigate the effects of insurance costs on financial performance. Insurance costs were measured by individually asking respondents how they perceived the effect of insurance costs on financial performance. Respondents agreed to the statement high hull and machinery insurance cost reduced the financial performance of shipping lines(M= 4.03, SD= 0.849), also they agreed that high war risk insurance cost reduced financial performance of shipping lines (M=3.50, SD= 0.988). Respondents further agreed that high protection and indemnity insurance cost reduces the financial performance of shipping lines (M=4.05, SD=0.711) and also that insurance cost directly affects financial performance of shipping lines (M= 3.89, SD=0.870).The study is inlone with Horgarth, (2008).They state that cargo war risk policy is designed to provide coverage where the

standard cargo policy ends in times or places of war while insurance covers insured legal liability arising from ship operations such as damage or loss of cargo, personal injury of crew, contamination and oil pollution, wreck removal, and blocking free navigation of other vessels. This implies that the cost incurred affects the financial performance (Geroski, 2002).

Financial Performance

Table 5: Financial Performance

	N	Minimum	Maximum	Mean	Std. Deviation
Profits	62	1	5	4.10	.740
Return on Investments	62	1	5	4.06	.721
Cargo throughput	62	1	3	1.77	.838
Liquidity	62	2	5	4.21	.681
Valid N (listwise)	62				

Respondents agreed that Insurance costs, Container Management costs, Bunkers cost and Charter hire cost affected the profits, return on Investments, cargo throughput and liquidity of shipping lines in Kenya. As discussed by Tantiset & Ussahwanitchakit, (2010) profitability measures the extent to which a shipping line generates profit by comparing it with other shipping lines. Profitability ratios such as return on assets return on equity, operating profit margin and net income are used. Operating profit margin is used to measure the returns to capital per unit of gross revenue Zenios ,(1999).

Regression Analysis

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig
1	.482(a)	.234	.180	.42557	0.000

a. Predictors: (Constant), Insurance costs, Container Management costs, Bunkers cost, Charter hire cost

Multiple regression analysis was carried out to test the research objectives with the model equation being $Y = \beta_1X_1 + \beta_2X_2 + \ldots + \beta_nX_n + \varepsilon$. As is shown in table 4.11 below, 23.4% of the variations in the dependent variable were explained by the independent variable as measured by the goodness of fit (R-square). The model summary table provides the R, R2, adjusted R2, and the standard error of the estimate, which can be used to determine how well a regression model, fits the data. From the table, R squared is the fraction of the variation in dependent variable which the financial performance of shipping lines in Kenya that can be accounted for by the four independent variables used in the study.

ANOVA

Table 7: ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.158	4	.789	4.359	.004(a)
	Residual	10.323	57	.181		
	Total	13.481	61			

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Insurance costs, Container Management costs, Bunkers cost, Charter hire cost

To test the fitness of the model in determining factors affecting the financial performance of shipping lines in Kenya, a two way ANOVA was carried out where the statistics (F(4)=4.359, p value=0.004) was realized as is shown in table 4.9 below: implying that the model was significantly fit to be used in predicting the factors affecting the financial performance of shipping lines in Kenya

Coefficient of determination

Table 8: Coefficients (a)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.491	.785		.626	.534
	Charter hire cost	.201	.123	.213	1.636	.007
	Bunkers cost	.060	.119	.064	.505	.616
	Container Management costs	.101	.158	.086	.639	.525
	Insurance costs	.420	.123	.404	3.427	.001

a. Dependent Variable: Financial Performance

The model revealed that the independent variables herein referred as the predictor: (constant), namely Charter hire cost, and Insurance costs, had significant effects on financial performance shipping lines in Kenya. This was established from the significant results table 4.13. The study variable Charter hire cost (p=0.007 <0.005, Insurance costs (p= 0.001, <0.05).Study variables Bunkers cost, Container Management costs had insignificant effect on the study as indicated where Bunkers cost (p=0.616) Container Management costs (p=0.525).

Thus the study equation $Y = 0.491 + 0.201X_1 + 0.420X_4$

Bivariate Correlation

Table 9: Bivariate Correlation

Correlations

		Charter hire cost	Bunkers cost	Container Management costs	Insurance costs	Financial Performance
Charter hire cost	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	62				
Bunkers cost	Pearson Correlation	.233	1			
	Sig. (2-tailed)	.068				
	N	62	62			
Container Management costs	Pearson Correlation	.433**	.359**	1		
	Sig. (2-tailed)	.000	.004			
	N	62	62	62		
Insurance costs	Pearson Correlation	-.097	.127	-.024	1	
	Sig. (2-tailed)	.453	.324	.853		
	N	62	62	62	62	
Financial Performance	Pearson Correlation	.225	.196	.191	.390**	1
	Sig. (2-tailed)	.078	.128	.137	.002	
	N	62	62	62	62	62

**. Correlation is significant at the 0.01 level (2-tailed).

The study used Pearson correlation to identify the relationship between independent variables and dependent variable. Table 9 indicated that there was a strong positive correlation of (r=0.225, P=0.000) between Charter hire cost (dependent variable) and financial performance (independent variable) indicating that charter hire cost has a strong positive influence on the financial performance. There was a strong positive correlation of (r=0.196, P=0.000) bunkers cost (dependent variable) and financial performance (independent variable). There was also a strong positive correlation of (r=0.191, p= 0.000) between Container Management costs (independent variable) and financial performance (dependent variable).The study further found out that there is a positive correlation of (r=0.390 P=0.001) between financial performance (dependent variable) and Insurance costs.

Table 10: Summary

Hypothesis statement	Test Model	Result
Charter hire cost	**Y=a+β1x1+ê**	P<0.05 Rejected
Bunkers cost	**Y=β2x2+ ê**	P>0.05 Fail to reject
Container Management costs	**Y=β3x3+ ê**	P>0.05 Fail to reject
Insurance costs	**Y=β4X4+ ê**	P<0.05 Reject

CONCLUSION

The study sought to establish the effects of charter hire cost, bunker, container management and insurance costs on financial performance at shipping lines in Kenya. The objectives of the study were adequate and comprehensibly assessed and covered. The findings of the study as provided in the above section report concluded that charter hire cost and insurance costs had positive and significant effect on financial performance of shipping lines in Kenya. The study specifically concluded that proper container management and bunkers cost can affect financial performance in more positive ways than negative ways.

RECOMMENDATION

It appear, based on the current and previously existing findings in regard to charter hire cost, bunkers cost, container management cost and insurance cost that there is much work to be done to create congruency between these variables and their evidence in daily practice within the organization. Basing on the study findings, the following have been recommended:

- That for shipping lines to be profitable in Kenya, there should proper mixes of the variables discussed in the study.
- That the container management at pickup and drop points which been a problem as argued by (Limbourg, 2012) need to be restructured to minimize cost on fuel for this has contributed to bunker as the largest cost item in shipping lines (Dowd & Leschine 2011) and hence a comprehensive study on bunker as a cost factor in necessary.

AREAS FOR FURTHER RESEARCH

This study focused on four objectives as discussed above, other proposed research should focus on other factors that affect financial performance as study factors only contributes 23.4% of factors that affect financial performance. Further research study should be explored on other operational factors within the shipping industry to further enhance and obtain optimum financial performance.

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