The Application of McKinsey Matrix in Determination of Route Attractiveness and Resource Allocation in Kenya Airways

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Abstract

The study sought to assess the application of the McKinsey Matrix in determination of route attractiveness and resource allocation in Kenya Airways (KQ), as basis for resource allocation. The positions of KQ routes were plotted on the matrix and possible alternatives of resource allocation decisions highlighted. The study was explanatory using a survey questionnaire to collect data from 100 managers and supervisors. Both descriptive and inferential statistical tools were used to analyze data. 14 factors were used to study the applicability of the Matrix on market attractiveness; market growth, market size, barriers to entry, competitive rivalry, market concentration, fares, customers, economic growth, market segmentation, product differentiation, bargaining power of suppliers and airline, substitutes, and technology development, all with a mean score of 2.24. The mean on the 12 factors for the competitive strength was 2.79. The factors considered were marketing, customer loyalty, frequency of flights, market share, distribution strength, customer service; partnerships, loyalty programs, market segment, baggage allowance and customer complaints. Business strength variables had a mean of 2.46. The results show that the matrix is indeed applicable within KQ operations. The three variables under study have positive linear relationships; market attractiveness against business strength 0.821, while against resource allocation; it has a correlation coefficient of 0.849. The correlation coefficient between business strength and resource allocation was found to be positive at 0.955. From the findings, 96.1% of changes in resource allocation can be attributed to market attractiveness and business strength. The matrix is used in market assessment and is a key determinant in resource allocation. Resource allocation for routes in the "Grow/Penetrate" cell should be geared towards seeking dominance while those in "Invest for Growth" cell should focus on identifying weaknesses and building strengths for market leadership. In the "Selective Harvest or Investment" routes, resources should be channeled towards identifying growth segments and investing heavily in them. Routes in the "Segment and selective Investment" cell, should identify growth segments, invest selectively and specialize in them.

Key Words: Route attractiveness, McKinsey Matrix, markets assessment, resource allocation, selective harvest, competitive strength

Background

In the airline industry, decisions are constantly being made on route system and resources are being shifted in between routes in line with strategic decisions. In resource allocation decisions, attention is given to the broad constructs of competitive strength and market attractiveness (Abbel and Hammond, 1979). These two sets of variables help airlines determine which routes are attractive enough to warrant allocation of resources. Route planning is a core part of the airline strategy; other structures then fall into place. At the core of KQ strategy is the route system. As Chandler (1962) says, structure follows strategy; determining long-term goals and objectives and allocation of resources. Structures on the other hand, will be the resulting design of the organization through which the firm is administrated and the strategy supported; making route system the heartbeat of an airline.

Several factors affect the attractiveness of routes that an airline selects; internationally, governments grant rights to airlines through bilateral and multilateral agreements, which enable them to operate to their destinations. The agreements referred to as Air Service Agreements (ASAs) form the basis of an airline's route system (ICAO, 2008). The degree of flexibility accorded an airline by such agreements will partly determine the attractiveness of the target route.

In 1971, McKinsey and company developed a portfolio management tool for General Electric (GE). Popularly referred to as the McKinsey Matrix or the Industry Attractiveness – Business Strength matrix (Figure 1), was to evaluate each GE business unit along the composite dimensions of industry attractiveness and business strength. The matrix requires the identification and assessment of both external and internal factors, followed by positioning each by unit in terms of overall industry attractiveness and business strength on a nine-cell grid. Three categories are used to classify both attractiveness and strength; to grow, to hold, or to harvest. This involves making moves in each controllable factor to result in a desirable competitive position. Strategies must be formulated aimed at securing long-term sustainable competitive advantage. The global strategy chosen has to be fitted to the actual internal capabilities of the firm.

		INDUSTRY/MARKET ATTRACTIVENESS		
		HIGH	**MEDIUM**	**LOW**
		Invest and Grow	**Selective Growth**	**Selective Growth**
BUSINESS STRENGTH	HIGH	Seek dominance Maximize investment **(Leader)**	Identify Growth area Invest in growth **(Try harder)**	Maintain position Seek cash position **(Cash generation)**
	MEDIUM	**Selective Growth** Identify weaknesses Build on strengths	**Selectivity** Specialize Invest selectively **(Proceed with care)**	**Harvest /Divert** Pure lines Minimize investment **(Phased withdrawal)**
	LOW	**Selectivity** Specialize niche Seek acquisition **(Improve or quit)**	**Harvest /Divert** Specialize niche Consider exit **(Phased withdrawal)**	**Harvest /Divert** Attack Rivals Time exit **(Withdrawal)**

Figure 1: The GE/McKinsey Matrix (1971)

Source: McKinsey (1971)

Kenya Airways' investment in four Boeing 777 aircraft, worth US\$ 300 million was the result of route planning, which forecasted growth into existing markets such as London, Paris, Amsterdam and expansion into new markets. KQ route system presently comprises 50 destinations; 4 domestic; 38 within Africa; 3 in Europe, 2 in Middle East and 4 in Asia and Far East. Included is a new destination, Malabo rolled out in last quarter of 2009, and Juba in the third quarter of 2010. In 2008/09, 4 more new destinations were rolled out. Foreign governments (Asia and Africa) tend to impose restrictions to protect their flag carriers from competition. World events and calamities like financial distress and weather can affect the level of attractiveness of certain destinations to an airline. At the close of the year 2009 and in the beginning of 2010, Europe had been hard hit by winter with snow and ice, making runways virtually invisible.

Statement of the Problem

With the global competitive aviation industry, Kenya Airways (KQ) seeks to enter new markets and expand into existing. KQ is already in the process of acquiring additional aircrafts for the said purpose. The enormity of the planned investment implies that the attractiveness of these markets must justify resource allocations. Studies have assessed markets for attractiveness and evaluated reactions within industries when some forces change, and all point to strategic alterations in order to remain relevant and competitive (Bett, 1995; Mohammed, 1995 and Sheikh, 2000). A study by Mutia (2000) on the aviation industry attractiveness found the Kenya market to be attractive to international airlines but did not consider attractiveness as basis for resource allocation.

A major consideration in strategic investments is the external and internal environment conditions, particularly industry attractiveness and business strength as postulated in McKinsey Matrix (1971). Though KQ has made major investments and gained entry into major markets, little is documented on major considerations in such investments, particularly the application of the McKinsey Matrix which provides a multidimensional framework for making such investment decisions based industry attractiveness and business strength.

Purpose

The study sought to assess the application of McKinsey Matrix in the determination of route attractiveness and resource allocation in Kenya Airways as basis for resource allocation.

Methods

The study adopted an explanatory research design. All the routes with Nairobi as the hub (operations starting and terminating in Nairobi) were selected and treated as business units. The study covered a census of 100 KQ staff (country managers, managers and supervisors at the head office in Nairobi). Data was collected using questionnaires administered through electronic mail. To ensure validity, the instrument was checked by experts. The reliability of the questionnaires was ascertained through a pilot test on 10 KQ staff. Descriptive and inferential statistical tools were used to analyze the collected data with the aid of SPSS computer programme. The mean and standard deviation were used to delineate the variable characteristics while a correlation and a multi-variate regression models were used to determine and explain relationship among the variables.

Results and Analysis

Preliminaries

Kenya Airways has a total of 50 destinations, 3 of them domestic. The rest of destinations are distributed across Europe (3), Middle East and Asia (5), Northern Africa (5), Southern Africa (12), West and Central Africa (18), East Africa (6), and domestic (3). In the last 6 years, KQ has launched 12 new routes; after the down-turn in the aviation industry beginning with the September 2001 terrorist attacks, and the 2009 world's economic downturn, and the subsequent rush to open new routes by all airlines. There are plans to open new routes to Mauritius and Rome, and acquisition of 7 new aircraft by 2012; replace the current B767-300 ER fleet with at least 9 new modern Dream Liner (B787) aircraft by the end of 2011; all with huge resource allocation implications.

Market Attractiveness

The study revealed high attractiveness of KQ routes with a mean score of 2.24 on a scale of 3. Market growth was the most significant market attractiveness factor with 2.79. 55% of the routes were found to be in attractive market in terms of growth rate. Further, 57.5% of the routes have market sizes of over 200,000 passengers and above per annum. 27.5% have market sizes of about 100,000 to 200,000 passengers per year; indication that KQ is attractive due to large market size.

Among barriers to entry and exit, cut-throat competition was found to be the most significant followed by start-up costs. Generally all the routes were found to allow easy entry with possibility of reducing attractiveness while 70% of the routes have low exit barriers. The study also revealed that 30% of the routes in markets with a high competitor rivalry while 65% of the routes were operating under moderate levels of rivalry; implying that KQ operates in markets characterized by high competitor rivalries (unattractive markets).

Market concentration was rated 5th overall; 62.5% of the routes are in concentrated markets and therefore, not very attractive. Rated 6th overall is fares; high fares are attractive and tend to lure airlines into certain destinations. Generally 57% of the routes were experiencing stable and rising fares, making them quite attractive. On consumer attributes, price sensitivity was found to be the most important to customers with a mean score of 1.59. Price sensitivity is high meaning that a small drop in prices can result in customer shifts. Economic growth and air travel were found to be directly related. 55% of the routes are in markets with high economic growth rate (attractive markets).

The market segmentation factor had an overall mean score of 2.29. Overall, 82.5% of the routes are already segmented but there is opportunity to segment 62.5% of its markets. KQ routes are therefore very attractive due to high possibility of segmentation. Further, there is room to differentiate product offering in 95% of the markets, meaning that most routes are very attractive.

The use of IT was found to have little influence on route attractiveness. The average attractiveness of all the routes was, 2.24 on a scale of 3, meaning that KQ is operating in highly attractive markets.

Competitive/Business Strength

The study used 12 factors for the competitive strength dimension. On a scale of 3, reliability received the highest weight of 2.79 meaning it is the most important factor of competitive strength. The lowest was marketing effort, which received a weight of 2.08 (detailed results in Table 1).

Table 1: Average Factor Weights and Overall Business Strength

No	Business strength factor	Average Weight	Standard Deviation
1.	Reliability	2.79	0.18
2.	Customer loyalty	2.75	0.21
3.	Frequency of flights	2.75	0.20
4.	Market share	2.67	0.23
5.	Distribution strength	2.54	0.17
6.	Customer service	2.50	0.20
7.	Partnerships	2.42	0.15
8.	Loyalty programs	2.33	0.07
9.	Market segment strength	2.25	0.14
10.	Baggage allowance	2.21	0.23
11.	Customer complaints	2.21	0.20
12.	Marketing effort	2.08	0.28
	Overall	**2.46**	**0.19**

Source: Research data (2010)

On frequency of flights, the study revealed that most of the routes have a moderate number of flight frequencies; a moderate strength on this factor. The larger the share of the market an airline has compared to its competitors, the stronger it is perceived to be. KQ routes enjoy an average market share of about 20% which implies a high business strength as market concentration was found to be very high. On customer service 40% rate it as moderate, implying need for improvement.

Applicability of the McKinsey Matrix in Kenya Airways' Routes

The McKinsey Matrix was applied by KQ in determining route attractiveness as basis for resource allocation. The KQ routes were plotted on the matrix using Ms Excel and inferences drawn using the generic McKinsey strategic implications. The route and region identities were kept secret; routes are represented by alphabetical letters while the regions are represented by roman numerals. The results (Figure 1) show that most KQ routes rate "High" on both McKinsey dimensions of market attractiveness and business strength. The most of them therefore sail in the "Growth/ Penetrate" cell. The other routes are clustered around this cell. This depicts a medium rating on both market attractiveness and business strength dimensions; meaning resource allocation decisions will be similar for a large number of routes.

Key 0-3 represents "low"; 3-6 represents "medium"; 6-9 represents "High"

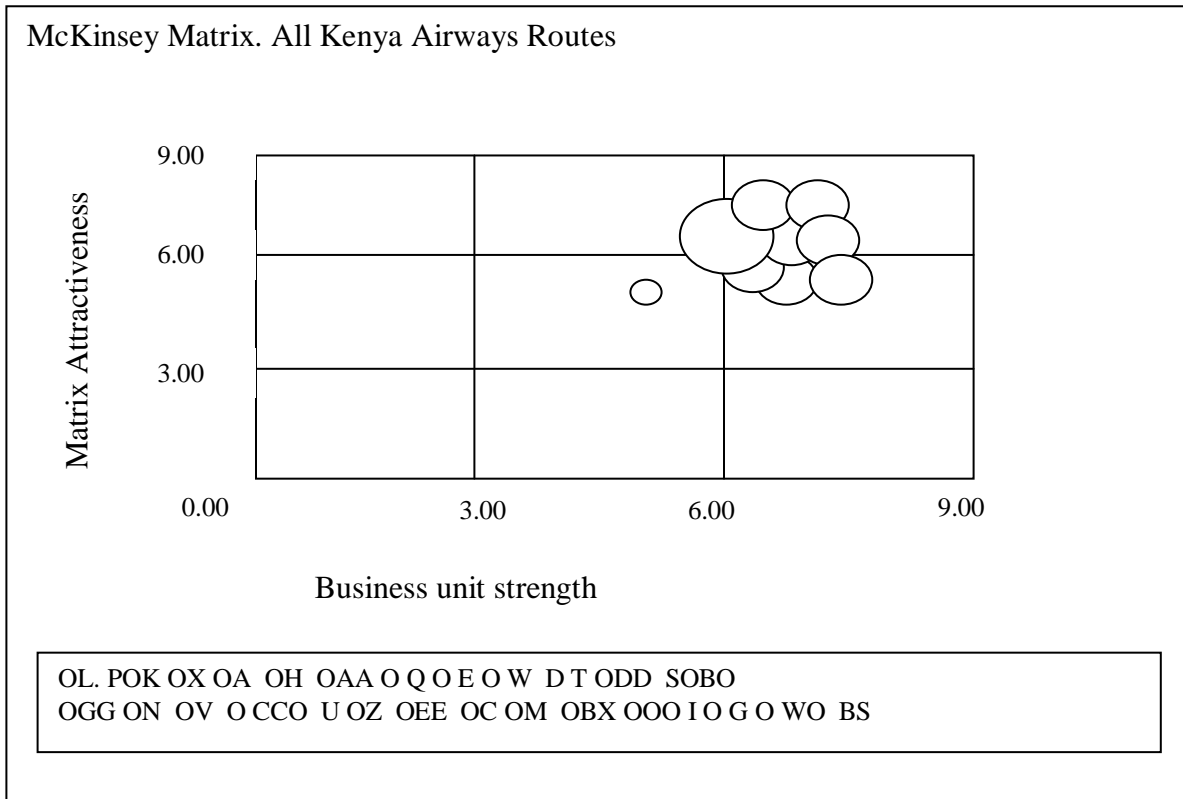McKinsey Matrix. All Kenya Airways Routes

Figure 2: McKinsey Matrix for all Kenya Airways Routes

Source: Research Data (2010)

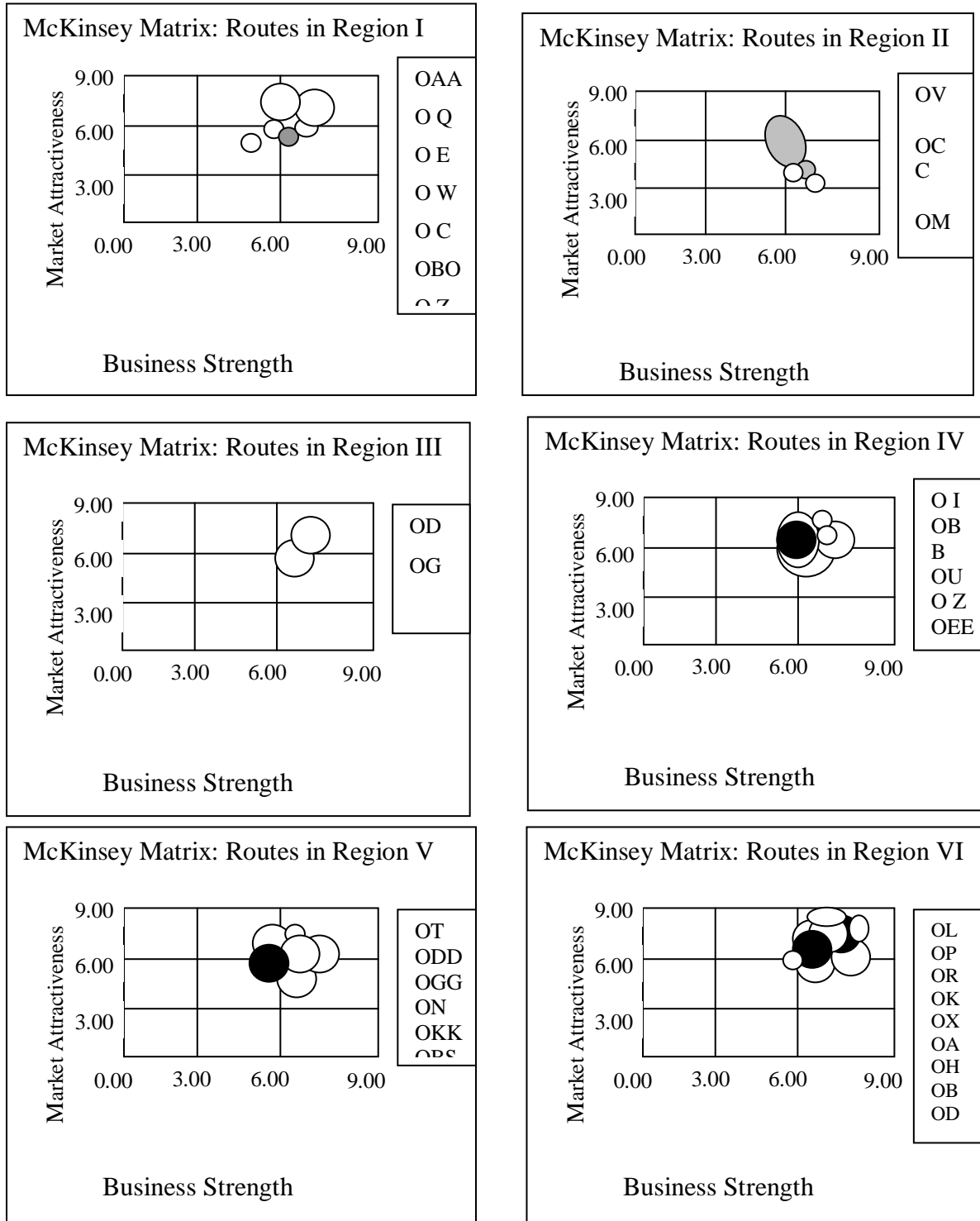The results in Figure 3 show McKinsey matrices for each of the 6 regions of KQ.

Figure 3: McKinsey Matrix for each of the 6 KQ regions

Source: Survey data (2010)

The results in Figure 2 have been explained and summarized in Table 2; routes that fall under each cell of the matrix. The routes mainly fell into 4 cells namely "Grow/Penetrate", "Invest for Growth", "Selective Harvest or investment" and "Segment and Selective" investment.

Table 2: Cell positions of Routes on the McKinsey Matrix

	Matrix cell	Frequency	Percent	Region	Routes
1.	Grow / penetrate	21	52.5%	I	AA, Q
				II	V
				III	D
				IV	I, BB, U, F, EE
				V	N
				VI	L, R, K, X, H
2.	Invest for growth	4	10%	V	S
				VI	P, O
3.	Selective investment or investment	-	-	None	None
4.	Selective harvest or investment	12	30%	I	W, C
				II	CC, M
				III	G
				V	T, DD, GG
				VI	B
5.	Select and selective harvesting	3	7.5%	I	E
				VI	A
6.	Controlled harvest or exit	-	-	None	None
7.	Harvest for cash generation	-	-	None	None
8.	Controlled harvest	-	-	None	None
9.	Rapid exit or attack business	-	-	None	None

Source: Research data (2010)

As revealed by the study, 52.5% of the routes fall in the "Grow/Penetrate cell of the matrix. They are to be found in all the regions, but most of them fall under regions IV and VI. Overall, 10% of the routes studied fall in the "Invest for Growth" cell of the matrix. These are in regions V and VI. The study revealed that a number of routes fall in the "Selective Harvest/Investment" cell. These are routes where Kenya Airways has good business strength but the markets are losing attractiveness. On the matrix, these routes fall in the cell with high business strength but medium market attractiveness. This is one of the three desirable cells in the matrix where business units should be retained, grown and developed. Although they may be self-supporting in cash flow, some of the routes may require some support. The stronger routes can be harvested for cash flows but care should be taken so as not to run them down prematurely. 30% of the routes studied fall into this cell.

The airlines attractiveness and business strength is average in these routes. These are routes in the cell that has medium business strength and medium market attractiveness. Business units that fall on the diagonal strip of the matrix running down from the top left to bottom right should be treated with caution as they are weak routes that can either improve to a hold position or drop down to a divert position. 7% of the routes fall within this cell and can be found in regions I and VI.

Analysis of Variable Relationships

The study conducted a Pearson Correlation Analysis for the three study variables and noted that industry attractiveness significantly affected the other study variables since all of them had P Value of less than 0.05. There existed a very strong and positive correlation between industry attractiveness and business strength with a correlation coefficient of 0.821. Industry attractiveness and resource allocation had a strong and positive correlation of 0.849. The same was with business strength and resource allocation at 0.955 (Table 3).

Table 3: Correlation of the Study Variables

		Industry Attractiveness	Business Strength	Resource Allocation
Industry Attractiveness	Pearson Correlation	1	.821(**)	.849(**)
	Sig. (2-tailed)		.00	.00
	N	78	78	78
Business Strength	Pearson Correlation	.821(**)	1	.955(**)
	Sig. (2-tailed)	.00		.00
	N	78	78	78
Resource Allocation	Pearson Correlation	.849(**)	.955(**)	1
	Sig. (2-tailed)	.00	.00	
	N	78	78	78

** Correlation is significant at the 0.05 level (2-tailed).

Source: Research data (2010)

A multivariate regression model was applied to determine the relative importance of each of the two independent variables with respect to the resource allocation at Kenya Airways. As shown in Table 4, the adjusted R^2, the coefficient of determination is 0.961. This means that 96.1% of the changes in resource allocation at Kenya Airways can be explained by industry attractiveness and business strength.

Table 4: Coefficient of Determination for the Study

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.982(a)	.964	.961	.50875

a Predictors: (Constant), industry attractiveness and business strength
Source: Research data (2010)

The analysis also sought to determine the differences between the means of the study variables. In this quest, the study conducted an ANOVA test for the study variables. From the findings (Table 5), it is clear from the P-value that there was a significant difference in the means. The level of significance is 0.00 which is much less than the acceptable level of 0.05 hence establishing significant differences.

Table 5: ANOVA Tests

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	892.707	3	223.177	861.085	.00(a)
	Residual	54.428	75	.259		
	Total	947.135	78			

a Predictors: (Constant), Industry Attractiveness and Business Strength
b Dependent Variable: Resource Allocation.
Source: Research data (2010)

The study conducted coefficient of determination for the two independent variables; industry attractiveness and business strength with the following resulting model;

$Y = 28.630 + 0.470 X_1 + 0.412 X_2$
Predictor Power (1.068) (049) (0.036)
P- Value (0.03) (0.00) (0.00)

From the coefficients of the study variables, it can be seen that the variables had great influence on resource allocation at KQ since they all had a P-Value of less than 0.05. Industry attractiveness had a coefficient value of 0.470 while business strength had 0.412, showing that both independent variables had a great effect on the resource allocation decisions.

Table 6: Coefficients

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	28.630	1.068		26.802	.03
	Industry Attractiveness	.470	.049	.332	9.074	.00
	Business Strength	.412	.036	.561	8.207	.00

a Dependent Variable: Resource Allocation
Source: Research Data (2010)

Conclusions

The study concluded that the McKinsey Matrix can indeed be applied in the airline industry in assessing industry attractiveness and business strength as a basis for resource allocation decisions. The matrix can be used in similar fashion by other companies or those with different lines of products competing in different markets. There were positive linear relationships among the three study variables; market attractiveness against business strength had a positive linear correlation with a coefficient of 0.821, while against resource allocation, it had a correlation coefficient of 0.849. The correlation coefficient between business strength and resource allocation was found to be positive at 0.955. From the coefficient of determination, 96.1% of the changes in resource allocation within Kenya Airways route system can be attributed to market attractiveness and business strength.

Recommendations

Based on the research findings, Kenya Airways should work towards reducing the competitive rivalry wars with the competitors. This could be done through the use of a blue ocean strategy. The organization could also segment their market further, through engaging in more product differentiation. The bargaining power of suppliers could be reduced further and its place taken up by the bargaining power of the airline. To achieve better monitoring and progress, the airline could also enhance their technology through advancing it further. The airline should forge stronger partnerships, code shares and alliances to allow enjoy deeper penetration to profitable regions within the aviation network, as well as prepare better strategies for market segment strengths. Customer complaints should be reduced by having the right people take up the right jobs and the airline should also develop better marketing.
Resource allocation for routes in the "Grow/Penetrate" cell should be geared towards seeking dominance while those in "Invest for Growth" cell should focus on identifying weaknesses and building strengths for market leadership. In the "Selective Harvest or Investment" routes, resources should be channeled towards identifying growth segments and investing heavily in them. Routes in the "Segment and selective Investment" cell, should identify growth segments, invest selectively and specialize in them.

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