



## The Role of Management Information Systems on Strategic Decision Making Among Tea Factories in Kenya

**Simon Gitiba  
Gikang'a**

Jomo Kenyatta University of Agriculture and Technology (JKUAT)- Kenya

**Dr Fred Mugambi  
Mwirigi**

Jomo Kenyatta University of Agriculture and Technology (JKUAT)- Kenya

**Dr Moses Otieno**

Jomo Kenyatta University of Agriculture and Technology (JKUAT)- Kenya

**ABSTRACT**

The purpose of the study was sought to bridge this pertinent gap in literature by establishing the role of management information systems on strategic decision making among tea factories in Kenya. The study adopted a descriptive survey design. The target population of this study was all employees, management and directors of tea factories in Kenya. The study targeted 390 respondents and 284 questionnaires were properly filled and returned from the tea factory employees, which represents an overall successful response rate of 73%. To test reliability, Cronbach alpha was used to test the reliability of the instrument. The results were highly reliable and all the items appeared worthy of retention. Questionnaires were administered with the help of research assistants. Data was collected; questionnaires were coded and checked for completeness before data collected was entered in SPSS 20.0 for analysis.

The study findings indicated that the role of management information system was statistically significant in explaining the strategic decision making among the tea factories in Kenya. Results also indicated that all in all the HRIS is effective in meeting strategic goals which has improved in making prompt decisions and has increased coordination between HR department and top administrators.

The study concludes that intensive usage of management information systems in the tea factories generally increases the efficiency of doing business by creating new products and services, shortening the time to get to market, reducing the costs, decreasing the prices and more efficiently answering on the moves of the competitors and market changes. Therefore the strategic intention of managers of these factories should be a creation of new organizational climate based on the tighter cooperation between the individuals with the aim of achieving the synergic effects in internal entrepreneurial activities.

The study recommends that tea factories should emphasize customer relationship by investing in a customer relationship management system. Specifically, tea factories should invest in a robust Information technology system as this can certainly help companies to create satisfied and loyal customers. This is because customer relationship management is driven by technology rather than a well articulated customer strategy. In addition, it is recommended that factories need to allocate adequate resources for Customer Relationship Management.

**KEYWORDS**

Strategic Decision Making, Human Resource Management Information, Customer Relationship Management Information

**1. INTRODUCTION**

The role of information in decision-making cannot be overemphasized; and effective decision making demands accurate, timely and relevant information. As the numbers of employees, customers and transaction increases in an organization the more it becomes multifaceted, and the information needed for effective management, planning, decision-making and control invariably becomes more complex. Decision-making is the task of every top management in an organization and they need relevant and timely information to assist in making decisions.

According to Lucey (2005), relevant information increases knowledge, reduces uncertainty and is usable for the intended purpose. Although information does not serve as an alternative for good management, conversely management cannot be good without adequate information. Laudon (2006) defined information systems as a set of interrelated components that collect, process, store, and distribute information to support decision-making, coordination, and control in an organization. In addition to supporting decision-making, coordination, and control, information systems may also help managers and workers analyze problems, visualize complex subjects, and create new products.

With faster access to needed information through MIS, managers are able to make effective and timely decisions regarding investments, employment, new products and many more as it concerns their organizations. By decision - making, we refer to the process of choosing certain lines of action from among numerous alternatives. Decisions is basically an integral chunk of management and it occurs in every level (for example top management, middle management and lower management) and in every function (marketing, accounting, human resources, and production) (Lucey, 2005).

The effectiveness or otherwise of any organization is dependent on the quality of decisions that informs its operation. If decisions are right, it translates in positive organizational outcomes, but where organizational activities are executed in conditions of poor decisions resulting from insufficient or inaccurate information, such organization could be doomed. This is why decision making is a major determinant of organization's success or failure.

**2. STATEMENT OF THE PROBLEM**

Transition from industrial society to information and knowledge society has its impact on social, economic and cultural aspect of life. There are only few aspects of life nowadays which are unaffected by information technology. In recent

years, information systems technology has become crucial and is playing a critical role in contemporary society and dramatically is changing economy and business. Business is conducted in a global environment and simply could not serve without computer based information systems (Lucey, 2005). Furthermore, we are entering the information age because of information technology and information systems usage. The use of information systems especially is often understood to be changing the way business and organizations work as well as help managers reduce uncertainty in decision making.

Use of information technology, along with a variety of information systems that are designed for different needs is expanded. Information enables managers to make more and better connection with organization, the environment and each other. More participation in decision making, speed up decision making, increase the speed of identifying the issues, reducing the height of organization pyramid, improve coordination and increase skilled staff, Improve coordination and increase skilled staff, are just some of the impact that information technology and information systems have on some organization (Haag and Cummings, 2006).

According to Thompson and Beer (2000) in addition to more traditional systems which assist in the day-to-day business operations, information system is increasingly providing a competitive advantage for the organization. Several studies have found and reported diverse findings regarding information systems usage in decision making (Davis and Olson, 1985; Hicks, 1997; Kumar and Mittal, 2006; Jawadekar, 2008). Although decision making is one of the areas that information systems have sought most of all to affect, there have been only a few existing studies that have dealt and examined the role of information systems in management decision making. Lucey et al. (2005) and Haag and Cummings (2006) noted that information systems support decision making in organizations and vary among managerial levels. Information systems usage to support managers in decision making falls into one of two general categories of systems that help users to analyze a situation and leave the decision up to him/ her and systems that actually make some sort of recommendation concerning what action to take (Lucey, 2005; Haag and Cummings, 2006).

Companies have been investing heavily in information technology and systems so as to gain a competitive edge. This study is based on the premise that the passage of time and the very numerous and significant changes in the tea sector industry have led to totally different factors influencing the use of management information systems in the industry. Some studies attempting to shed some light on the subject under study are more generalistic and have failed to give detailed insights and analysis of the issues by the current study. This therefore leaves a knowledge gap that this study seeks to address on the role of management information systems on strategic decision making among tea factories in Kenya. So far no known study by the researcher has attempted to study the role of management information systems on strategic decision making among tea factories in Kenya.

### 3. PURPOSE OF THE PAPER

The purpose of this paper was to establish the role of management information systems on strategic decision making among tea factories in Kenya.

#### 3.1 Specific Objectives

The study was guided by the following specific objectives:

- i) To establish the influence of human resource management information system on strategic decision making among tea factories in Kenya.
- ii) To investigate whether customer relationship management information system affects strategic decision making among tea factories in Kenya.

## 4. LITERATURE REVIEW

### 4.1 Human Resource Management Information System

Human resource information systems HRIS provides manage-

ment with strategic data not only in recruitment and retention strategies, but also in merging HRIS data into large-scale corporate strategy. The data collected from HRIS provides management with decision-making tool. Through proper HR management, firms are able to perform calculations that have effects on the business as a whole. Such calculations include health-care costs per employee, pay benefits as a percentage of operating expense, cost per hire, return on training, turnover rates and costs, time required to fill certain jobs, return on human capital invested, and human value added (Asafa, 2007). So there have been many studies in the area of evaluating human resources information systems as one of the most important issue in recent times. Many of the studies have addressed evaluating human resources information systems from several points of view.

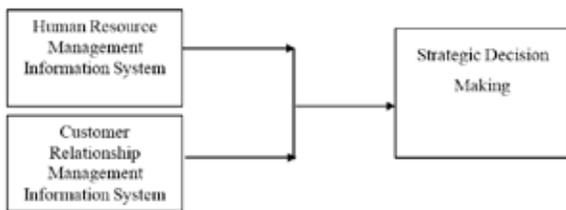
The study of Mohammad and Haroon (2012) aimed to demonstrate the impact of the effectiveness of the Application of human Resources Management System in Corporate Performance which perspective of workers in the Banking Sector in Jordanian Firm, The study found asset of results, including: 1) There is a significant effect between the quality of the output of human resources information system and institutional performance in banking sector in the Jordanian firm. 2) There is a statistically significant effect between motives and corporate performance in the banking sector in the Jordanian firm. 3) There is a significant effect between training and organizational performance in the banking sector in the Jordanian firm.

Jaber (2011) in his study identify the impact of environmental factors on the efficiency of internal organizational human resources management functions in the public institution for social security, the study found that there is an impact of environmental factors on the efficiency of internal organizational human resources management functions in the public institutions of social security. One of the most important recommendations was to focus on each delegation of authority, specialized work and moral incentives for staff

### 4.2 Customer Relationship Management Information System

Customer relationship management (CRM) is the overall process of building and maintaining profitable customer relationships by delivering superior customer value and satisfaction. A CRM strategy involves the entire enterprise and is employed on an ongoing basis. Despite the fact that CRM projects incur huge expenditures, a large percentage fails to achieve the stated objectives. A real successful CRM should integrate information technology (such as basics installation, applicable system), information resource (such as customer data base, well interaction with customer), organizational resource (for example, customer-oriented business culture, etc) all these can actually exert the best effectiveness (Pushkalaet al., 2006)

Shaukat and Zafarullah (2010) carried out a study on impact of information technology on organizational performance. An analysis of quantitative performance indicators of Pakistan's banking and manufacturing companies. The authors aimed to examine the impact of IT on organizational performance with respect to increase/decrease in organizational income and in no of employees Vs IT expenses incurred by the organizations working in manufacturing and banking sectors of Pakistan over period of 1994-2005. The primary data was collected through in-depth interviews and field surveys of 48 companies, 24 in manufacturing sector (12 local and 12 foreign) and 24 in banking sector (12 local and 12 foreign). The data was tested by applying different statistical/financial techniques. The conclusion of research is that, IT has positive impact on organizational performance of all the organizations. The banking sector performance outstrips the performance of manufacturing sector. In the banking sector local companies are taking the lead, while in manufacturing companies multinationals are at the top.



**5.METHODOLOGY**

This study adopted a descriptive survey design. The target population of this study was all employees, management and directors of tea factories in Kenya. The tea factories which constituted the population of study are 108 factories which are licensed by the Tea Board of Kenya for operation in year 2014. The study concentrated on only tea factories because it was expected that the players have the relevant and accurate information needed in this study. The sample was determined at two levels. The sampling was at an organisational level or tea factory level and the respondents' level. There are 108 tea factories and for the purposes of this study 30 factories were randomly selected as the units of study. To select the 30 factories, all the 108 factories were clustered into the eight tea growing zones. Three KTDA managed factories were randomly selected from each zone which adds upto 24 and the balance six were randomly selected from private run factories. This made up the 30 factories. This represents 28% of the 108 factories where as Mugenda and Mugenda (2003) and Gay (1981) recommend a 10% sample for a descriptive study.

A sample of 390 respondents was selected through stratified random sampling. The sample was distributed equally in all factories. Due to the rounding off of the distribution the sample has been rounded to the nearest decimal point leading to a sample of 390 respondents. The sample size was as laid on the sample matrix below on table 3.1

**Table 1.1: Sample Matrix**

Category	Sample Per Factory	Total Sample
Directors	2	60
Factory Manager	1	30
ICT Manager	1	30
Finance Manager	1	30
Operations Manager	1	30
Employees	7	210
Total	13	390

Data was collected, coded and analyzed using SPSS version 20.0. The findings were presented in form of tables and pie charts and discussions and interpretation of the same given.

**6. RESULTS AND DISCUSSIONS**

**6.1 Response Rate**

The number of questionnaires, administered to all the respondents, was 390. A total of 284 questionnaires were properly filled and returned from the tea factory employees. This represented an overall successful response rate of 73%. According to Mugenda and Mugenda (2003), a response rate of 50% or more is adequate. Babbie (2004) also asserted that return rates of 50% are acceptable to analyze and publish, 60% is good and 70% is very good.

**6.2 Reliability Analysis**

Cronbach's Alpha was used to verify the reliability of the proposed instrument. The findings indicated that strategic decision making had a coefficient of 0.746, human resource management information had a coefficient of 0.731, and customer relationship management information obtained a coefficient of 0.731. All the constructs depicted that the value of Cronbach's Alpha were above the suggested value of 0.7 thus the study was reliable and all the items were worthy retention (Kurpius and Stafford 2006; Cronbach, 1951).

**Table 1.2: Reliability Statistics**

Variable	Cronbach's Alpha	Comment
Strategic Decision Making	0.746	Accepted
Human Resource Management Information	0.731	Accepted
Customer Relationship Management Information	0.731	Accepted

**6.3 Descriptive Statistics**

The first objective of the study was to establish the influence of human resource management information system on strategic decision making among tea factories in Kenya. Results indicates that 76.8% of the respondents indicated that their HRIS had made their HR decisionmaking more effective, 75.3% agreed that the information generated from their HRIS helps their institution decide on employee issues and 73.9% agreed that the information generated from their HRIS helps their institution to make more effective promotion decisions. Furthermore, 79.6% of the respondents agreed that the information generated from their HRIS helps their institution decide when to hire, 76.1% agreed that the information generated from their HRIS helps their institution make better decisions in choosing better employees and 73.3% agreed that the information generated from their HRIS helps their institution decide when training and skill development are necessary. The mean score for responses for this section was 3.81 which indicates that majority of the respondents agreed that human resource management information system was a key determinant of strategic decision making among tea factories.

The second objective of the study was to investigate whether customer relationship management information system affects strategic decision making among tea factories in Kenya. Results illustrates that 70.1% of the respondents agreed that customer relationship information management system enabled the organization to analyze the customer profiles,

69.4% agreed that customer relationship information management system helped tea factories to identify the most profitable customer and prospects and 68.3% agreed that customer relationship information management system enabled the organization to provide better customer service. The mean score for responses for this section was 3.69 which indicates that majority of the respondents agreed that customer relationship management information system was a key determinant of strategic decision making among tea factories.

**7. MULTIPLE REGRESSION ANALYSIS**

A multiple regression analysis was conducted to investigate the joint causal relationship between the independent variables which are human resource management information and customer relationship management information and dependent variable (strategic decision making). This is represented by the overall model  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e$

The coefficient of determination R<sup>2</sup> and correlation coefficient (r) shows that the degree of association between the independent variables and strategic decision making. The results of the multiple regression indicate R<sup>2</sup> = .385 and R = .620 as shown in table 1.3. This is an indication that there is a strong relationship between independent variables; human resource management information and customer relationship management information and the dependent variable strategic decision making.

From the model summary table below adjusted R<sup>2</sup> was .380; this indicates that management information systems explain 38% of variations in strategic decision making. Therefore further research should be conducted to investigate these other factors that affect strategic decision making in the tea factories.

**Table 1.3: Model Summary**

Model	R	R 2	Adjusted R 2	Std. Error of the Estimate
1	.620	.385	.380	.56105

The analysis of variance presented in Table 1.4 shows the F value of the entire of the regression model was 87.862 (2,281)  $P < 0.05$ . The significance value generated by the model was 0.000 this shows that the overall model is significant. It further implies that independent variables; human resource management information and customer relationship management information have a significant influence on strategic decision making.

**Table 1.4: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	55.314	2	27.657	87.862	.000
1. Residual	88.452	281	.315		
Total	143.766	283			

**8. CONCLUSIONS**

The intensive usage of management information systems in the tea factories generally increases the efficiency of doing business by creating new products and services, shortening the time to get to market, reducing the costs, decreasing the prices and more efficiently answering on the moves of the competitors and market changes. Therefore the strategic intention of managers of these factories should be a creation of new organizational climate based on the tighter cooperation between the individuals with the aim of achieving the synergic effects in internal entrepreneurial activities.

Human resource management information system was found to have an effect on strategy decision making in tea factories. It can therefore be concluded that through use of HRIS the human resource department was easy to recruit and ease its operational activities since there was smooth flow of information. The study also concludes that through the use of HRIS the strategic HR tasks, the degree of the support depended on the type of organization. Larger firms/companies experienced a great deal of HRIS support in most of the strategic HR tasks namely communication, human resource development and workplace learning, career management, business process reengineering, and decision-making.

The study findings led to the conclusion that customer relationship management information system highly influenced strategic decision making since this helped the factories to get feedback from the customers hence able to make proper deci-

sions to enhance customer satisfaction. It was found to have a positive relationship with strategic decision making which implied that the higher the customers were managed the higher the loyalty and higher satisfaction.

**9. RECOMMENDATIONS**

Based on the study's conclusions, the researcher made the following recommendations: tea factories in Kenya should conduct user training which ensures that there is adequate user skills and awareness of the human resource management information systems in use; human resource managers of tea factories should select and recruit adequate staff through the help of the human resource management information systems. The study recommends that the management should ensure that the integration and specific module of information system (IS) is working as expected during the implementation of human resource management information systems through effective piloting and ensure that adequate risk assessment and budgetary allocations are undertaken in order to avoid cost overruns during the implementation of human resource management information systems.

The study recommends that tea factories should emphasize customer relationship by investing in a customer relationship management system. Specifically, tea factories should invest in a robust Information technology system as this can certainly help companies to create satisfied and loyal customers. This is because customer relationship management is driven by technology rather than a well articulated customer strategy. In addition, it is recommended that factories need to allocate adequate resources for CRM. In this, critical resources such as information and knowledge necessary for addressing customers problem must not be the preserve of a particular unit but organizations must re-align its internal architecture and leverage such resources across the spectrum of the organization to enable people deal with customer issues promptly.

It is further recommend that companies must develop a supportive organizational culture, market relationship management internally, intimately understand customer expectations, create and maintain detailed customer database and organize and reward employees in such a way that the objectives of CRM is achieved. The cultural change results in the transformation of the concept into organizational wide ownership, leading to widespread acceptance across the organization. In this situation it would not be seen as belonging to a particular department. The concept would therefore draw out support from all segments within the organization to enable effective relationship be achieved between the customers and the organization.

**10. AREAS FOR FURTHER STUDY**

A replica of this study can be carried out with a further scope to include other firms such as manufacturing firms and see whether the findings hold true. Future studies should apply different research instruments like interview guide, focus group discussions to involve respondents in discussions in order to generate detailed information which would help in bringing out better strategies for decision making in firms in Kenya.

**REFERENCES**

Asafo, A. A. B.(2010). The role of HRIS in strategic human resource management, Master Thesis,pp3. Gay, Ir. (1981). Educational Research: Competencies for Analysis and Application. Columbus. Merrill. Haag, S. and Cummings, M.(2006).Essentials of Information Systems, McGraw-Hill, New York. Jabber, S.(2011). The impact of environmental factors on the efficiency of internal organizational human resources management functions in the public institution for social security: case study, unpublished Master thesis, University of Jordan, Amman, Jordan, 2011. Jawadekar. J. V. (2008). Management information systems: Texts and cases. New York, NY: McGraw Hill. Kumar, P. K. (2006). Information System—Decision Making. IndianMBA. Retrieved December 2, 2014 from [http://www.indianmba.com/Faculty\\_Column/FC307/fc307.html](http://www.indianmba.com/Faculty_Column/FC307/fc307.html) Laudon, K. C. and Laudon, J. P. (2006).Essentials of Management Information Systems. (4th ed.) New Jersey: Prentice Hall, (Chapter 1-3). Lucey, T. (2005). Management Information Systems. (9th ed.). London: Thomson Learning., Mugenda, O.M. &Mugenda, A.G. (2003). Research Methods: Quantitative and Qualitative Approaches. Nairobi: Acts Press Pushkala, R., Wittmann, M.C., &Rauseo, N.A. (2006). Leveraging CRM for sales: The role of organizational capabilities in successful CRM implementation, Journal of Selling & Sales Management, 26 (1), 39–53. Shaukat, M. &Zafarullah, M. (2010). Impact of Information Technology on Organizational Performance: An analysis of Quantitative Performance Indicators of Pakistan's Banking and Manufacturing Companies, International Research Journal of Finance and Economics, 39, 229-243.