International Journal of Innovative Research and Advanced Studies (IJIRAS)
Volume 3 Issue 7, June 2016

ISSN: 2394-4404

The Role Of Stakeholders In Implementation Of Air Safety Projects In Kenya: A Case Study Of Jomo Kenyatta International Airport, Nairobi

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Abstract: ***The recent years have seen tremendous growth in air traffic and many cases of air traffic accidents and incidents have been witnessed. In response aviation players have increased their focus on the safety of passengers and aircraft both on ground and in flight. One such body, International Civil Aviation Organization (ICAO) working with its member states initiates safety projects for implementation. Implementation of safety projects has remained below the global targets in most African states and consequently high accident rates. Stakeholders' engagement has been identified as one of the factors that affect project implementation in other industries. The purpose of this study was to investigate the role of stakeholder involvement in implementation of air safety projects in Jomo Kenyatta International Airport (JKIA), Kenya. The study adopted descriptive research design with a target population of 131 Kenya Civil Aviation Authority (KCAA) staff stationed at JKIA. This method was chosen because in using it, the researcher only reports on what is happening or what has happened. Questionnaires were be used to collect primary data from a whole sample of 131 respondents drawn from three departments in Air Navigation Services Directorate. The data was analyzed using Statistical Package for Social Sciences (SPSS) version 23. The tool was found to be very reliable with Cronbach's Alpha ranging from 0.984 to 0.993. The study revealed that stakeholder involvement affected implementation of air safety projects to a great extent (Spearman's correlation coefficients of 0.875). The finding further showed that the implementation of safety projects at JKIA was not successful. Only 28.6 % of the respondents agreed that air safety projects were fully implemented. The study recommends the need to develop policies that specifically address safety initiatives and their implementation. The policies should elaborately address engagement with stakeholders in the aviation industry in order minimize interference during project implementation.***

Keywords: Air Safety, Stakeholder, Aircraft Accident

I. INTRODUCTION

The aviation industry plays a major role in the world economy and is one of the fastest growing sectors globally (Awori, 2009). Over the last triennium, air traffic volumes have experienced continuous and sustained growth. In 2012, approximately 31.2 million departures were performed by scheduled commercial operators representing an increase of 3.5 per cent over the previous years. The air transport system carried approximately 2.9 billion passengers in 2012, representing a 5.5 per cent increase in scheduled commercial revenue passenger-kilometers (RPKs) over the previous year (ICAO, State Of Global Aviation Safety, 2013).

Aviation safety is a key pillar of success strategies of any industry player. As such ICAO has come up with safety initiatives which include safety management, aerodrome safety, loss of control in flight, fatigue management among others. ICAO strives to implement practical and achievable

measures to improve safety and efficiency in all sectors of the air transportation system. These initiatives aim at reducing aircraft accidents. Over the years air transport has experienced a number of aircraft accidents. In 2012, a total of 99 accidents were reported with a 372 fatalities (ICAO, State Of Global Aviation Safety, 2013). In 2014 a t total of 98 accidents were recorded with 904 fatalities. (ICAO, Annual Safety Report, 2015).

A. OVERVIEW OF GLOBAL SAFETY

Implementation and development of new safety initiatives remains the focus of most states. The Runway Safety Programme, Fatigue Risk Management Systems and Safety Collaborative Networks (SCAN) are a few examples of how ICAO is working with stakeholders to identify, manage and eliminate hazards (Mariera, 2014). According to ICAO's Universal Safety Oversight Audit Programme (USOAP), which provides in-depth information about a State's level of effective implementation of Standards and Recommended Practices (SARPs), this level has remained below the world average (61%) in Africa and the Oceanic at 44 and 48 per cent respectively. North America is ahead of the rest with 93% implementation (ICAO, State Of Global Aviation Safety, 2013). The Abuja declaration (2012), required all African states to ensure a progressively increase in the Effective Implementation of ICAO programs to no less than 70% Safety Management System (SMS) by the end of 2015.

Accident rate remains high in Africa and Indian Ocean region. In 2014, Africa and Indian Ocean (AFI) region recorded 8.6 accidents per million departures against a world average of 3 accidents per million. (ICAO, Annual Safety Report, 2015). During the same year, AFI region alone accounted for 2% of the total air traffic but contributed to about 13% of the total fatalities. States within the AFI Region have not established effective safety oversight systems within the Civil Aviation Administration (CAA). They lack expertise, thereby creating a situation for unsafe conditions that could contribute to the high accident rate in the AFI Region. In order to effectively address these deficiencies, there is need for AFI States to commit to the implementation of ICAO provisions.

B. AVIATION SAFETY IN KENYA

The aviation industry has been growing steadily in Kenya with many airports being built. Jomo Kenyatta International Airport (JKIA) in Nairobi is the largest aviation facility in Kenya and the busiest airport in East Africa. The airport has been handling an increasing number of aircraft movements which is expected to rise to about 34 million by 2030 (Njuguna, 2013).This number includes landings, departures and over flights to other destinations in the world. Jomo Kenyatta International Airport handles over 30 scheduled airlines operating to and from Europe, the Middle East, the Far East and African Region. It accounts for about 75% of the national aviation. It is among the busiest airports in Africa with respect to cargo traffic (Ogoye, 2013).

The design and construction of JKIA dates back to pre-independence age. In the mid 1950's, Embakasi Airport was constructed and was opened in 1958 to serve the first generation Boeing 707/ DC-8. Upon independence, it was renamed Nairobi International Airport in 1964. A dramatic increase in air passenger traffic from 0.25 million in 1960 to 1.5 million in the late 1960's necessitated an airport with the capacity to handle long-term demand. With the ideal location of Nairobi International Airport, it was decided that a new airport would be built within the same area and the existing runway retained. On March 14, 1978, Nairobi International Airport was replaced by Jomo Kenyatta International Airport (Mariera, 2014).

C. STAKEHOLDER ENGAGEMENT IN PROJECTS

A stakeholder is any group or individual who can affect or be affected by the achievement of the organization objectives. Stakeholder Theory, conceived by the American philosopher and a professor of Business Administration (University of Virginia) in 1984, argues that other than the owners of an organisation, there are other parties who affect the firm. They include employees, suppliers, financiers, communities, governmental bodies, political groups, trade associations and trade unions among others (Freeman, 1984).

Previous studies revealed the importance of stakeholders in projects. Kimando et al (2012) noted that the introduction of an entrepreneurship development fund by the government of Kenya with a view to encouraging the youth to venture into self employment, was very generous move. It however required the support of various stakeholders to succeed. Shaban & Enshassi (2008) noted that the performance of the construction industry in Gaza Strip (India) was affected by clients, contractors, consultants, stakeholders, regulators, national economies and others. Kagendo (2013) noted that stakeholders were key partners in strategy implementation at Children of Kibira Foundation. Some stakeholders, according to the author, provided funding while others provided technical support hence their involvement was key for the success of project implementation at the Foundation.

Project implementation is the phase where visions and plans become reality. This is the logical conclusion, after evaluating, deciding, visioning, planning, applying for funds and finding the financial resources of a project (Dillon, 2008). The purpose of project implementation is to develop the product, service or process that the project was commissioned to give as deliverables. This phase consumes over 85% of the project resources (Gitonga, 2010). Stakeholder involvement requires working directly with the players to ensure that their concerns are fully understood and considered in decision making. Engagement channels include Multi-stakeholder forums, advisory panels, and consensus building processes. Participatory decision making processes among others, (Thomas and Lever, 2003).

D. STATEMENT OF THE PROBLEM

The level of effective implementation of air safety Standards And Recommended Practices have remained below global target in Kenya and most African states despite adoption of world targets over the years (ICAO, 2013). In 2012, the resolution of Significant Safety Concerns (SSCs) and progressive increase in implementation of applicable

ICAO Standards and Recommended Practices to not less than 60% were adopted by most African member states but only a few states achieved the targets. With the low implementation level, African states continue to record high aircraft accident rates compared to other world regions. Engagement of stakeholders has been identified as one of the factors that determine the success of project implementation in organizations with many players. Little effort has been put towards research on air safety in the aviation industry in Kenya

The purpose of this study was to investigate the role of stakeholders in implementation of safety projects in JKIA. It focused on involvement of stakeholders in projects to realize project deliverables within schedule and quality specifications.

E. OBJECTIVE OF THE STUDY

The general objective of the study was to investigate the role of stakeholders in implementation of air safety projects in the aviation industry at JKIA. The specific objective was to assess the extent to which stakeholder involvement affected implementation of air safety projects at the airport.

II. MATERIALS AND METHODS

The study was descriptive in nature conducted through questionnaires. A population of 131 employees drawn from three departments of Air Traffic Services, Aeronautical Information Services and Engineering was targeted. The departments were purposively selected because of their direct involvement in implementation of air safety projects. Data was collected and analyzed both qualitatively and quantitatively using descriptive statistics, correlation and regression analysis to explain the relationships between the independent and dependent variables.

III. RESULTS AND DISCUSSIONS

The findings showed that stakeholder involvement affected implementation of air safety projects at JKIA. The majority of the respondents (38.4%) strongly agreed that stakeholder involvement affected implementation of air safety projects and a further 28.6% responding in the affirmative.

Stakeholder needs analysis recorded the lowest mean rating of 2.85 with the majority (46.6 %) disagreeing with the statement that the organization carried out stakeholder needs analysis.

The interests of stakeholders involved affected implementation of air safety projects at JKIA. The majority (52.7 %) of the respondents agreed to the statement that stakeholders' interest affected implementation of the projects. Only 6.3 % strongly disagreed.

The results revealed that appropriate channels of stakeholder engagement were used by KCAA in reaching out to aviation players. Most of the respondents (58.9 %) indicated that the organization used appropriate channels to engage stakeholders. Only 19.6 % of the respondents affirmed that all stakeholders were engaged.

The study sought information on the respondents' rating of the overall level of involvement of stakeholders in JKIA with regard to implementation of air safety projects. The results were as shown in table 1 below.

Rating	Frequency	Percentage
Excellent	8	7.1
Good	18	16.1
Average	24	21.4
Below Average	32	28.6
Poor	30	26.8

Table 1: Level of involvement of stakeholders in JKIA

The result in the table above is an indication that level of stakeholder involvement in JKIA was below average. Only 7.1 % rates the level as excellent.

Thomas and Lever (2003) argued that engaging stakeholders contributes to the chances of airport development being sustainable because people brought into the process feel part of the development, thus gaining their consensus for future development. Stakeholder involvement requires working directly with the players to ensure that their concerns are fully understood and considered in decision making. Engagement channels include Multi-stakeholder forums. advisory panels, consensus building processes. Participatory decision making processes among others.

This study revealed that the implementation of air safety projects was below average at JKIA. Project implementation constructs received approval of less than half of the respondents. A total of 28.6 % were of the opinion that air safety projects are fully implemented at JKIA. This was below the global target for African states as per the Abuja declaration (2012), all African states should ensure a progressively increase in the Effective Implementation of ICAO programs to no less than 70% by the end of the year 2015. The result is a clear indication that the organization is lagging. The results were summarized and presented as shown in the table 2 below.

Statement	Agree (%)	Strongly agree (%)	Mean
Projects implemented within schedule	16.1	9.8	2.56
Projects implemented as per scope	27.7	7.1	3.05
Projects conform to quality specifications	17.0	8.9	2.56
Projects are implemented successfully	17.9	10.9	2.8

Table 2: Extent of implementation of air safety projects in JKIA

REGRESSION ANALYSIS

The regression analysis for stakeholder involvement in relation to achieving set project quality specifications depicted a strong relationship between stakeholder involvement and project quality. The results were computed at 95% confidence level and are summarized and presented in table 3 below.

ISSN: 2394-4404

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.935[a]	.874	.871	.438

a. Predictors: (Constant), Stakeholders' own interest, Channels of engagement, Stakeholder Needs Analysis.

b. Dependent Variable: Quality specification

Table 3: Stakeholder involvement in relation to achieving set quality specifications

The R value of 0.935 indicates a strong positive relationship between stakeholder involvement and achievement of set quality specifications. The computed coefficient of determination, R Squared was found to be 0.871 implying that 87.1 % variability in achieving set quality specifications in implementing air safety projects is attributed to stakeholder engagement.

The regression analysis for stakeholder involvement in relation to achieving project scope depicted a strong relationship between stakeholder involvement and project quality. The results were computed at 95% confidence level and are summarized and presented in table 4 below.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.932[a]	.868	.864	.376

a. Predictors: (Constant), Stakeholders' own interest, Channels of engagement, Stakeholder Needs Analysis.

b. Dependent Variable: Project scope

Table 4: Stakeholder involvement in relation to achieving set project scope

The R value of 0.932 indicates a strong positive relationship between stakeholder involvement and attainment of project scope. The computed coefficient of determination, R Squared was found to be 0.868 implying that 86.8 % variability in attaining set scope while implementing air safety projects is attributed to stakeholder engagement.

The regression analysis for stakeholder involvement in relation to delivering project specifications within schedule depicted a strong relationship between stakeholder involvement and time. The results were computed at 95% confidence level and are summarized and presented in table 5 below.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.900	.897	.410

a. Predictors: (Constant), Stakeholders' own interest, Channels of engagement, Stakeholder Needs Analysis.

b. Dependent Variable: Schedule

Table 5: Stakeholder involvement in relation to delivery of project on schedule

The R value of 0.949 indicates a strong positive relationship between stakeholder involvement and delivery of project on schedule. The computed coefficient of determination, R Squared was found to be 0.900 implying that 90% variability in completing project on schedule while implementing air safety projects is attributed to stakeholder engagement.

Table 6 below shows the coefficients of correlation between stakeholder involvement and implementation of air safety projects at JKIA.

Independent variable	Karl Pearson coefficient	Significance (2 - tailed)	Spearman Rank Coefficient	Significance (2 - tailed)
Stakeholder involvement	0.875	0.000	0.913	0.000

Table 6: Correlation Results

The findings showed a very high positive correlation between stakeholder involvement and implementation of air safety projects in JKIA. This confirms the results of regression analysis in earlier section and is in line with the study by Kagendo (2013).

IV. DISCUSSION

The study deduced that stakeholder involvement affected implementation of air safety projects at JKIA. With a Spearman's rank correlation coefficient of 0.913, it is clear that the implementation of air safety projects is closely dependent of strong and healthy engagement of stakeholders. Engagement of industry players who include airlines, service providers, airport management, donors and regulators showed strong correlation with attainment of project quality and scope and delivery within schedule. The results indicated that the interests of various stakeholders affected delivery of projects aspects even as the appropriate channels of engagement were employed by the project teams. Stakeholder Needs Analysis received low approval from the respondents indicating high chances of addressing requirements least in priority.

The study found out that implementation of air safety projects was below average at JKIA. Most aspects of project implementation received low approval from the respondents with only innovation and scope rated above 3 in the Likert scale of 1 to 5 used. This shows that quality of air safety projects was below standard outlined in the manual of standards for ANS projects. These results are in concurrence with the findings of studies by Chocho et al (2009) and Nyaga & Mokaya (2009) who revealed a weak institutional implementation capacity within KCAA which required immediate attention. The authors furthermore indicated that the implementation of the safety management system was not effective and to the required ICAO standards. Successful SMS implementation was a function of a clear safety policy and structure, partnership among stakeholders among other factors.

V. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings, the study concluded that implementation of air safety projects in Kenya was affected by engagement level of stakeholders to a large extent. The level of implementation of air safety projects had not acquired the expected level of performance in terms project quality, scope and delivery within schedule.

Air safety projects are inherently presumed under aviation projects; it is evident that they are different from infrastructural projects undertaken within the airports. There is therefore need to develop policies that specifically address safety initiatives and their implementation. The policies should elaborately address engagement with stakeholders in

the aviation industry in order minimize interference during project implementation. The engagement will enable harmonization of the organization's goals and objectives with the aspirations of the stakeholders and reduce dissonance levels thereby increasing satisfaction. The authority should pay more attention to new and emerging technologies that enhance communication and flow of information to reach most stakeholders within acceptable timeline.

There is need to encourage more involvement of ANS staff in the conceptualization and implementation of air safety projects. The end users of air safety projects are the staff in the ANS directorate and so their participation will enhance positive attitude towards the projects and consequently increase level of implementation.

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