

ORGANIZATIONAL CULTURE: EFFECT ON INFORMATION SYSTEMS ADAPTATION

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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This thesis has been submitted for examination with the approval of my supervisor

Sign: Date:

DEDICATION

I dedicate this work to my family who tolerated and supported me during the entire study period and without whom this would not have been possible.

ACRONYMS

OC	Organizational Culture
IS	Information Systems
BI	Business Intelligence
MIS	Management Information System
HRMIS	Human Resource Management Information System
CEO	Chief Executive Officer
ICT	Information Communication and Technology
HR	Human Resource
UON	University of Nairobi
CVF	Competing Values Framework
JAB	Joint Admissions Board
SPSS	Statistical Package for the Social Sciences

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ABSTRACT

This report is a study of how the organizational culture of the University of Nairobi could have affected full adaption of the Human Resource Management Information System. This was done by examining the organizational culture perceptions of both the human resource managers and the system developers. An introduction and background information of the University was undertaken with a brief description of the human resource management process. This led to identification of the problem and a detailed literature review on opinions of other researchers on the extent to which culture may have contributed to poor adaptation of systems. The availability of information systems' implementation frameworks, and specifically the competing values framework and the dialectical hermeneutics was also reviewed. Data was collected from two users of the system, the human resource managers and the developers using semi-structured questionnaires. The findings were well documented and presented in the form of tables, charts and bar graphs. The results were that there was a contradiction between the human resource managers and the system developers in the belief of the importance of involving users in the system analysis and developing and also in questioning them on their values and methods of working. Although both believed that systems are developed in order to improve and enhance processes, the method and mode of analysis and development was viewed differently.

Two frameworks for implementation of information systems were researched on and discussed comparatively, competing values framework and dialectical hermeneutics. Their application methods and usefulness in organizational cultures were also discussed. The discussion of the findings tried to show how the disparity of the views about values and methods actually affected adaptation of the human resource management information system and the frustration of management in trying to understand the failure of the system. A comparison of the two frameworks and extent to which they have integrated an organizational culture in the system development life cycle was also done.

This led to a conclusion that the human resource management information system could have been adapted well if the users' values and methods of working were ingrained in the system. The recommendation therefore was use of dialectical hermeneutics in implementation of University's information systems since its application involves interaction between users and developers during the system development life cycle.

CHAPTER ONE

1.0 INTRODUCTION

This is a report on the findings of the extent to which Organizational Culture (OC) affected adaptation of the Human Resource Management Information Systems (HRMIS) at the University of Nairobi. The report attempts to make an argument that it is the organizational culture of the University that impedes the adaptation and effect of HRMIS in the HR processes. The research aids in further understanding of how the system analysis, development and implementation process was undertaken and if the University organizational culture was taken into consideration at any stage of the process.

Information systems (IS) are developed for organizations with the intended objective of enhancing business processes and improving timeliness, accuracy and speed of information delivery. Business processes are expected to be efficient from the beginning to the end. Information systems also introduce to the organization Business Intelligence (BI) tools that operational and tactical managers as well as Chief Executive Officers (CEOs) can use to analyze data and generate reports that aid them in decision making. Availability of information in real time is very crucial to the organization's strategic ploys and market placement. Indeed some of the top organizations (for example, Safaricom) have invested heavily in technology and innovative products like M-pesa and they use this to maintain their position in the mobile phone industry. This is not unique to private organizations. Learning institutions are also adopting technology for their day to day processes, ranging from student enrolment, booking of accommodation to recruitment and management of staff. Chief Executive Officers are depending on the available Management Information Systems (MIS) for their reports before making strategic decisions or implementing any change.

The need for development of information systems for the different business processes or departments is identified by the managers and supported by the Chief Executive Officers. Information Communication and Technology (ICT) teams are then formed in order to develop the said system and implement it. Users of the developed systems are mainly the data collection staff, the systems maintenance staff and the departmental staff at their different levels. These users already had values and methods of working before the system was developed. They were comfortable and skilled in working and were probably achieving the same results that the system was intended for. They expected the system to mirror the said values and methods almost entirely. These values and methods of working are what make up the organization culture (OC).

An organization's culture can be described as the general norms, beliefs, and values that the members of staff within it have in common and is explained as "what is done, how it is done, and

who is doing it”, Keup *et al*(2001). Culture is particularly important when introducing information systems in an organization as it affects the process of managing change, implementation and adoption. Organizational culture is therefore an essential factor to consider when institutional transformation is expected to be as a result of proper implementation of Information Systems. On the other hand, Wang &Yeoh (2009) define information system (IS) effectiveness as ‘the extent to which information systems help organizations attain their goals’.

The University of Nairobi is an institution of higher learning with a staffing level of over 5,000. Since its inception the University handled staff matters in the traditional way. New members of staff were not inducted on defined human resource processes, but rather on how ‘we do things here’. Existing values and norms were therefore deeply ingrained and this grew to become part of the culture of the University. Members of Staff in the University are in two categories, teaching and non-teaching. The University has put structures in place for recruitment and management of the various cadres of staff in the two categories. Different reports on human resource are therefore required frequently by the various management levels for internal management decision making. Human resource reports are also often requested by other external stakeholder such as Government ministries/agencies, development partners and sponsors for decision making.

1.1 BACKGROUND

Management of information for staff matters was manual when each member of staff had personal files that were stored in metal filing cabinets.

It was therefore time consuming having to refer to all the physical files in order to collect data and prepare reports that were needed by management for decision making. Due to the repetition of information requests, assigned staff would only update the printed copies of the last known report and mostly depended on memory and institutional knowledge in order correct any anomalies. As a result the reports generated were rarely accurate and depended largely on individuals whose main strength was more of institutional memory on staff matters.

The University therefore realized there was a need to have an information system for human resource processes and from 1999 to 2000 a system was developed and data on the current staff collected. All the necessary support systems including software, hardware, internet connectivity and training of data entry clerks and also the managers was done. The Human Resource Management Information System (HRMIS) was finally a working system whose purpose was to solve the problem of accessing personnel records quickly, generation of reports that were real time and efficient. However, this has not been the case, and the University therefore, even after incurring costs, is running a system that is partially effective. This is not unique to the University of Nairobi as was observed by Keup *et al* (2001) ‘culture proves to be a critical

component in understanding the process of planned change and transformation in colleges and universities today’.

1.2 ORGANIZATIONAL CULTURE TYPES

“The organizational setting within which an information system is implemented forms an integral part of that system” Indeje and Zheng, (2010). Therefore, it is important to comprehend and identify an organizational culture type and further, how this would enhance or obstruct the analysis, development and implementation stages of an information system. Numerous literatures are available on organizational culture types and cannot be exhausted. However, for purposes of this project, four (4) cultural types were identified since it is widely accepted that most organizations do fall under their description. These descriptions of culture types below are borrowed from Tharpe (2009).

1.2.1 Collaborate (Clan)

Tharp (2009) described this as ‘an open and friendly place to work where people share a lot of themselves’. The environment created with the culture type is that of a family. Members of staff are loyal to the employer while the leaders play the role of advisors. Processes are familiar to all and have been the same over the years. Change is rare.

1.2.2 Create (Adhocracy)

This culture type promotes creativity and has a business-like approach to work. Members of staff are encouraged to be inventive even where risks are obvious. This type relies on business process transformations and challenges.

1.2.3 Control (Hierarchy)

Here, coordination of processes is very important. Functions are carried out within organized structures and use of policies is depended upon to give guidance. Procedures that provide high performance results and are stable and efficient are the main objectives of this culture type

1.2.4 Compete (Market)

This is almost self-explanatory. Members of staff compete and seek to meet organizational objectives in a highly competitive manner. The organization depends and enjoys high reputation and success in their market environment putting emphasis on competitive costs and being the corporate leaders.

The Management Study Guide website has slightly different categorization of culture types and one which is of interest for this study being the 'Academic Culture' type. This type of culture focuses mainly on hiring employees with high academic qualifications and trains them consistently in order to widen their working skills. Members of staff in this culture have a high retention rate and universities are listed as some of the organizations with this culture types. This high retention has a flip side in that the values, beliefs and methods of working among employees are very much ingrained in the work processes making introduction of new concepts and ways of working rather difficult. It is against this back drop that information systems are introduced. Bearing in mind that systems change processes from the existing to new processes and eventual organizational cultural shift, Indeje and Zheng (2010), it is obvious that the culture will be a challenge during analysis, development and implementation of new information systems.

Therefore the importance of identifying cultural types as part of information systems development and implementation is a determining factor in the extent to which a system is adapted in an organization. Indeed the information systems implementation frameworks discussed in this report puts emphasis on this as is explained in the findings and discussion chapters.

1.3 PROBLEM STATEMENT

Human resource processes at the University of Nairobi were traditional until 1999 when databases and their applications were developed. The Human Resource Management Information System (HRMIS) has been fully developed and usable since the year 2000. The system's objective is to collect all data on staff movement between entry and exit. This data is then used to generate various reports including pay slips, staffing levels, and numerous others for management decision making. In order to generate reports that are timely, accurate, relevant and dependable, information on staff has to be updated and validated at source.

In the case of the University of Nairobi, the sources are six (6) colleges that are situated in various locations, some of them almost 20kms away from the main administration campus. Communication on staff matters was through formal letters that are generated by the Human Resource Managers of the University. The local area network makes the human resource management information system available on-line in all the colleges at all times and the various data entry points were provided with computers, internet connectivity and the system installed. The human resource management information system has two interfaces that allowed the different users to view it for their unique purposes. There is a data collection interface that allowed for direct updates, edits and views using Oracle forms and tables. This interface was used mainly by the data entry personnel for day to day updates and data entry. The data clerks

were trained on data the available data capture and update tools. The human resource management information system also had a web based interface. This is meant for Human resource (HR) managers who should have used it to view all the available reports and information that was essential for their decision making needs. They too were trained. However, even with the training and the available resources, i.e. internet connectivity, computers and staff from the Information Communication Technology (ICT) Centre for reference and assistance, the data clerks still preferred to file the printed copies rather than updating the record online. As a result, the human resource management information system was rarely updated meaning that the managers would prefer to use the physical file to source for information on staff with very minimal reference to the HRMIS.

The continued reliance of physical files resulted in cases of misrepresentation of reports and duplication of work because staff in the main administration department had to update staff data on the human resource management information system on behalf of the Colleges. In contrast, full implementation and adaptation of the system should have had the effect of real-time updates and generation of accurate, timely and dependable reports for management decision making.

The human resource management information system in the University of Nairobi was not a catalyst in the transformation of the human resource management processes. The information system was perceived as just another tool that does not have to be used in the day to day processes. Preference for the traditional method of handling files to the click of the mouse was still very high.

1.4 AIMS AND OBJECTIVES

1.4.1 AIMS

The aim of the project was to show the extent to which the University's culture affected the effect of implementation of the Human Resource Management Information System (HRMIS) and propose use of an identified framework in implementation of information systems.

1.4.2 OBJECTIVES

The objectives of this project are to:-

- Undertake a comprehensive literature search and review to show the current views on how culture affects implementation and adaptation of information systems.
- Discuss two information systems implementation frameworks, competing values framework and dialectical hermeneutics, and their application methods with the view of identifying one that could be used successfully in implementation of information systems at the University
- Collect data on the extent to which human resource managers are involved in system analysis, development and implementation.

- Study the perceptions and attitudes of identified staff towards the usage of the human resource management information system with the aim of establishing the effect of cultural perceptions and attitudes.

CHAPTER TWO

2.0 LITERATURE REVIEW

Organizational culture (OC) and information systems adoption is a phenomenon that has been widely researched with several case studies that have given rise to existing examples. A noted description of culture is that “It is a surprisingly powerful influence on employee perception, attitude and behavior” Lacey (2009). Related research on organizational culture and the change brought about by successful IS adaptation agree that there is a strong link between the two and avoiding to address the organizational culture leads to failure in Information Systems (IS) adoption. The importance of organizational culture is especially clear in the operationalization of institutional transformation, Keup *et al* (2001). Keup further addresses the readiness, responsiveness and resistance to change within an organization and how these factors affect institutional transformation. Manfred (2011) further supports the importance of organizational culture in institutional transformation by stating the importance of performing an organizational culture audit. The data collected helps the executives to understand their organizational culture type and therefore improve the change process through strategic planning.

There is proof that organizational culture is a critical success factor in the development and implementation of information systems, Indeje & Zheng (2010). The institutional transformation brought about by information systems is also expected in learning institutions. This expectation for change places opportunities and challenges for those involved in implementation and application Tearle (2003). In his research Tearle (2003) concluded that it is not clear to recognize the role ICT has played in changing education systems. He further concludes that a broader debate organizational should be taken into consideration during implementation of ICT in teaching and learning institutions.

It has even been argued that the quality of a system is improved when users ‘provide expertise about the organization the system is to support’ Siau (2007). The need to study organizational culture in order to identify what are the ingrained values is very crucial to managing change and implementing IS. An organization is made up of a number of competing values and these are the values that make up the culture of the organization, Sanderson (2006).

Information systems on the other hand, transform an organization’s tradition and the way operations are carried out. Due to the expected organizational transformation, system developers should always involve the users during development and implementation since adoption of information systems involves interactions between human, organizational and technical factors, which cannot be separated, Indeje & Zheng (2010). It is therefore clear that organizational culture is plays a big role in organizational change since it ‘alters the culture by changing select underlying assumptions and institutional behaviours, and processes’, Keup *et al* (2001).

Some scholars have studied this aspect while others have researched beyond and studied frameworks that can be used to have a fit between organization culture and implementation of information systems.

A case study on the implementation of a university joint admission system by Getao and Wausi (2009) observed that “additional conflict between cultural values and ICT systems emerge in the development, use and implementation of information systems”. Further Wang and Yeoh (2009) in their study of culture and information systems effectiveness have identified frameworks, specifically Competing Values Framework (CVF) as a tool that can assist managers to create a proper organization culture that is compatible with the use of specific information systems.

A more recent study has shown that the University’s culture was considered during the development of the Joint Admission Board (JAB), process with the ingrained values being taken into consideration during the system development cycle, Wausi (2009). The joint admissions boards information system was as a result, adopted and adapted by the government and all public university as the system to use during students’ admissions.

2.1 Frameworks for Information Systems Adaptation

Scholars have studied ICT adoption with a view to understanding why different OC cultures adopt ICT differently. An example is Manuelli *et al* (2009) who researched the Pacifica people in New Zealand, their ICT adoption approaches for their businesses and the different stages of adoption that finally lead to success in the use of ICT. Further studies on theoretical frameworks and other models are available that investigate the best way to get organizations adopt their information systems.

Theoretical frameworks are models that can be used by organizations as guides for implementation and adaptation of information systems. The implementation of systems within organization cultures has long been recognized as a problem and research has been done on how organization cultures and information systems can fit one another in order to achieve the expected effectiveness and transformation. Several frameworks exist that organizations can use to fit their organizational culture to particular information systems. One such theory is the Competing Values Framework which studies the various organization cultures and types of information systems and identified a ‘fit’ that should best achieve institutional transformation. Another theory is the Dialectical Hermeneutics which is based on heavy user and developer interaction where information collected is interpreted and the important organizations factors especially the social and political issues addressed, since they are core to the success of information systems integration, Myers (2008).

2.1.1 Competing Values Framework

The Competing Values Framework (CVF) has been studied for several years and has been used by organizations worldwide, Cameron *et al.* (2006). Cameron *et al* notes further that use of competing values frameworks is highly effective in an organization's performance. It identifies the underlying dimensions of an organization including relationships between the leadership, culture, decisions making channels and so on and how these dimensions can work together towards achieving organizational goals. Available research shows that competing values framework can be used successfully in learning institutions in identifying the organization culture type and using this to fit with information systems Sanderson, (2006). Competing values framework uses the four main organization culture types to map organizations and help both the system user and developers identify the most suitable information system type.

In their research, Wang and Yeoh (2009) have theorized that developers should identify the organizational culture and choose the information system that will best fit this culture. In conclusion they propose that system developers should consult with the Managers in identifying the organizational culture. This would assist them in deciding on the most effective information system that will achieve greater organizational effectiveness.

2.1.2 Dialectical Hermeneutics

Dialectical hermeneutics is yet another framework for information system implementation. According to Myers (2008), the social and political issues of an organization play a key role in the full adaptation of information systems. Since dialectical hermeneutics involves user interaction during the system development life cycle, information on these issues can be collected and the developer should as much as possible, capture these in the system.

These two frameworks are not exhaustive of the research done on information systems implementation frameworks, however, during the literature search; they have best described the issue of cultures and implementation of information systems. Further literature search and review on these two frameworks was done in order to identify which framework would best fit the University of Nairobi.

This project is a case study of the Human Resource Management Information System (HRMIS) of the University of Nairobi to investigate the extent to which organizational culture has affected its full adaptation and growth despite the University investing in the required resources such as Internet connectivity, computers, networks and training of the main users including data clerks , human resource managers and system developers

CHAPTER THREE

3.0 METHODOLOGY

3.1 DATA COLLECTION

Questionnaires were chosen as one method of data collection as opposed to interviews. Apart from ease of analysis the other reason for choosing this method was the many choices in mode of delivery, which in this case was in person. The questions were semi-structured in a way that collected comparative information from the two target groups.

Data; supported by observation from the HRMIS on how often colleges accessed the system for any of the available human resource processes and needs was also requested from the Director, ICT center.

3.1.1 Target Groups

The research was carried out by administering questionnaires to two target groups who are the main users of the HRMIS, the human resource managers and the system developers. The two were chosen for the obvious reason that system developers intended the system to be a human resource management process tool.

The human resource managers at the University of Nairobi are the users of the system, since they make decisions on a daily basis based on current human resource levels. The human resource management information system was therefore expected to be used as tool in decision making and other human resource related transactions. The managers were therefore key sources of data that was analyzed and used to quantify reasons why they did not rely on the system and therefore weakened its impact and effectiveness on the University's human resource processes. The system developers were also questioned because they were responsible for the system analysis, development, training and implementation of the system.

The purpose of having the two target groups was to establish their perception with regard to:

- System installation, availability, effectiveness, analysis, implementation and adoption and
- Using the system within the University organizational culture

3.1.2 Administration of Questionnaires

Semi-structured questionnaires were designed and administered to the two target groups (appendix 1 and 2). A total of forty (40) questionnaires were administered to both groups and the participants were expected to answer all the questions.

3.1.3 Questionnaire for the Human Resource Managers

The designed questionnaire was semi-structured and delivered to at least twenty (20) human resource managers in person. The human resource managers were selected from different user departments and two colleges of the University who all rely on the system for different human resource management functions. Their function/information need areas were clearly picked in the questionnaire.

Design

The questionnaire had three main parts namely, system installation and availability, system effectiveness and, organizational culture. Grouping the questions in specific parts allowed the participants to be focused and follow the thought process of the research. Analysis would also be easier and targeted.

On the system installation and availability, the research intended to collect data on the process of installation of the system in the human resource managers' computers and its availability. The system effectiveness section gathers information on just how effective it is to the human resource management process while the organizational culture section sought to establish how 'comfortable' the users were while working within their norms, values and methods.

3.1.4 Questionnaire for the HRMIS Developers

The questionnaire for the system developers was also semi-structured. They were administered to the system developers from the ICT department in person. The identified developers also cut across the various stages of system analysis, development, implementation, user support and maintenance.

Design

Their questions were also grouped in three parts, system analysis and development, implementation and adoption and, organization culture.

On the system analysis and development, the purpose was to find out the extent to which the developers interacted with the users. The implementation and adoption section established management support for the system and if the users actually adopted the system. The organizational culture section would find out if the developers considered the users' values and methods of working during system development and implementation. A specific question enquired on the use of theoretical frameworks for the University in system implementation.

The organization culture section of both questionnaires had some parts which were similar. This allowed for comparison of the responses on the same perceptions of organizational culture, from the two research groups.

3.1.5 Data from the System's Database

A letter was written to the Director, ICT center, who is in charge of all management information systems of the University of Nairobi, requesting him to provide information on how often colleges are updating the HRMIS and accessing it for other information needs (Appendix 3). The response was used together with observation by the researcher who has worked for several years in the HRMIS unit, at the main administration.

3.2 DATA ANALYSIS

Data collected with the questionnaires was analyzed using SPSS statistics. SPSS is statistical analysis software that has different analytical criteria. For this report, frequencies in the questions asked are presented in table format, bar graphs and pie using percentages. SPSS has made it possible for the researcher to present and interpret the respondents' answers in a manner that was easy to understand and explain.

CHAPTER FOUR

4.0 RESULTS AND FINDINGS

The objective of this study was to understand the extent to which Organizational Culture could have affected the adaptation of the HRMIS. Towards this end, data was collected from the users who are the human resource managers and also the developers of the system using two different questionnaires. Perceptions from both respondents on importance of organizational culture in system analysis, development and implementation process were also sought. The findings are described here below.

4.1 Findings on the extent to which human resource managers are involved in system analysis, development and implementation

a) Findings from human resource managers

Table 1: System installation for HR Managers

	Frequency	Percent
Yes	14	93.3
No	1	6.7
Total	15	100.0

Table 1 above show that 93% of the HR managers questioned had the system installed in their machine. Data from the developers (appendix 1) also supports this finding in that all of the respondents questioned also agreed that they installed the system in the managers' computers.

Table 2:HRMIS consultation with HR managers during development

	Frequency	Percent
Yes	6	40.0
No	9	60.0
Total	15	100.0

Table 2 above is the finding from the HR managers on if they were consulted during system development. 60% of the managers were not consulted by the developers.

Table 3: Implementation of system implementation suggestions by HRMIS developers

	Frequency	Percent
Yes	12	70.6
No	5	29.4
Total	17	100.0

However, 70.6% of the responded did have their system implementation suggestions implemented by the developers as indicated in Table 3 above.

Table 4a: HR Managers

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	14	93.3	93.3	93.3
No	1	6.7	6.7	100.0
Total	15	100.0	100.0	

Table 4b: HRMIS developers

	Frequency	Percent
Valid Yes%	10	83.3
No%	2	16.7
Total	12	100.0

From Table 4a and 4b both the HR managers and the developers concur that training on the system was done with returns of 93% and 83% respectively. It is important to note however, that 16.7% of the developers did not train their users.

b) Findings from the HRMIS developers

Table 4: User Identification by HRMIS Developers

	Frequency	Percent
Yes	9	75.0
No	3	25.0
Total	12	100.0

From Table 5 above, although a majority of the developers identified their users at 75% , there was a finding that 25% of the developers did not identify their users before developing the system.

Table 5: User involvement in System Analysis

	Frequency	Percent
Valid Yes	10	83.3
No	2	16.7
Total	12	100.0

Although 83% of the developers involved the users during system analysis inTable 5above, the same level of involvement was not seen with user involvement in system development with 41.7% being involved to a large extent and the majority, 58% being involved to a small extent, Table 6 below.

Table 6: User involvement in System Development

		Frequency	Percent
Valid	Large extent	5	41.7
	Small extent	7	58.3
	Total	12	100.0

4.2 Perceptions and attitudes of staff towards HRMIS

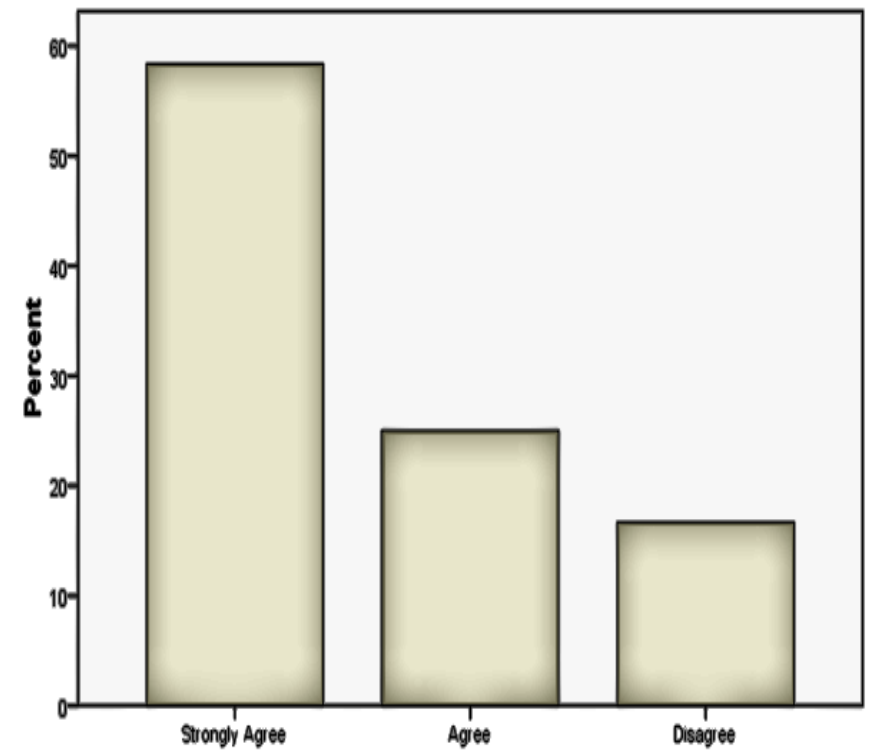
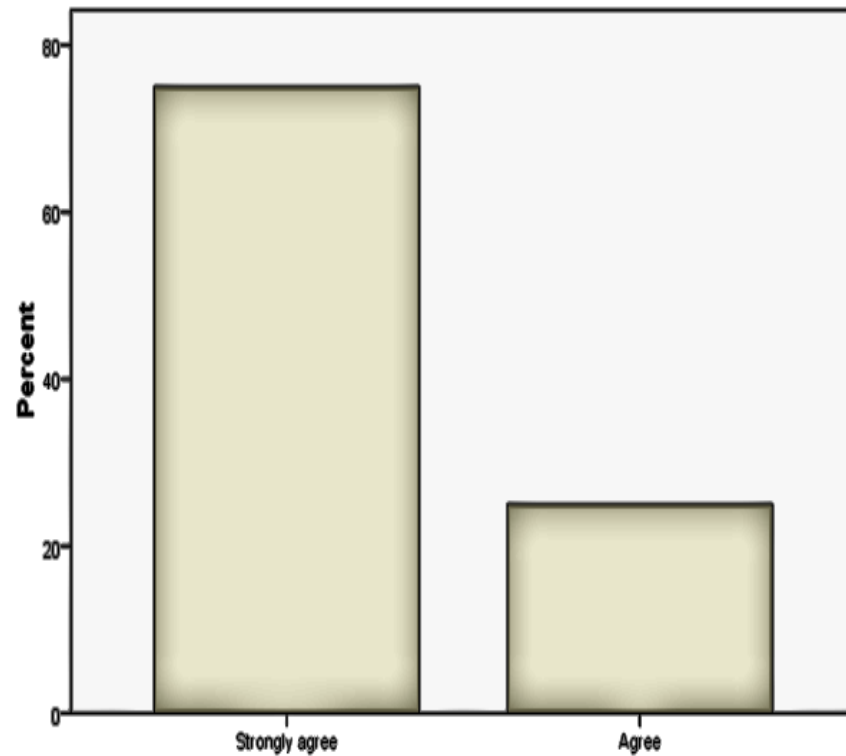


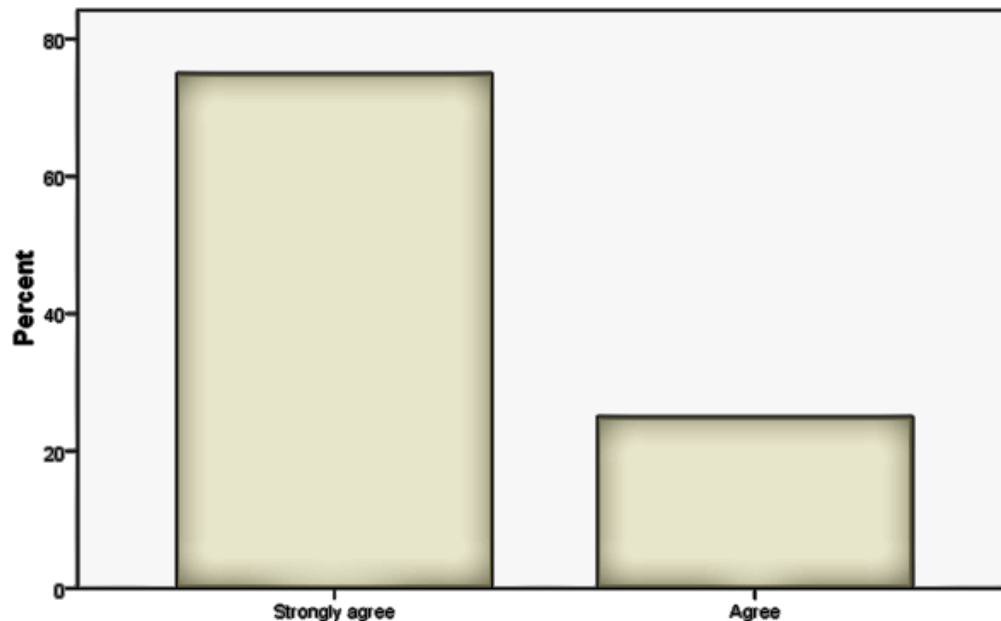
Figure 1: HR MANAGERS

HRMIS DEVELOPERS

Comparison of the consideration of values and methods during IS implementation between the HR managers and HRMIS developers

Figure 1 above is a comparison of the extent to which human resource (HR) managers and the human resource management information (HRMIS) systems developers considered values and methods as an important aspect to take into account during the system's implementation. 75% of the HR managers feel that values and methods should be considered while only 58% of the developers support this. Notably 19% of the developers did not take the users' values and methods of working into consideration during implementation.

Figure 2: Information Systems do improve business processes - HR managers



Data was collected from human resource managers who accessed the human resource management information system for various information needs including viewing of information, generation of reports (53%), data coding (13%) and data updates (20%), Appendix 4. Among these users 75% were in the agreement that information systems are developed in order to improve business processes, while 23% did not share the same belief as illustrated in Figure 2 above. This is replicated, although at slightly different percentages, by the developers at 81% and 17% respectively, Figure 3 below.

Figure 3: HRMIS developers - information systems are meant to improve business processes

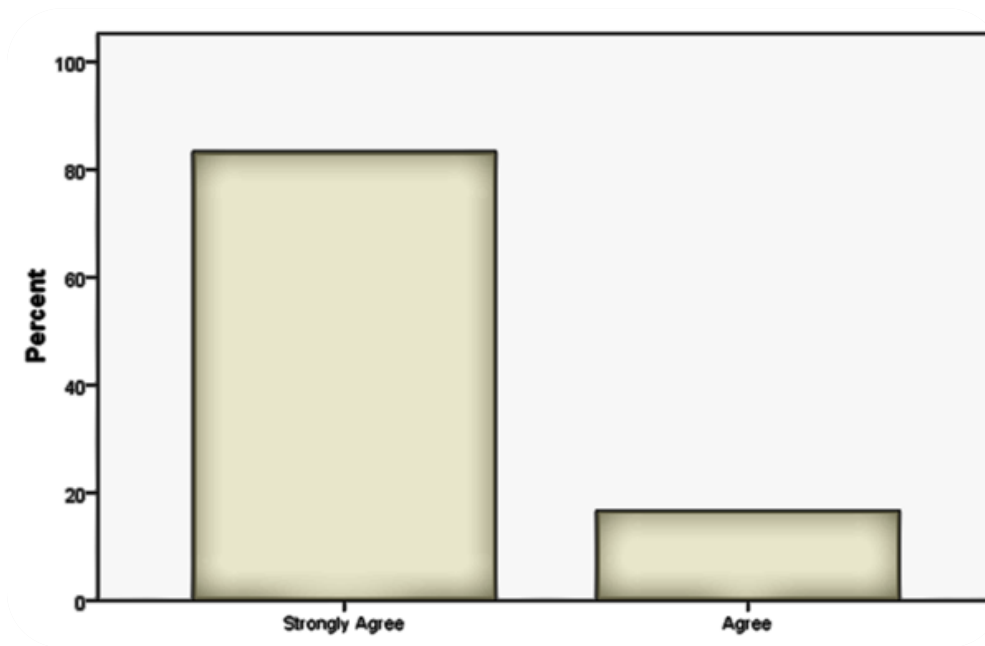
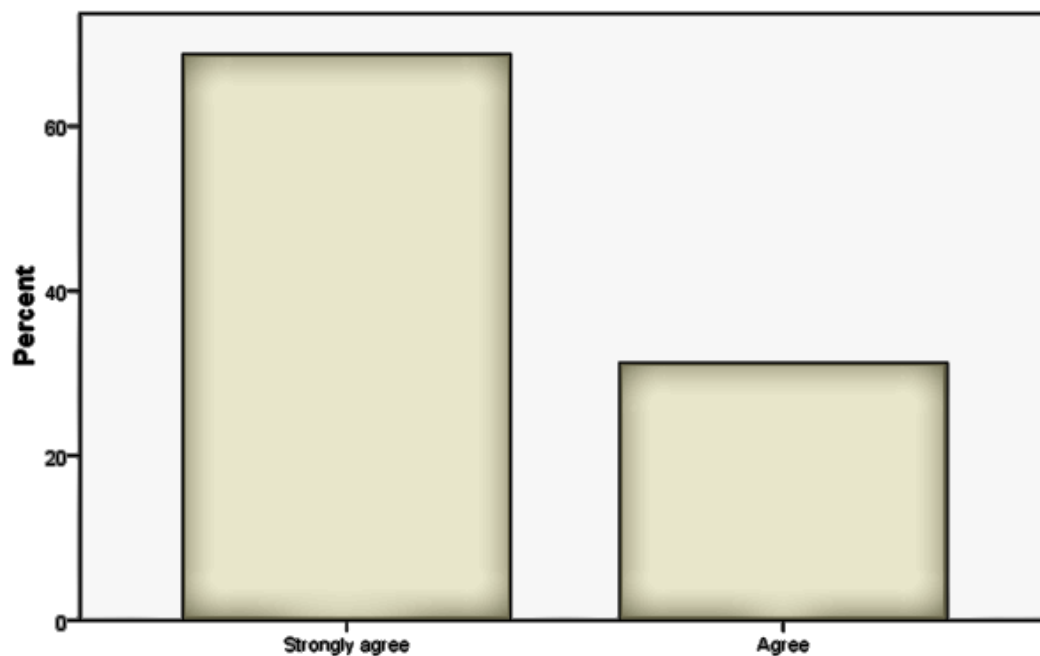


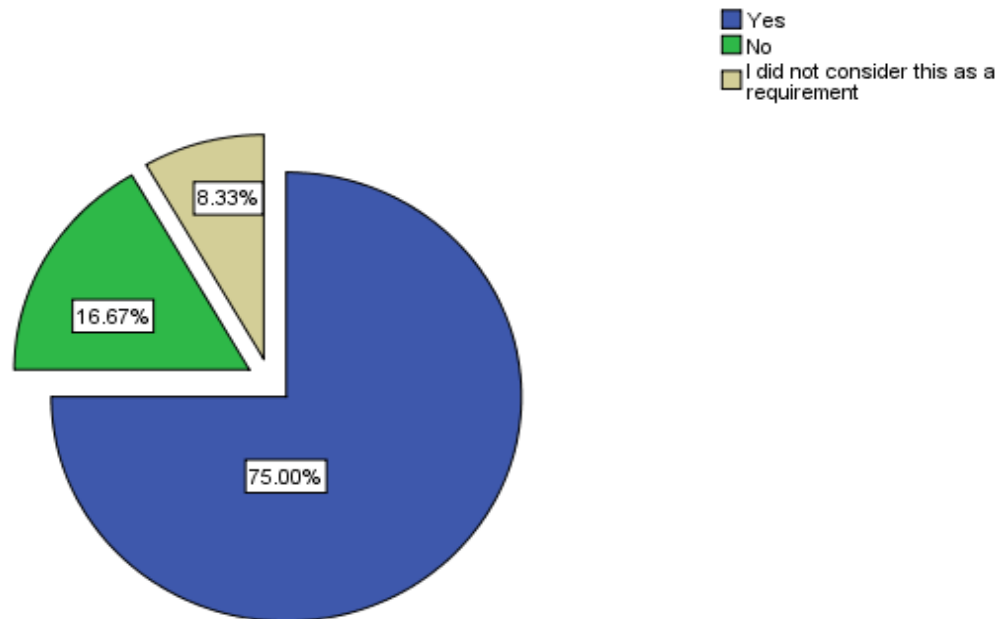
Figure 4: Percentage of HR managers who find it enjoyable to perform their duties in familiar environment



From Figure 4, above 68% of the human resource managers do enjoy performing their duties in a familiar environment (the implied environment here is the work process) while 30% do not mind their working environment. The developers' cumulative response to if they queried users on their values and methods of working was that 8.33% of them had not considered this as a

requirement during system analysis, development and implementation while 16.67% did not question them at all as presented in Figure 5 below.

Figure 5: Percentage of developers who questioned users on existing values and methods of working



4.3 Data Updates from Colleges

Even with the general agreement that the HRMIS was meant to enhance the human resource business process, coupled with the training of the human resource managers, it was observed from the central control office of the system that Colleges were not updating their data regularly. Updates were haphazard and often collected erroneously. College senior managers were also observed not to refer to the system for the various reports and would actually call on the central office for the same reports that they could also get on their own desktops. One of the reasons given for this is that they feel the system does not completely serve their human resource needs. This is proven in Table 8 below where 46.7% felt that they were not satisfied with how the system served their purpose while 26.7% felt that it did not help them at all. This conflict was observed among the system developers who split their opinion on the system acceptance and adaptation by 50-50 as presented in Table 9 below.

Table 7: Does the system completely serve human resource needs

	Frequency	Percent
Yes	4	26.7
No	4	26.7
Sometimes	7	46.7
Total	15	100.0

Table 8: System accepted and adapted for human resource decision making

	Frequency	Percent
Yes	6	50.0
No	6	50.0
Total	12	100.0

4.4 Theoretical Frameworks

4.4.1 Dialectical Hermeneutics

From the literature search on the Dialectical Hermeneutics, the observation was that dialectical hermeneutics offers systems developers a model for comprehending the social and political process of information systems implementation. It involved thorough investigations by the developer on how users perceive an information system and also what impact the system would have on the organization from a social and political point of view. Using dialectical hermeneutics addresses any existing value conflicts and in addition, the social impacts of the system to the organization.

The implementation process should be highly interactive with high user involvement where they ought to agree on their values and methods being represented in the system. Dialectical Hermeneutics has indeed been proven to work Olson and Carlisle, (2001).

Application

Dialectical hermeneutics has been applied in many areas as a framework of studying human behavior. Some of these applications were in psychology, law, biography, business and others, Olson and Carlisle, (2001). In information systems use of dialectical hermeneutics was

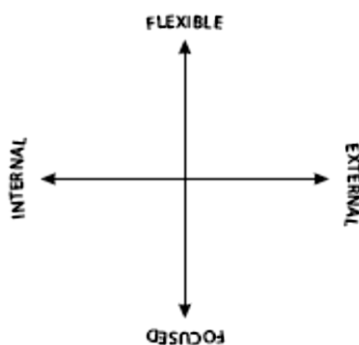
demonstrated by Gould (1994) in the design of geographic information systems. Several researchers, Myers (1995), Gould (1994), and Powell (1999) among several others have used case studies to demonstrated use of dialectical hermeneutics and discussed the success factors, Olson and Carlisle (2001).

4.4.2 Competing Values Framework

The competing values framework is used to establish and grasp organizational cultures. According to Cameron (2009) it is “it is an extremely effective model for understanding a variety of organizational issues including organizational culture, organizational design, stages of life cycle development, organizational quality, leadership roles, financial strategy, information processing” among others. A competing values framework is formulated in four dimensions from the very basic dimension to the final and more complex dimension which should place the organization within its proper quadrant.

Organizational performance is driven either by internal or external forces. The internally driven organization depends on internal process improvement and loyalty of the human resource while the external organization depends on external stakeholders and environment, Wang and Yeoh (2009). Organizations culture types are defined either as stable (focused) or flexible. Stable organizations do not change much while flexible ones do change continually since innovation is encouraged and practiced. This is illustrated in the initial process of a competing values framework as follows

Figure 7: Organizational types and the environment dependencies, adapted from Cameron (2009).

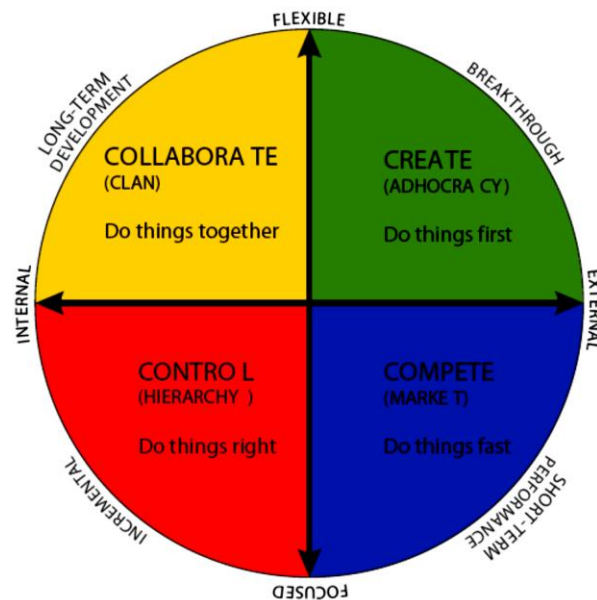


The descriptions and illustrations of the competing values framework are an excerpt from Cameron (2009).

This basic dimension that has four distinct quadrants is filled up by a process that breaks down the organizational culture type with their leadership styles and places them in the relevant

quadrant. The upper left quadrant is used to identify the internal and stable organization and the lower right used for the external and controlled type. The upper right quadrant is used to identify the external and flexible type and the lower left used for the internal and stable type. The result on completion is a competing value framework that should appear as Figure 8 below.

Figure 8: A competing values framework with the culture types and leadership styles, adapted from Cameron, (2009)



4.4.3 Application of Competing Values Framework in Information Systems

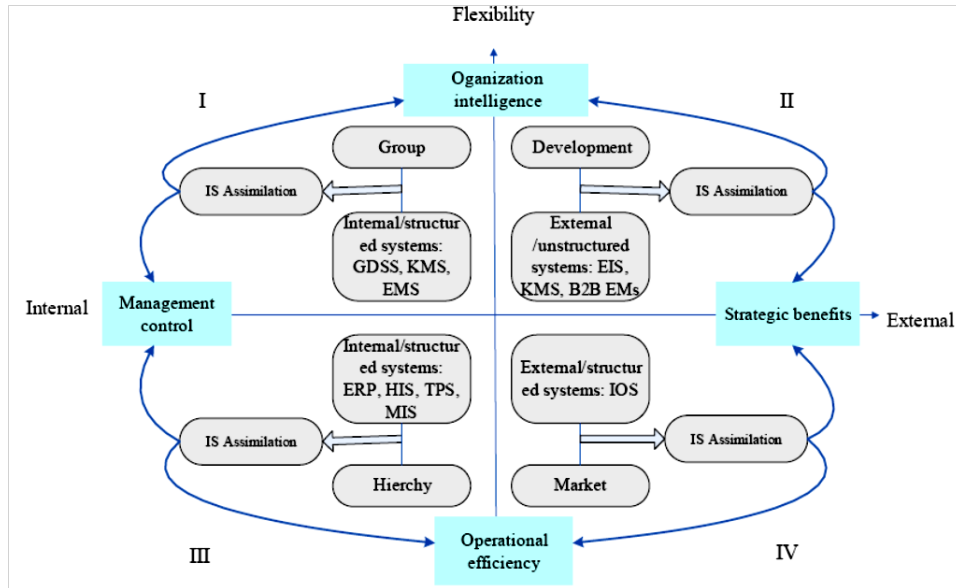
In development of information systems, the competing values framework should be used to map organizational culture types and leadership styles to specific information systems classifications. According to Wang and Yeon (2009) information systems are classified and they differ in the extent to which they are structured. Structured information systems therefore are process-oriented, for example enterprise resource planning and hospital information systems, while unstructured systems are non-routine and non-procedural, for example knowledge management systems. With this in mind it is easy to classify information systems and Wang and Yeon (2009) did this and illustrated as here below.

Table 10: Classification of information systems, adapted from Wang and Yeon, (2009)

Systems	Degree of structuredness	Degree of internal orientation
MIS (Management information systems)	High	High
TPS (transaction processing systems)	High	High
GDSS (group decision support systems)	Low	uncertain
ERP (enterprise resource planning)	High	High
EMS (electronic meeting systems)	Low	uncertain
EIS (enterprise information systems)	Low	Middle
IOS (inter-organizational systems)	High	Low-moderate
	Low	low
B2B EMs (business to business electronic marketplaces)	Low	low
KMS (knowledge management systems)	Low	moderate

The information systems types that are highly organized and have internal orientation would fit better with organizational culture types that are internal and control based. For example the management information systems and enterprise resource planning are both high in their organization and internal orientation. This fit in information systems and the organizational culture type can be mapped using a competing values framework where the result would be as illustrated in Figure 8below.

Figure 8: Fitting information systems and organizational culture using a competing values framework, adapted from Wang and Yeon, (2009)



It is important to note that Wang and Yeon, (2009) defined two culture types slightly different from Tharp, (2009). Where Tharp refers to 'clan', Wang and Yeon, (2009) define the same culture type as 'group' and 'create' versus 'development' respectively. However, 'Hierarchy' and 'market' were similar in naming.

CHAPTER 5

5.0 DISCUSSION

The research findings showed that 93% of the human resource managers had the human resource management information system (HRMIS) installed in their computers. 93% and 83% of the human resource managers and the system developers respectively agree that training of the system was undertaken. Appendix 5 shows that the system developers' response on management support in system development and installation was high at 100%. This proves that the organization did provide the human resource managers with a tool that was meant to improve the human resource management process and also solve other problems in terms of information management and communication.

However, this is not reflected in the actual use of the system. From the research findings the contradiction in this is also evident with data collected from both groups showing that the human resource managers were not satisfied that the system served their needs, and the developers were also divided in the belief that the system was effective as a human resource tool. Although both groups do agree that information systems are meant to ease business processes, the disconnect between the perceptions of the system's adaptation between the human resource managers and the developers is the bone of contention. The two groups, although working in the same organization and seemingly agreeing on the basic concepts of system use, do not share the same belief on just how well the system was adapted. This is where the understanding of the importance and role of the organizational culture in information systems adaptation is getting clear.

Research findings from both groups show this disparity, where the human resource managers feel that their values and methods of working should have been taken into consideration during system development. Majority of the human resource managers, 58%, were almost not consulted during system development, where they would have had the chance to voice their values and methods of working. Some of the developers, 8.3% did not even consider it as a requirement to question the users on their values and methods. In view of the fact that the system was developed to be used by the human resource managers, a percentage of the developers (25%) did not identify the users before commencing with the system development. These seemingly minor yet very important factors of the system developer's lack of consideration of the organizational culture and low involvement of the users in system analysis and development are factors that could have led to the failure of full adaptation of the human management information system. There is a disharmony between users and developers where the issue of identification of values and methods is concerned. This is clearly illustration in Figure 1 where a majority of the human resource managers (75%) felt that their values and methods of working should have been taken into consideration during development with only 58% of the developers agreeing. This is despite

numerous studies on system development life cycle indicating the importance of system developers putting a lot of emphasis on user identification and involvement. The frequent interaction between the developers and users would expose some of the values and methods that may not be captured through direct questioning of the users. It is not easy to establish awareness of these contradictions, that is the importance of establishing the values and methods of working, between the users and the developers, or to bring into focus to the two groups how this has led to the poor adaptation of the system. The management is also not aware of this, and hence their frustration in the dependability of the system for decision making. They have made the necessary provisions and yet the system has not achieved its intended purpose. This has far reaching consequences even in the development of the University. As much as the intention for the future is to have a paperless working environment, this cannot be achieved when systems are not dependable. This phenomenon however, is not unique to the University, including the disharmony between users and developers. Teaching institutions are also prone to resist change at a higher percentage due to the nature of their work – they are mainly service providers and depend on their internal processes for performance of their duties.

This is where the use of systems implementation and adaptation frameworks play an important role. Dialectical hermeneutics can be used during systems analysis and development to collect information on users' unique view of information systems. Its adaptation of part of the system development methodology would greatly aid in recognizing the underlying political and social issues that exist in an organization. This in turn would aid in developing a system that, as much as possible, captures these issues and probably enhances full adaptation of the system. The competing values framework is yet another model that can be used to map organizational culture types to information systems classifications and therefore identify a proper 'fit'.

All the system developers questioned agreed that they can use a framework during systems implementation if one was identified for use. Other human factors in systems adaptation however, cannot be ignored. There is no definite method of identifying exactly why some users would use a system while others do not, within the same organization even when they do approve and request for their processes to be computerized. Use of frameworks and models cannot predict precisely just how well the human resource will choose to adapt an information system. Indeed, this was evident during data collection where the respondents, as much as they were aware of the importance of researching on the use of the human resource management information system, and probably also helping them identify some issues they were not aware of, did not give accurate or honest answers. By merely observing the data collection hits, it was evident that colleges of the University were not updating the system frequently and on the rare occasions that they did, it was only in order to serve an immediate purpose after which the system would once again be forgotten.

It is also worth noting that information systems in the University are a fairly new concept started in 1999. The University's culture, which can be loosely classified as 'academic' or even 'hierarchical' means that there has been a high degree of employee retention. The introduction of the human resource management information system was against the backdrop of members of staff having deeply ingrained values and methods of working. Some members of staff had worked for as many as 30 years and above. It was therefore a herculean task to bring change to the human resource management process.

CHAPTER SIX

6.0 CONCLUSION

The University's culture has been a challenge in the adaptation of the human resource management information system. The users felt that their values and methods were not adequately captured in the system. The developers on the other hand did not give the users' values and methods of work the serious consideration that is required in systems development. This is probably not due to lack of trying, but rather to user apathy and poor understanding of why they are required to be involved in a process that was perceived to be an entirely ICT function. The University also tends to follow an academic culture where as described above a lot of emphasis is placed on academic qualifications and perfection of skills. The culture of the University is therefore completely ingrained among employees making introduction of new ways of working a huge challenge. Apart from employee resistance there is another culture between the structures and or department where one department finds it intrusive to be questioned on their processes by yet another department. The Human Resource Management Information System has already been developed and implemented across the University colleges. It may seem late to use any one of the frameworks outlined above. However, there would be no harm in collecting data on users' perceptions of the University's culture. This may lead to getting some answers that would realize the existing bottlenecks.

6.2 RECOMMENDATIONS

The University is already hugely dependent on ICT for some partial processes an example being the generation of pay slips which depend, on the one part, on the human resource management information system and on the other the Financial Management Information System (FMIS). Workshops and seminars can be used to brainstorm on the underlying issues that stop the full adaptation of the system. The data collected can then be used to make some changes and would also form a record for use in future systems. The ICT department can also look into using the available intranet to educate users on the available functions of the human resource management information system.

6.2.1 USE OF SYSTEM IMPLEMENTATION FRAMEWORKS

Upon detailed research of the two information systems implementation frameworks, it emerged that both are effective in enhancing adaptation of information systems. The dialectical hermeneutics needs involvement of the users' right from the beginning, when the inter-organizational social and political issues are identified and discussed. Each level of the system development cycle should then be taken into consideration these issues and any problem encountered referred back to the users. The result would be a system that has involved the users fully meaning, therefore, that adaptation would actually be easy and meet minimal resistance.

The Competing Values Framework matches an information system to the organization culture type. It also matches leadership styles with the organizational culture. It does not refer to the users very much and relies on the assumption that the culture has been identified properly and therefore should 'fit' with particular information system.

In view of the fact that the University's culture is easy to identify and classify, and from the Table 10 above use of management information systems matches with the university's culture, it is recommended that dialectical hermeneutics should be adopted as a framework for implementation of information systems for the University. This is further supported by the evidences in Chapter 4, results and findings, which show that interaction between developers and users was not to the expected degree. The relationship between the ICT department and any other user department should not be viewed as an intrusion but as a means to developing systems that satisfy all stakeholders. This can be achieved by adopting dialectical hermeneutics for systems analysis, development and implementation. All the system developers' respondents agreed that they would use an implementation framework if one was identified Appendix 5. This would therefore be a big step towards full systems adaptation in the University

6.3 FUTURE RESEARCH

The project did not exhaustively cover the issues of organizational culture and information systems. The university is very big and each college could have different cultures. One framework method may not fit all the colleges. Future research can be done to investigate the different cultures within the university colleges and probably find a solution for each college on the best framework for adaptation of information systems.

APPENDIX A: QUESTIONNAIRE FOR HUMAN RESOURCE MANAGERS

The Human Resource Management Information System (HRMIS) was developed to manage Human Resource (HR) issues and also generate reports for management decision making. This questionnaire is meant to address how Organization Culture (OC) may have affected the effectiveness and reliability as a decision making tool in HR issues. HRMIS will be referred to as 'the system' throughout this questionnaire.

SYSTEM INSTALLATION AND AVAILABILITY

Q1. Is the system installed in your computer?

- a) Yes
- b) No

Q2. Was the installation of the system done following the required process of system installation?

- a) Yes
- b) No
- c) Do not know

Q3. Were you trained on how to use the software?

- a) Yes
- b) No

Q4. Were any suggestions that you made on improvement of the system implemented?

- a) Yes
- b) No.

Q5. Do you experience problems with speed when you using the system?

- a) Yes
- b) No

Q6. Is there a Help menu that assists you when you get problems?

- a) Yes
- b) No

Q7. Is the Local Area Network always available on your computer?

- a) Yes
- b) No.
- c) Sometimes

Q8. Do you find the system easy to use?

- a) Yes
- b) No

Q9. Do you face any problems in using the system?

- a) Yes
- b) Sometimes
- c) No

If yes kindly specify

Q10. How satisfied are you with the features of the software?

- a) Very satisfied
- b) Satisfied
- c) Somewhat satisfied
- d) Dissatisfied

SYSTEM EFFECTIVENESS

Q11. What HR needs does the system serve for you? Give a brief description.

Q12. Does the system completely serve your HR needs?

- a) Yes
- b) No
- c) Sometimes

Q13. What in your opinion is the best feature of the software?

- a) Easy accessibility
- b) User instructions
- c) Quick generation of reports

Q14. What is your experience in using the system?

- a) Excellent
- b) Very good
- c) Good
- d) Bad
- e) Terrible

Q15. Do you feel the system has had a positive impact on performance of your duties?

- a) Yes
- b) No

Q16. Which of the following user access areas are you currently allowed?

- a) Viewing of information
- b) Generation of reports
- c) Data coding
- d) Add, edit and delete records

Q17. Were you consulted at any level during system development?

- a) Yes
- b) No

ORGANIZATION CULTURE

Q18. Organization culture plays a key role in information systems implementation and adoption.

- a) Strongly agree
- b) Agree
- c) Somewhat Agree
- d) Disagree
- e) Strongly disagree

Q19. To what extent do you think the ICT team should have factored in the organisation's culture in implementation of the systems?

- a) Large extent
- b) Small Extent
- c) Not at all

Q2. Does the system 'fit' with the organization's culture?

- a) Yes
- b) No

Q21. Do you think the system would have been more effective if the OC was considered during implementation?

- a) Yes
- b) No

Q22. Will re-designing the system with consideration of the OC make its impact on HR processes more effective?

- a) Yes
- b) No
- c) Maybe

Q23. Does the system support decision making?

- a) Yes
- b) No

Q24. What added features do you think would improve the system in supporting your decision making needs?

APPENDIX B: QUESTIONNAIRE FOR THE HRMIS DEVELOPERS

The Human Resource Management Information System (HRMIS) was developed to manage Human Resource (HR) issues and also generate reports for management decision making. This questionnaire will address how Organization Culture (OC) may have affected the effectiveness and reliability as a decision making tool in HR issues. HRMIS will be referred to as ‘the system’ throughout this questionnaire.

SYSTEM ANALYSIS AND DEVELOPMENT

Q1. During system analysis did you identify all the users for the system?

- a) Yes
- b) No.

Q2. Did you refer to the users as part of analyzing their information needs and requirements?

- a) Yes
- b) No.

Q3. Were the users were involved fully during the system analysis stages?

- a) Yes
- b) No.

Q4. On collection of the users’ information needs and requirements, did you incorporate them in the system?

- a) Yes
- b) No.

Q5. To what extent were the users involved in the system development

- a) Large extent
- b) Small Extent
- c) Not at all

Q6. Did you consider the user interface requirements during development?

- a) Yes
- b) No.

Q7. The system was tested several times before implementation. Did you involve the users during testing?

- a) Yes

- b) No.

IMPLEMENTATION AND ADOPTION

Q8. Did management support the system implementation?

- a) Yes
- b) No.

Q9. Once the system was implemented, did the users recognize it as a decision making tool?

- a) Yes
- b) No.

Q10. Were they users trained on all aspects of the system?

- a) Yes
- b) No.

Q11. Did you implement any system improvement suggestions made by the users during the training?

- a) Yes
- b) No.

Q12. What changeover approach did you use? Briefly explain.

.....

.....

.....

.....

Q13. Did you successfully install the system in all the users' computers after training?

- a) Yes
- b) No.

Q14. Was a follow up done to establish the stages of adoption?

- a) Yes
- b) No.

Q15. For the users who were not at any stage of adopting the system, did you establish the problem areas?

- a) Yes
- b) No.

Q16. Has the system been accepted and adopted fully as a HR decisions making tool?

- a) Yes
- b) No.

ORGANIZATION CULTURE

Q17. Organization culture plays a key role in information systems implementation and adoption.

- a) Strongly agree
- b) Agree
- c) Somewhat Agree
- d) Disagree
- e) Strongly disagree

Q18. To what extent did you factor in the OC during analysis and development?

- a) Large extent
- b) Small Extent
- c) Not at all

Q19. Does the system 'fit' with the University's values and beliefs?

- a) Yes
- b) No
- c) Do not know

Q20. Do you think the OC has affected the effectiveness of the system?

- c) Yes
- d) No

Q21. Would you consider re-designing the system with consideration of the OC?

- d) Yes
- e) No
- f) Maybe

Q23. There are theoretical frameworks which can fit the University's OC type to specific information systems. The identified frameworks would be used to improve systems adaptation. Would you consider using a framework in systems implementation?

- c) Yes
- d) No

APPENDIX C: LETTER TO ICT DIRECTOR REQUESTING FOR DATA FROM HRMIS

Jane Wairimu
Administration Department

Director
ICT, Centre

RE: REQUEST FOR DATA FROM HRMIS

Dear Sir,

I am a student at the Middlesex University pursuing a degree in Bachelor of Science in Information Systems. I am also a member of staff at the Personnel Section, HRMIS Unit. My project, in partial fulfillment of the degree course is “Organizational culture: effect on information systems adaptation”.

As part of my research analysis I am required to show how often Colleges use the HRMIS either for data entry or for reference to the various reports available.

The purpose of this letter therefore is to request for data showing how often all colleges are accessing the system between October, 2012 to date. Kindly include the Main Administration, represented by the HRMIS unit.

Thank you for your continued support.

Yours sincerely

Jane Wairimu
Student No. M00438105

APPENDIX D: RESULTS FROM THE HUMAN RESOURCE DEVELOPERS

I. Is the system installed in your computer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	93.3	93.3	93.3
	No	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

II. Was the installation of the system done following the required process of system installation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	73.3	73.3	73.3
	No	1	6.7	6.7	80.0
	Do not know	3	20.0	20.0	100.0
	Total	15	100.0	100.0	

III. Suggestions on improvement of system implemented

		Frequency	Percent
Missing	Yes	11	73.3
	No	3	20.0
	System	1	6.7
	Total	15	100.0

IV. Were you trained on how to use the software

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	93.3	93.3	93.3
	No	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

V. Problems with speed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	86.7	86.7	86.7
	No	2	13.3	13.3	100.0
	Total	15	100.0	100.0	

VI. Is there a help Menu?

		Frequency	Percent
Missing	Yes	8	53.3
	No	6	40.0
	System	1	6.7
	Total	15	100.0

VII. Is LAN available?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	46.7	46.7	46.7
	No	5	33.3	33.3	80.0
	Sometimes	3	20.0	20.0	100.0
	Total	15	100.0	100.0	

VIII. Problems with system?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	6.7	6.7	6.7
	No	3	20.0	20.0	26.7
	Sometimes	11	73.3	73.3	100.0
	Total	15	100.0	100.0	

IX. System easy to use?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	93.3	93.3	93.3
	No	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

X. Satisfied with features of the software

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	1	6.7	6.7	6.7
	Satisfied	9	60.0	60.0	66.7
	Somewhat Satisfied	5	33.3	33.3	100.0
	Total	15	100.0	100.0	

**XI. Does the system completely serve your
HR needs**

		Frequency	Percent
Missing	Yes	4	26.7
	No	4	26.7
	Sometimes	6	40.0
	System	1	6.7
	Total	15	100.0

XII. Best feature of the software

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy accessibility	7	46.7	46.7	46.7
	Quick generation of reports	8	53.3	53.3	100.0
	Total	15	100.0	100.0	

XIII. Experience in system use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	1	6.7	6.7	6.7
	Very good	7	46.7	46.7	53.3
	Good	7	46.7	46.7	100.0
	Total	15	100.0	100.0	

XIV. Positive impact on performance of duties

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	15	100.0	100.0	100.0

XV. Allowed user access area (Viewing of information)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	60.0	60.0	60.0
	No	6	40.0	40.0	100.0
	Total	15	100.0	100.0	

XVI. Allowed user access area (Generation of reports)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	53.3	53.3	53.3
	No	7	46.7	46.7	100.0
	Total	15	100.0	100.0	

XVII. Allowed user access area (Data coding)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	13.3	13.3	13.3
	No	13	86.7	86.7	100.0
	Total	15	100.0	100.0	

XVIII. Allowed user access area (Add, edit and delete records)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	20.0	20.0	20.0
	No	12	80.0	80.0	100.0
	Total	15	100.0	100.0	

XIX. Consulted during development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	40.0	40.0	40.0
	No	9	60.0	60.0	100.0
	Total	15	100.0	100.0	

XX. Values and methods considered during IS implementation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	11	73.3	73.3	73.3
	Agree	4	26.7	26.7	100.0
	Total	15	100.0	100.0	

XXI. IS improve business processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	12	80.0	80.0	80.0
	Agree	3	20.0	20.0	100.0
	Total	15	100.0	100.0	

XXII. Extent system has changed and improved HR process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Large extent	13	86.7	86.7	86.7
	Small Extent	1	6.7	6.7	93.3
	11.00	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

XXII. I find it enjoyable when I perform my duties in a familiar environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	10	66.7	66.7	66.7
	Agree	4	26.7	26.7	93.3
	11.00	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

15. Extent referring to the system in performance of duties

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Large extent	15	100.0	100.0	100.0

XXIII. Access any time, easy source of information

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly agree	8	53.3	53.3	53.3
Agree	6	40.0	40.0	93.3
Somewhat Agree	1	6.7	6.7	100.0
Total	15	100.0	100.0	

XXIV. Use the system more if features were familiar and recognizable

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly agree	9	60.0	60.0	60.0
Agree	5	33.3	33.3	93.3
Disagree	1	6.7	6.7	100.0
Total	15	100.0	100.0	

XXV. Strategic Manager refer to system for information

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	10	66.7	66.7	66.7
No	2	13.3	13.3	80.0
Sometimes	3	20.0	20.0	100.0
Total	15	100.0	100.0	

APPENDIX 5: RESULTS FROM THE SYSTEM DEVELOPERS

I. Users training in all aspects of system?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes%	10	83.3	83.3	83.3
	No%	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

II. Values and methods of working considered during information system implementation and adoption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	7	58.3	58.3	58.3
	Agree	3	25.0	25.0	83.3
	Disagree	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

III. Development of IS meant to improve business processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	10	83.3	83.3	83.3
	Agree	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

IV. Extent to which system changed and improved HR process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Large extent	11	91.7	91.7	91.7
	Small extent	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

V. Satisfied that the system is accessible to users and features capture user needs and requirements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	2	16.7	16.7	16.7
	Agree	9	75.0	75.0	91.7
	Somewhat Agree	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

VI. Users agreed that the system was relevant and would improve on the efficiency of the HR process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	9	75.0	75.0	75.0
	Somewhat Agree	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

VII. I have often been requested by the system users for improvement and other requirements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	4	33.3	33.3	33.3
	Agree	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

VIII. Management support during system implementation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	100.0	100.0	100.0

IX. System accessed and used by all levels of users. Satisfied that they system implementation and adaptation was a success.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	1	8.3	8.3	8.3
	Agree	9	75.0	75.0	83.3
	Somewhat Agree	2	16.7	16.7	100.0
	Total	12	100.0	100.0	