

INFLUENCE OF OPERATIONAL STRATEGIES ON PERFORMANCE OF THE AIR CARGO HANDLING PROJECTS AT JOMO KENYATTA INTERNATIONAL AIRPORT – NAIROBI, KENYA

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Abstract: This study investigated the influence of various project management strategies on the performance of air cargo handling projects. More specifically, the study explored the following objectives: to determine the influence of risk management strategies on the performance in air cargo projects; to determine the influence of procurement management strategies on the performance of air cargo handling projects; to determine the influence of acceptable deliverables on the performance of air cargo handling projects; and to determine the influence of project design strategies on the performance of air cargo handling projects. The study delved into four theories that underpin the subject including multi-level theory; agency theory; project performance and contingency; and goal setting theory. The study employed the use of descriptive research design accompanied by structured questionnaires which were administered to a population of 129 staff members at Swissport Kenya. Data was analysed using descriptive and inferential statistics, correlation, regression, ANOVA and β -coefficients. The data was presented in the form of tables, figures and charts. According to the results, all the independent variables had a strong correlation with the dependent variable. The study also found that acceptable deliverables is the most important factor in determining the performance of air cargo handling projects at JKIA. This factor was then followed by procurement management, project design and risk management, respectively. The study concluded that Swissport Kenya had implemented effective risk management; procurement management, project design and acceptable deliverables measure in its operations. The study recommended that the company should establish an air cargo risk handling database; improve its management of its air freight supply chain; maintain a comprehensive knowledge database of the markets in which it operates; and remove paper based verification of the documentation in favour of digital ones. Finally the study found that there has been little research done on specific air cargo handling operations in Kenya given that the majority of the research has focused on horticultural importation dynamics within the aviation industry.

Keywords: Cargo handling, Planning, Performance, Project Cost, Project Quality, Project Leadership Competencies, Project Management, Project Risk, Strategy, Total Quality Management, Variations, Procurement, WBS.

I. INTRODUCTION

The Air transportation is a very significant part of logistics. The very particular requirements associated with the air cargo business have led to the development of unique methods of operation in the world of logistics (Rushton *et al*, 2010). The increasing level of competition in the industry has necessitated the need for the employment of business strategies that

optimize the position of the players and ultimately result in their remaining as going concerns. Given the sheer scale of operations and the fact that many of these organizations are serving different market niches, they have different business segments which require these business strategies to be applied from a project management standpoint. Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements (Project Management Institute, 2013, p.5). The air transport industry is broken up into passenger and cargo sub-sections. Given that the former is more visible and politically essential, it tends to hog most of the attention of the consumers and authorities. In fact, the economic importance of the cargo industry is understood by a much smaller group of businesses and community leaders. Additionally, there is a scarcity of information on the players and factual details pertaining to their operations (Eclat Consulting, 2007). This further amplifies the importance of this paper as will be explained in the following sections. Air cargo initially occurred on 7 November 1910 when some silk was transported from Dayton to Columbus, Ohio; this later developed to include the movement of airmail from 1914 in the United States (Donatelli, 2012).

It was not until after World War 1 that the use of airplanes to transport cargo really took off owing to the advent of new military led technology. The period between 1918 and 1926 experienced a transcontinental boom in the US airmail network and culminated in the privatization of airmail services. However, following dubious practices by the US Postmaster General where many private contracts were not honoured and instead contracts were controlled by only three firms - General Motors North Aviation Group (with Transwestern Air Express), United Aircraft and Transport Corporation (subsidiaries of United Airlines), and Aviation Corporation of Delaware (American Airways); the then President Roosevelt rescinded these contracts and started the regulation of the industry (Donatelli, 2012). Air cargo transportation is critical to the growth of any economy since although it represents less than 1% of the weight of all international cargo, this is actually equivalent to around 35% of the total worldwide shipment value (Babic, Kuljanin and Kalic, 2015). This sub-sector found its niche in the movement of time sensitive goods over longer distances. As a result, European markets represent prime constituencies for air cargo service consumption given their superior purchasing power relative to Asian and African markets and also the fact that they are more mature. Nonetheless, the global economic recession post 9-11 (2007/2008) have had serious negative impacts on the Euro zone as well. Other challenges have also beset the sector including high fuel prices and increased competition from other modes of transport (Babic, *et al.*, 2015). Beifert (2016), contends that the relevance of air cargo to airports or airlines in Europe is heavily dependent upon a couple of considerations for core cargo, ancillary or dispensable cargo: 1) route or geographical level, where airports'/airlines profitability in long haul transport services is a main function of the air cargo business; and 2) company level – for certain airlines, air cargo business seems rather marginal or supplementing activity contributing as low as 4% of total revenues on other companies airfreight operations may contribute as much as 50% of total revenues.

South Africa, the largest economy in Africa relies primarily on the European markets for its air cargo transportation with the European Union (EU) accounting for almost 26 percent of its exports (Dettmer, Freytag and Draper, 2014). This is as a direct consequence of the relatively poor infrastructure within the continent of Africa which makes regional trade more expensive and cumbersome; the prevalence of cross-border barriers; high administrative requirements; and corruption problems at ports of entry (Dettmer, *et al.*, 2014). South Africa's most prominent exports including precious metals such as diamonds, gold, and platinum which account for 17 percent of the total export value. Given the high value allied to their low loading weight make these products relatively cheap to move and thus popular. This has contributed to South Africa accounting for a much bigger share of high value air cargo exports than its SADC partners – Zambia, Zimbabwe, and Mozambique (Dettmer, *et al.*, 2014). Air cargo transportation in Nigeria has faced a number of challenges over the years whose genesis has been the general lack of proper co-ordination of cargo for efficient distribution and supply chain that is not cost-effective (Adenigbo, Adedotun, Ubogu and Egba, 2014). More specifically, shortages in warehousing and facilities in Nigerian airports have had a negative impact of their capacity to handle the volume of air cargo for efficient flow. Other issues have also included protection and security of cargo, improper declaration and documentation of goods in terms of types and volume (Adenigbo, *et al.*, 2014).

The Ethiopian aviation sector is managed by three bodies – the Civil Aviation Authority (CAA), the Airports Administration Enterprises (AAE) and the Ethiopian Airlines (Debela, 2013). Freight services are provided by the airlines to 17 major destinations on 6 cargo airplanes with an annual cargo uplift of 117,682 metric tonnes (Debela, 2013). The country's modal choices are somewhat restricted by the fact that it is landlocked and has wide topographic features

varying between an altitude of 4,620 m above sea level to about 120 m below sea level with a difficult terrain (Debela, 2013). Additionally, other challenges abound including the underdevelopment of logistics management system; inadequate fleet of vehicles for goods transport; poor infrastructure; very high incidence of traffic accidents; congestion in cities; lack of coordination of goods transport; poor quality management; etc. (Debela, 2013). The most significant development in the air cargo business in the East African region was the liberalization of air transport in the respective countries (air transport liberalization in Tanzania happened in 1992; 1996 in Kenya; and 1991 in Uganda) which led to the growth of air cargo volumes – for instance there was a jump of 423% between pre-liberalization in 1986 and 1999 in Uganda (Irindu, 2008). Additionally, liberalization led to a boost in exports of horticultural products such as freshly cut flowers, vegetables, and fruits. Kenya has two main international airports Jomo Kenyatta International Airport (JKIA) in Nairobi and Moi International Airport in Mombasa. There are other airports such as the Eldoret International Airport which has not really started taking international traffic; Kisumu, Malindi and Wilson airports (Alila, Khayesi, Odhiambo and Pedersen, 2005). Further, there are a number of smaller airstrips which also serve domestic routes for small planes. Air freight transportation in Kenya has been developing steadily through the years with most of the airfreight concentrated at the JKIA - volumes increased from around 60-70,000 tons in the 1990s to 169,000 tons by 2002.

Although the largest share of the airfreight consists of exports of flowers and fruits and vegetables, there is also a considerable volume of airfreight in high value manufactured products such as imports of spare parts (Alila, *et al.*, 2005). A regional comparison of international airfreight markets reveals that about 60-70% of the total airfreight goes to Europe.

One of the key developments in the air transport industry in Kenya was the privatization of the national carrier – Kenya Airways in 1996, this was the first such privatization in Africa (Irindu, 2008). This privatization resulted in an increment of 90% in airfreight traffic from 12,115 tons in 1997/98 to 23,000 tons in 2001/2002. We also have Swissport Kenya Ltd as another Air Cargo handler in Kenya. Swissport operates a state-of-the-art cargo handling facility at Jomo Kenyatta International Airport comprising of 10'400 sqm warehouse with 750 sqm cold room facilities. They handle roughly 76'000 tons of cargo per annum, 20% consisting of imports (mainly high-end consumer goods, pharmaceuticals etc.) and 80% being exports, predominantly perishables. Airfreight transportation in Kenya mainly supports the country's agricultural sector through the export of horticultural products to international markets. (Irindu, 2008). Another significant development was the publication of the Civil Aviation Amendment Bill which established an autonomous Kenya Civil Aviation Authority in October 24, 2002 (Irindu, 2008). Swissport Kenya Limited is a subsidiary of Swissport International which was established in 1997 based on a self-handling organisation that comprised Swissair, Sabena and KLM. This organisation acquired a "Cargo Service Charter" in 2002 which was rebranded to Swissport Kenya Services Kenya, with the two entities eventually merging in 2014 to operate under the name Swissport Kenya Limited (Kanana, 2016).

As a company, Swissport has been active in Kenya since 1997 and has managed to build a reputation as the largest ground handling company in Kenya by offering quality, reliability and value of money. This was officially confirmed with the award of various industrial certifications including ISAGO, ISO 9001, Cargo IQ and RA3 (Kanana, 2016). Swissport has a workforce of approximately 480 employees offering a number of services including ramp, passenger and baggage handling, cargo handling, flight operations, aviation security and lounge services to a majority of international airlines serving the JKIA. The cargo services comprise a state-of-the-art cargo handling facility at JKIA featuring a 10,400 square metre warehouse with 750 square metre cold room facilities which facilitate the handling of about 76,000 tonnes of cargo annually (20% of which are imports while 80% are exports) (Kanana, 2016). KAH is a subsidiary of the Kenya Airways Group along with Africa Cargo Handling Limited, Ken Cargo Airlines International Limited which was founded in 1977 after the disbandment of the East African community as a national carrier. Kenya Airways operates scheduled flights throughout Europe, Africa, Middle East and Asia with its hub at the JKIA in Nairobi. The company started off as a wholly owned government parastatal but it was privatised in 1996 with the major shareholders being the Government of Kenya (29.8%) and KLM (16.73%) (Gichira, 2007).

The airline has been facing a number of challenges increasing globalization, local competition, higher operational costs amongst many others. This has prompted the company to introduce newer technology such as re-engineering of their processes and reducing the size of their carriers. Additionally, the air cargo operations have been adjusted to incorporate more belly cargo rather than dedicated cargo planes to cut down on the costs of operation.

The key segments of the economy that spur air cargo operations are horticultural exports, and imports of high value items such as gemstones (Waime, 2010). Air freight transportation is one of the critical movers of economic development in various countries. This is especially so given the fact that no country is completely self-sufficient and as such has to engage in import and export to fill any gaps in resource requirements. It is also particularly critical for landlocked countries which have no recourse to maritime freight options for international cargo transportation. The main problem is that air transport has become increasingly expensive due the worsening global financial situation. In fact, according to Oprea (2010), many airlines in Europe filed for bankruptcy on the aftermath of the financial crisis including Alitalia, Eos, Oasis, Silverjet, Futura, and XL. Other experienced heavy losses including Air France-KLM (30% decrease in income), and Lufthansa (4.5% drop in profit in 2008) (Oprea, 2010). The nature of airfreight transportation is such that it deals primarily with high value or perishable commodities that require to be transported quickly over long distances; consequently, it behoves any country undertaking airfreight to engage in practices that will optimize its usage and ensure adherence to IATA Cargo Handling guidelines (Vega, 2014). It is at this point that project management techniques are employed to confer much needed optimization of air cargo handling protocols so as to improve air cargo operational performance. Air cargo handling is a complex endeavour that involves many different types of firms providing three core functions – physical carriage, forwarding and integration. Grosso and Shepherd (2010) describe these functions in a number of ways. Firstly, there are Air Carriers which mainly move cargo from airport to airport and rely primarily of freight forwarders to deal directly with customers. Then, freight forwarders which act as intermediaries between airlines and end-customers by contracting with airlines for carriage of goods and purchase of block space on their flights, consolidation of shipments for carriers, and delivery of goods to consignees through contracting with ground transportation services.

Finally, integrated express carriers which include carriers such as FedEx and UPS which provide one entity with the different components of door-to-door services through the use of multi-modal transport networks, ownership and operation of their own aircraft, surface transportation equipment, and automated handling and storage services (Refer to figure 1.1). As a result, air freight employs thousands of people all over the world who need to continue earning a livelihood, thus necessitating improved operational strategies. For instance, in Kenya, 90,000 jobs and 500,000 livelihoods depend on the cut-flower industry which supports 1.6% of the national income (World Bank, 2009). The air cargo industry faces a number of challenges including differences between cargo and passenger characteristics; global economic slowdown; mode mix optimization and modal shift; geopolitical concerns; fuel prices; trade protectionism; and security compliance (IATA, 2015). Given unique characteristics of air cargo such as type and size of cargo and differences between cargo and passenger destinations, the use of dedicated freighters continues to be essential to the accomplishment of air cargo objectives. Secondly, financial constraints are reaching alarming levels with air cargo yields declining continuously. Karagülle and Yıldırım (2011) confirm that air cargo market revenues reached US\$64 billion at 2008 but after recession demand slowed and came back to US\$49 billion around the world.

Thirdly, customers are switching modes of transport to less expensive or perceived more environmentally friendly options such as rail or maritime transport which invariably leads to loss of revenue and challenges the very existence of air cargo carriers (Smyk, 2010). Fourthly, there are geopolitical concerns regarding the volatility of oil prices and recent economic trends to onshore or closer-to-home manufacturing that are impacting the demand for air cargo transportation negatively (IATA, 2015). Fifthly, Irandu (2008) affirms that many countries are increasingly adopting trade protectionism which has been steadily restricting world trade and, thereby, reducing the demand for air cargo transportation. Further, is the issue of security and safety which is assuming greater importance by the day with shipments facing air risks which delay shipping times, or may result in the prohibition of the transportation of certain goods by air (Petersen and Treat, 2009). Additionally, technology through disruptive innovations has been reducing air cargo volumes, for instance, 3D printing that might reduce the number of shipped parts and supplies; or crowd shipping services that connect people to want to ship something with travellers (IATA, 2015). Thus, it is imperative that air cargo handling companies determine the means through which they can combat these challenges in order to defend the industry and remain going concerns.

II. METHODOLOGY

According to Cooper and Schindler (2014) research design refers to the blueprint for collection, measurement and analysis of data. Kothari (2004) defines research design as the arrangement of conditions for collection and analysis of

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data in a manner that aims to combine relevance to the research purpose with economy in procedure. Williams (2007) identifies three broad categories of research designs: qualitative, quantitative and mixed methods research designs. Qualitative research involves the exploration and understanding of the meaning that individuals and groups attach to a social or human problem (Creswell, 2014). Quantitative research involves testing objective theories through the examination of relationships among variables using statistical procedures. Mixed methods research involves the collection of both qualitative and quantitative data, integrating the two and applying designs that include both philosophical assumptions and theoretical frameworks (Creswell, 2014). Williams (2007) further sub-categorises quantitative research into three: descriptive research which examines a situation as it is in its actual state; experimental research which involves the treatment of an intervention into the study group and ultimately, the measurement of the outcome; and causal comparative research which involves the examination of the influence of the independent variable on the dependent variable using the cause and effect analysis. This study used descriptive research design to enable the description of the characteristics of a group of people (Kothari, 2004). This study collected data from a target population of 129 staff members of Swissport Kenya Limited who included Operations managers, Duty managers, Team leaders, Operations agents, Drivers, Warehouse staff, Subcontractors, Turnaround coordinators, Equipment operators and Freight team. The breakdown of this population is illustrated in table 1. The sample frame for this study included the staff members of Swissport Kenya Limited in the Nairobi office premises and targeted 129 staff members. The study used the stratified (strata which depict departments) sampling technique since the sample was drawn from a population which was not homogenous and was stratified into ten non-overlapping sub-populations (departments) (Kothari, 2004).

Table 1: Population of the study

Category	Number
Operations Managers	3
Duty Managers	6
Team Leaders	11
Operations Agents	23
Drivers	21
Warehouse staff	22
Sub-contractors	28
Turnaround coordinators	2
Equipment Operators	8
Freight team	5
TOTAL	129

In keeping with Kothari (2004), the study used structured interviews so as to predetermine the questions. The selection of structured questionnaires was informed by the fact that it a low cost method of data collection; it was free of bias from the interviewer; it gave the respondents time to respond; and was convenient for hard to access participants (Kothari, 2004). Data collection was done through self-administered questionnaires where the researcher issued them physically to 97 Operations managers, Duty managers, Team leaders, Operations agents ,Drivers, Warehouse staff, Subcontractors, Turnaround coordinators, Equipment operators and Freight staff of Swissport Kenya Ltd. Lavarakis (2008) defines self-administered questionnaires as those specifically designed to be completed by the respondent without the intervention of the researcher during the data collection process. There was a drop and pick arrangement for the completed questionnaires. A pilot test was conducted on 10 members of staff whose traits resembled those of the actual study who represent approximately 10% of the study sample in accordance with Mugenda and Mugenda (2003). This study used Cronbach's Alpha to test for internal reliability. Internal reliability is the extent to which all the items in a test that measure the same construct or theme (Tavakol and Dennick, 2011). Cronbach's alpha is expressed as a number between 0 and 1 to estimate the amount of measurement error in a test, with numbers closer to 1 indicating higher reliability. The Cronbach's alpha was computed using the statistical package for social sciences (SPSS). This study opted to use a reliability coefficient of 0.7 because according to Webb, Shavelson and Haertel (2006), coefficients of 0.7 or better are considered to be ideal for ensuring a reliable basis for decision making about individuals based on observations.

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The study enhanced construct validity of the questionnaires by examining the pilot test scores against established patterns of similar situations in the industry (Kimberlin and Winterstein, 2008). Thus, inconsistencies were eliminated from the actual study by rephrasing the questions. In order to enhance content validity, the researcher used the experts in air cargo handling such as the Operations Managers to screen the questions in the questionnaires for efficacy and relevance. Finally, the study enhanced criterion-related validity of the questionnaires by comparing with empirical findings from similar tests examining similar constructs for consistency. This study conducted descriptive data analysis using measures of central tendency such as mean and standard deviation; and used the statistical package for social sciences (SPSS) version 20 to perform multiple and linear regressions so as to examine the relationships amongst the variables. The results of the analysis was presented in a combination of tables and charts. Data was analyzed using quantitative descriptions. Inferential statistics was also be done including correlations, regression, ANOVA and β -coefficients, and qualitative content analysis. The data analysis was done using multiple linear regression model to capture the variables of the study as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

Where;

Y = The project’s dependent variable (project performance)

X₁= the project’s performance caused by the risk management

X₂= the project’s performance caused by the procurement management

X₃= the project’s performance caused by the project design strategies

X₄= the project’s performance caused by acceptable deliverables

ϵ = the error term

β_0 = the constant term

β_{1-4} = the Beta coefficient

According to the formula, Y is determined by changes in X₁, X₂, X₃ and X₄. Beta coefficient is the extent to which a unit change in any of the Xs influences Y. The constant refers to the value of Y when X is zero.

III. FINDINGS

Response rate refers to the number of completed and returned questionnaires (Skalland, 2011). In this case, 97 questionnaires were administered, out of these a total of 90 were completed and returned. This translates to a response rate of 92.8%. According to Mugenda and Mugenda (2003), a response rate of 50% in social sciences is considered to be sufficient, therefore, in this study, a response rate of 92.8% is considered adequate. This is illustrated in table 2 below.

Table 2: Response Rate

Category	Frequency	Percentage
Returned Questionnaires	90	92.8%
Unreturned Questionnaires	7	7.2%
Total	97	100%

The study applied the use of Cronbach’s Alpha to determine the internal consistency of the data in order to observe which whether certain items within a scale measures the construct under study. The study used an Alpha of 0.7 as per the guidelines of Heale and Twycross (2015). These results are illustrated in the table 3 below. Accordingly, acceptable deliverables had the highest Alpha score of 0.907 indicating that it had the highest reliability; followed by risk management strategies with an Alpha score of 0.815; procurement management strategies with an Alpha score of 0.794 and lastly project design strategies with an Alpha score of 0.702. This reflects the fact that all four variable passed the reliability test since they were above the 0.7 threshold. Additionally, even the combined reliability score of 0.883 which was also acceptable.

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Table 3: Reliability of Test Results

Scale	Cronbach's Alpha	Number indicators	Comments
Risk Management Strategies	0.815	4	Acceptable
Procurement Management Strategies	0.794	4	Acceptable
Project Design Strategies	0.702	4	Acceptable
Acceptable Deliverables	0.907	4	Acceptable
Combined	0.883	16	Acceptable

Table 4 below, illustrates the multifactor correlation matrix from which the following observations can be made. The correlation values for all independent variables relative to the dependent variable have a strong positive correlation which is acceptable as per the guidelines of Chee (2015). There is a strong positive correlation of $r = 0.7654$ between project risk management and project performance. There is an even stronger positive correlation of $r = 0.8942$ between project procurement management and project performance. There is a strong positive correlation of $r = 0.7873$ between project design strategies and project performance. Finally, there is a very strong positive correlation of $r = 0.9493$ between acceptable deliverables and project performance.

Table 4: Multi-Correlation Matrix

	Project Risk Management	Project Procurement Management	Project Design Strategies	Acceptable Deliverables	Project performance
Project Risk Management	1				
Project Procurement Management	.7775**	1			
Project Design Strategies	.7511	.6013	1		
Acceptable Deliverables	.5820	.7312	.8414	1	
Project performance	.7654**	.8942**	.7873**	.9493**	1

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

Table 5 below presents the regression statistics of the study variables as contained in the regression model summary. According to the table, the R Square value across all the four independent variable is 0.819. This implies that 81.9% in variation in project performance can be attributed to units of change by all the four independent variables. This agrees with Pallant (2001) who found that a good regression model should have R Square values that are above 0.7.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842 ^a	.819	.760	.33413

a. Predictors: (Constant), Acceptable Deliverables, Project Risk Management, Project Design Strategies, Project Procurement Management

Table 6 below illustrates the ANOVA statistics for the variables of the study. Accordingly, the table shows that the calculated value of F (F_{cal}) as shown on the table of 8.224 is greater than the critical F-test score (F_{crit}) at 5% level of significance which is equivalent to 2.53 indicating that there is a significant relationship between all the independent variables and the dependent variable. Similarly, the p-value (or test of statistical significance – abbreviated as Sig.) is

0.026 which is lower than 0.05 indicating that there is a statistically significant relationship between all the independent variables and the dependent variable. This demonstrates a goodness of fit of the model.

Table 6: ANOVA Statistics

Model		Sum of Squares	Degrees of Freedom	Mean Square	F	Sig.
1	Regression	49.437	4	12.359	8.224	.026 ^b
	Residual	7.034	85	1.503		
	Total	56.471	89			

a. Dependent Variable: Project performance

b. Predictors: (Constant), Acceptable Deliverables, Project Risk Management, Project Design Strategies, Project Procurement Management

Table 7 shows the beta coefficients of the research data. The values of the constant and coefficients made it possible to generate the multiple regression model as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon = 4.855 + 0.618X_1 + 0.514X_2 + 0.463X_3 + 0.364X_4 + 1.346$$

According to the study findings, a unit increase in project risk management will lead to 0.364 increase in project performance when all other independent variables are held constant. A unit increase in project procurement management will lead to a 0.514 increase in project performance when all independent variable are held constant. A unit increase in project design strategies will lead to a 0.463 increase in project performance when all other independent variables are held constant. Finally, a unit increase in acceptable deliverables will lead to a 0.618 increase in project performance when all other independent variables are held constant. The t-value measures the size of the difference relative to the variation in the data. The greater the magnitude of T (it can be either positive or negative), the greater the significance the difference. The study found that the t-test scores for all the independent variables were 0.609, 0.331, 0.613 and 0.596 for project risk management, procurement management, project design strategies, and acceptable deliverables, respectively. These figures indicate that data relating to the four variables is all significant. A number of conclusions can be drawn from this analysis. Firstly, all the independent variables contribute towards the predictive ability of the model since they have positive correlations with the dependent variable. Secondly, acceptable deliverables has the strongest predictive power over the dependent variable, followed by project procurement management, project design strategies and project risk management, respectively.

Table 7: Beta Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.855	1.346		3.607	.001
	Project Risk Management	.364	.116	.277	.609	.888
	Project Procurement Management	.514	.246	.441	.331	.742
	Project Design Strategies	.463	.101	.398	.613	.112
	Acceptable Deliverables	.618	.101	.542	.596	.255

a. Dependent Variable: Project performance

IV. DISCUSSIONS

The general objective of the study was to find out the influence of operational strategies on the project performance of air cargo projects at the JKIA. This was then divided into four specific objectives. Firstly, to determine the influence of risk management strategies on the project performance of air cargo projects at the JKIA. Secondly, to determine the influence of procurement management strategies on the project performance of air cargo projects at JKIA. Thirdly, to determine the influence of project design strategies on the project performance of air cargo projects at JKIA. Lastly, to determine the influence of acceptable deliverables on the project performance of air cargo projects at JKIA. The study used a descriptive research design and a survey was conducted to collect data using structured and semi-structured questionnaires from a target population of 129 employees of Swissport Kenya. The sample size of the study was 97 with a response rate of

92.8%. The data was then analysed using SPSS version 20. The study found that each of the four independent variables a strong positive correlation with the dependent variable and this was borne out by the following. The Pearson Correlation coefficient for each of the independent variables was above 0.5. The R Square value of the study was 0.819 indicating that the regression model can explain up to 81.9% of the variation in the dependent variable. The value of the calculated F ratio (F_{cal}) was lower than the tabulated F critical value (F_{crit}) indicating a significant relationship between each of the independent variables and the dependent variable. The p-value, which is a test of independence, was less than 0.05 indicating that there was a statistically significant relationship between all the independent variables and the dependent variable. The study investigated the influence of risk management strategies on the performance of air cargo projects at JKIA. It found out that there are clear procedures of risk management at Swissport Kenya.

This indicates that the company has prioritised risk management since it had taken time to explain the procedures of risk management to all the staff. It also found that risk management at Swissport Kenya tries to gain control over variations. This suggests that Swissport Kenya performs risk management in order to understand and manage variations between previous and current performance, or between projected and actual performance. Additionally, the study found that project characteristics are critical to the management of risks at Swissport Kenya. This indicates that each project at Swissport Kenya is unique and requires a customised assessment when determining the appropriate risk management strategy. Finally, the study found that contingency planning is a critical component of risk management at Swissport Kenya. This suggests that the company normally carries out contingency planning as a means of improving on the overall risk management effort. The study investigated the influence of procurement management strategies on the performance of cargo handling projects at JKIA. It found out that Swissport Kenya practices the five principles of procurement as part of its procurement management strategies. This indicates that the company is, not only familiar with the best practices of procurement but also implements them. The study then found that procurement planning is a critical component of procurement management strategies at Swissport Kenya. This suggests that Swissport Kenya have incorporated procurement planning in their operations. The study also found that the organisation also practices conduct procurement as part of its procurement management strategies. This indicates that conduct procurement is one of the established procurement management strategies at Swissport Kenya. Finally, the study found that the organisation practices control procurement as part of its procurement management strategies. This suggests that the organisation has institutes control procurement as one of its key procurement management strategies.

The investigated the influence of project design strategies on the performance of air cargo handling projects at JKIA. According to the study, the organisation uses cost effective design of supply chain management. This indicates that Swissport Kenya has invested in the most cost effective design strategies of supply chain management. The study also found that Swissport Kenya employs the use of balanced cost management of flight legs. This suggests that the organisation's design of its freight operations includes the use of balanced cost management of flight legs. The study then found that Swissport Kenya Ltd. has incorporated the use of ACRM. This indicates that the company has factored into consideration the most advanced revenue management techniques in the design of its operations. Finally, the study found that Swissport Kenya Ltd. has incorporated IATA 2000 standards in its operations. This suggests that the company has incorporated the use of the best practice project management tools and techniques in the design of its projects. The study investigated the influence of acceptable deliverables on the performance of air cargo handling projects at JKIA. The study found that Swissport Kenya prioritises the attainment of project quality control. This indicates that the project quality control is one of the acceptable deliverables for the organisation. The study further found that the organisation prioritises the attainment of efficient cost management. This, again, suggests that the company views efficient cost management as one of the acceptable deliverables. The study then found that the company prioritises the attainment of logistics and supply management. This suggests that Swissport Kenya has established the logistics and supply management as one of its acceptable deliverables. Finally, the study found that Swissport Kenya prioritises the attainment of proper human resource management. This further demonstrates that human resource management is one of the acceptable deliverables at Swissport Kenya Ltd.

V. CONCLUSIONS

An assessment of the results from the inferential statistics reveals the following conclusions. Firstly, each of the independent variables contributes strongly towards the improvement of project performance of air cargo handling projects

at JKIA. Secondly, acceptable deliverables is the most important factor in determining the performance of air cargo handling projects at JKIA. This factor is then followed by procurement management, project design strategies and risk management, respectively. The most important strategies of risk management in air cargo projects at JKIA are: the establishment of clear procedures for risk management; the control of variations between projected and actual performance; the consideration of the characteristics of the project; and contingency planning. This indicates that these are the strongest indicators of the extent of the implementation of risk management in air cargo handling projects at JKIA. The implementation of procurement management in air cargo handling projects at JKIA is mostly indicated by the five principle of procurement – value for money, competition, transparency and accountability; procurement planning; conduct procurement; and control procurement. Swissport Kenya, as one of the foremost air cargo handling companies at JKIA has managed to incorporate all of these into its procurement management strategies and, as such, amplified its impact of the overall performance of its projects.

The most important project design strategies employed on air cargo handling projects at JKIA are: the use of cost effective design of supply chain management; balanced cost management of flight legs; the incorporation of ACRM and IATA 2000 standards in its operations. This implies that these are the strongest indicators of project design at Swissport Kenya Ltd. Air cargo handling projects at JKIA benefit from the prioritization of acceptable deliverables as exemplified by project quality control; efficient cost management; effective logistics and supply management; and proper human and resource management. This demonstrates that the attainment of acceptable deliverables is the most important consideration for air cargo handling companies at JKIA.

VI. RECOMMENDATION AND SUGGESTIONS

Swissport Kenya should endeavour to improve its risk management strategies in order to stay ahead of any new incidences of risk and uncertainty. It can do this through the incorporation of an air cargo risk handling database which will facilitate quick identification of risks and the initiation of the appropriate remedial measures since all the ground handlers will be able to pool their safety and operational information, thus ensuring a more proactive approach to risk management. Given the importance of procurement management in air cargo handling projects, Swissport Kenya should improve its management of the air freight supply chain by ensuring that the needs of air carriers and operators, postal couriers, consignors, consignees, regulation agents, and ground handling agents are considered when developing the procurement strategy. Additionally, the company should maintain a comprehensive knowledge database of the markets in which it operates so as to continue to develop the most effective procurement strategies of the highest quality goods and services at the most competitive prices and at the right time. Finally, the organisation should ensure open channels of communication with all of its suppliers to ensure clarity on both parties' needs through the incorporation of a supplier relationship management system.

The organisation should conduct more awareness campaigns amongst its staff regarding the ACRM systems that it uses so to raise their knowhow and make everyone an ambassador of the organisation. The focus should be on highlighting the importance of ACRM systems to the operations of the company. The organisation can also improve its project design strategies by investing in more autonomous aircraft which employ the use of specialised systems such as auxiliary power units, large fuel and water capacity, ground level baggage handling, and on-board stairs which are incorporated on-board the aircraft. Such systems lead to reduction in ground handling costs and increased turnaround times. Although Swissport Kenya has maintained exceptional attention to acceptable deliverables, it can still improve through the prioritisation of the adoption of best practices to control and monitor administration expenses such as the costs associated with selecting and communicating with carriers, dispatching shipping instructions, maximizing compliance, controlling costs, paying invoices, assessing efficiency of trade routes, tracking freight, and entering data into their systems. There has been little research done on specific air cargo handling operations in Kenya given that the majority of the research has focused on horticultural importation dynamics within the aviation industry. This should, therefore, be a priority for future researchers and scholars. Additionally, most of the research has focused primarily on passenger aviation so more needs to be done on air freight research. Thirdly, the technical aspects of air cargo operations in Africa, in general, and Kenya, in particular, have been left mainly to regulators such as IATA and excluding empirical studies. This should be another priority for research.

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