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Change Management Practices: A Case of Introduction of Integrated Payroll and Personnel Database System at the Ministry of Medical Services, Nairobi Kenya

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Abstract
Purpose: The impetus for this study was attempt to bridge the knowledge gap as concerns the factors that affect the adoption of Integrated Payroll and Personnel Database (IPPD) s. The specific objectives of the study were: to establish the role of PEOU of IPPD in its adoption; to evaluate the effect of PU of IPPD on its adoption; and to determine the effects of individual perception towards the adoption of IPPD.**Methodology:** The study focused on Ministry of Medical Services. The population of interest was the employees of the company who are current users of the IPPD, drawn from the human resources department, whose number stood at 150 as at 30th June 2010. A semi-structured questionnaire was the main data collection instrument. The researcher also used interview schedules with open questions, aimed at meeting the objectives of the study. Primary data were analyzed by employing descriptive statistics such as percentages. Statistical Package for Social Sciences (SPSS) was used as an aid in the analysis. **Findings and Discussions:** The findings indicate that perceived ease of use was a key factor in determining adoption of IPPD in Ministry of Medical Services. The employees embraced change of technology with anticipation for better performance, which further enhanced the adoption of IPPD in the company. In line with perceived ease of use, the other factors that influenced the adoption of IPPD in Ministry of Medical Services include the perceived feeling of comfort when using IPPD, the user friendliness of IPPD, the speed with which IPPD processed transactions and the ability of the users to get support when using IPPD. The findings also show that Perceived Usefulness is an important factor in determining the adaptation of innovations. The higher the perceived usefulness of the IPPD system, the higher the chances that it would be adopted. Moreover, the degree to which an individual believes that using a particular system would enhance his or her job performance enhances the chances of adopting the system and the more the suitable the system is to the work ethic of the users the higher the acceptance rate. Further, the findings show that attitudes are a significant predictor of behavior. In addition, though individual attitude is necessary in determining adoption of new technologies, it is not sufficient condition for success. Certainly attitude may not strongly determine the intentions of an individual at the workplace regarding performance when additional factors e.g. usefulness are taken into account independently.
Keywords: Change Management; Integrated Payroll and Personnel Database; Business Processes; Adoption; Perceived Ease of Use; Perceived Usefulness; Legacy Systems.

ABBREVIATION

CSE	Computer Self-Efficacy
GCS	Government Computer Services
HRM	Human Resources Management
ICT	Information & Communications Technology
IMS	Information Management System
IPPD	Integrated Payroll and Personnel Database
ISO	International Standards Organization
IT	Information Technology
LDC	Less Developed Country
MOMS	Ministry of Medical Services
PEOU	perceived ease of use
PU	Perceived Usefulness
ROI	Return On Investment
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
TSC	Teachers Service Commission
USA	United States of America
UTAUT	Unified Theory of Acceptance and Use of Technology

1.0 INTRODUCTION

1.1 Background of the Study

Organizational change is a reality of the modern world which is not expected to change in the near future. If anything, organizations can expect to face the need for even more change in the future, at an ever faster pace. Organizations have to deal with new technology and with upgrades for existing technology, and as noted by Keaney (2000), the organizations have to put up with the reorganizations, processes that involve improvement initiatives and mergers.

1.1.1 Management of Change

Most people prefer predictability and stability in both their personal and professional lives. People typically avoid situations that upset order, threaten their self-interests, increase stress or involve risk. When faced with changes to the status quo, people usually resist initially. The resistance continues and, in some cases increases, until they are able to recognize the benefits of change and perceive the gains to be worth more than the risk or threats to their self-interests. O'Toole (2002) points out that people resist change due to the fundamental human objection to having the will of others imposed upon them.

Organizational change management involves guiding and managing human emotions and reactions with the aim of cutting down the unavoidable drop in productivity that is brought about by change (Maurer, 2001). Maurer assert that organizational change leads to an adaptation to the environment and hence improvement in performance. In the current corporate market, change is constant. New processes, procedures, and technologies that are generally viewed differently from established, practical, and familiar ways of doing work by individuals represent change management. It is important for the organization to handle these changes as effectively as possible to avoid unrest as a result of employee resistance to change. If there is a smooth transition between the old and the new, work can be carried out with ease and workflow will not be affected. Considering the importance of organizational change management, this study seeks to determine the drivers of change in the Ministry of Health, establish the change management strategies used, determine the factors influencing resistance to change and suggest possible interventions that could be employed to overcome the resistance and enhance success of the change management.

Organizations face difficulties when dealing with change. The argument is supported by Haux & Kulikowski (2001) who assert that organizations face a major dilemma owing to the rapidly changing environment, the ability to change rapidly and efficiently. With the current dominance of service oriented markets an organization and its employees need to adapt to changes within the markets and, the employees to changes within the organization. However, employees may have concerns about changes at their work place and could appear to be resistant. Recognizing the nature of change, its mode of implementation and its consequences, is the key to understanding the reasons for employee reaction to change (Haux and Kulikowski, 2001).

Zaltman & Duncan (1999) define resistance as “any conduct that serves to maintain the status quo in the face of pressure to alter the status quo”. Change may be resisted because it brings about uncertainty in the way people make sense of the world, therefore questing on their values and rationality, which results to some form of self justification or defensive reasoning (Argyris, 2000). O’Toole (2002) asserts that resistance occurs when people do not trust each other or have past unresolved issues toward those leading change. According to Waddell & Sohal (1998), resistance introduces expenses and delays into the change process that are difficult to anticipate but which have to be considered. They assert that the sudden and rapid change can lead to unrest among employees and also lower the morale of the staff. Change management therefore needs to be handled delicately and effectively in order to achieve desired results with minimum resistance.

1.1.2 Integrated Payroll and Personnel Database

Innovations enhance productivity by removing cumbersome manual processes in organizations. This situation obtained in Kenyan Public Service around 1994 after introduction of Integrated Payroll and Personnel Database (IPPD), a system that replaced the manual data-management system. The Integrated Payroll and Personnel Database initiative was mooted to help address the challenges of manual payroll administration. It is a computerized system conceived to replace the manual and semi-manual system, which was cumbersome, causing salary delays, inaccuracy in determining staffing levels and leading to poor accountability of funds.

Before its inception, Government Ministries/ Departments used the Personnel Information Systems. IPPD embraced processes and procedures aimed at gathering, storing and processing information for effective and efficient decision making. Before inception of IPPD, it was difficult to establish personnel issues regarding Government employees like recruitment, training, postings, transfers, seniority lists, promotions and retirement. Moreover, timely determination of salary issues, enforcing statuary deductions, processing of request for loans, advances and ensuring their recovery was challenging. Even decisions on annual increments and leave processing were manually done. The systems used also lacked the basic personnel information such as Identity Card numbers, educational qualifications, full dates of appointments and birth.

The Government Computer Services retrieved data through printouts, resulting in printing of bulky listings which were hardly used for the intended purpose. The result was submission of payroll data by

Ministries/Departments to GCS using diskettes thus compromising data integrity besides not being cost effective. Before introduction of IPPD, HRM systems did not share data due to lack of appropriate network. Consequently, duplication of activities like data-gathering and entry took place, occasioning time loss, consistency, reliability of the services delivered.

The development and implementation of IPPD started when Ministry of State for Public Service formed a synergy with the Government Computer Services (GCS). This involved the implementation of the IPPD system prototype on the new IBM mainframe computers at the GCS. This guaranteed the necessary data processing speeds to support all ministries/departments. This was followed by the installation of IPPD computers and programmes in the ministries/departments and the LAN. Thirdly, high speed Wide Area Network (WAN) for remote data access between the GCS and all ministries/departments was set up. With this in place, training of systems analysts on network administration and maintenance started in earnest.

The implementation of IPPD included development of comprehensive training manual by the then Directorate of Personnel Management (now Ministry of Sate for Public Service) to enable Ministries /Departments implement it. The training manual was instrumental in familiarizing the Civil Servants with the processes entailed in IPPD system, imparting thorough knowledge of the initiative to the users and building capacity in the use of IPPD system to a level where the users can work independently. After acquiring the relevant skills, conversion and cleansing of personnel data from all relevant sources began. These sources included the 1997/98 headcount data, ministries/departments' payrolls and paper-based records in the ministries/departments.

The process was finalized with the printing of the IPPD system documentation, which included the user manuals, technical manuals; training manuals, trainer's guides and data capture Instruments. With these instruments in place, the initiative was extended to users by training them on how to use the IPPD system. The users include managers and operators in all ministries/departments. To sustain the initiative, a Technical Support Unit was set up to help the users when necessary. The main stakeholders in IPPD are Government Ministries/ departments, Local authorities, Teachers Service Commission (TSC), etc. Other stakeholders include insurance and hire purchase companies, commercial banks, Kenya Revenue Authority and cooperative and credit societies, which have benefited due efficient means of effecting salary deductions through IPPD.

1.1.3 Ministry of Medical Services

Ministry of Medical Services is one of the ministries in the Government of Kenya. The Ministry is responsible for promotion, regulation and provision of health care services to the people of Kenya; we are committed to ensuring that the services are of quality and are accessible to every Kenyan. The strategic direction of the Ministry is spelt out in the following statements:

Vision: To be an efficient and cost-effective medical care system for a healthy nation.

Mission: To promote and participate in provision of integrated and high quality curative and rehabilitative services to all Kenyans.

Goal: To contribute towards the reduction of health inequalities and to improve the health impact and outcome indictors.

The Ministry is mandated to oversee the provision of curation healthcare services countrywide. The core functions of the Ministry include, but are not limited to the following: Formulation and implementation of health and sanitation polices; Setting standards and regulating the provision of health service delivery; Provision of curative and rehabilitative health services; Registration of doctors and paramedical practitioners in the country; Administration of the national Referral Hospitals, Medical Training Colleges, Hospital Insurance Fund, and Medical Supplies Agency; Management of the regulatory bodies for pharmacy and medicine; Provision of maternal and child health services; provision of health education.; and efficient planning, procurement, financial and administration management which support implementation of health sector polices.

The Ministry is structured along the following seven (7) departments: (i) Human Resources Management; (ii) Medical Supplies Co-ordinating Division; (iii) Procurement; (iv) Professional and Technical Services; (v) Accounts; (vi) Planning; (vii) Curative and rehabilitative department, which consists of the following divisions: Mental health, Clinical service, Dental and oral health, Health administration, Rehabilitative services, Bio-medical engineering services, Pharmacy and Nursing.

In order to effectively undertake its functions, the Ministry has a full-time staff of 28,565 located in its various health facilities countrywide as at June 30th 2010. All the employees are distributed in the seven (7) following functional sections in the HRM Department; Salaries, complement control, budget, promotions, appointments, discipline, and pension.

This study focuses on the Human Recourses department, with a staff capacity of 150 employees, all based at the head office. The department manages human recourses issues affecting other staff and particularly the issues of Payroll management, complement control, Promotions and processing of final dues. The core functions of the Human recourses department include the following: Management of personnel emoluments and other personal allowances; interpretation and application of service regulations, procedures and policy matters;

liaison with Public Service Commission regarding appointments, promotions, and discipline of staff; liaison with Ministry for state for Public Service regarding Establishment, Complement control, Human Resource Management polices Administration and interpretation of schemes of service, Authorization of allowances and advances, Audit queries regarding Personnel Emoluments; Deployment of staff; Preparation of pension claims; and Preparation of agenda and production of minutes for Ministerial Advisory/selection/postings committees and filling returns to the Public Service Commission of Kenya on the same.
The Human Resources Management (HRM) Department is headed by the Deputy Director HRM. The administrative structure is as shown in table 1.1 below.

Table 1.1: Administrative structure of the deartment of HRM

Cadre of staff	*Job group*	*Population*
Senior manager	N – R	5
Middle level managers	K – M	15
Supervisors	H – J	40
Operators	F – G	70
Support services	A - E	20

1.1.4 Adoption of Integrated Payroll and Personnel Database at the Ministry of Medical Services

From the early days of data processing, firms have continued to rely heavily on an IT team to maintain and develop systems in-house. However, with the advent of batch-processing systems which saw the introduction of what is at present known as legacy applications (Moormann, 1999). Historically, the legacy systems have been built around firms' lines of business with little or no flow of information across functional lines (Chowdhury & Chowdhury, 2003). Even though, in the later years, several firms discarded mainframe-based technologies and adopted 2 tier client/server applications, old days massive in-house developed applications still play a key role in today's IT landscape (Betsch *et al.,* 2004).

The provision of accurate and timely data is a fundamental aspect of informed decision making. The size and complexity of the public service demand substantial and deliberate effort in gathering, sorting and processing HRM information to sufficiently support the numerous decisions made on a daily basis. With a credible and reliable data source, the inefficient processes normally associated with large organization such as MOMS can quickly be reversed into efficient and effective client friendly services. As part of reform initiatives in the civil service in the 1990s, the Government developed an Integrated Payroll and Personnel Database (IPPD) System. This is a computerized system that integrates the personnel, payroll and budgeting data which provide the information necessary for HRM decision- making. The aim of the system is providing for the synchronization of vital HRM related data in the civil service thus ensure ring accuracy, integrity and consistency of HRM and payroll data in Ministries.

The introduction and implementation of the IPPD system was also a deliberate strategy for the Civil Service to embrace IT and adopt modern methods in the management of information in its efforts to improve service delivery. It is against this background that the MOMS implemented initiated the implementation of IPPD in March 2005 and generated the first payroll in October 2005. The challenges faced by the Ministry of Medical Services (MOMS) included a centralized data processing that was slow and error prone. The systems were bespoke and standalone and some had no vendor support. The systems were running on old infrastructure and the organization exhibited very low ICT literacy levels (MOMS, 2009).Suffice to say some of the business benefits gained over time by this implementation include lower costs (lower inventories, labor, wastage) hence increased efficiency and improved customer and supplier service (reduced cycle times and enhanced accuracy). However, as aptly put across by Al-Mashari & Zairi (2000) and Gefen & Ragowsky (2005), indeed the reality that a large number of IPD implementations may not realize value immediately and only after the system has stabilized and user confidence is gained adds to the difficulty of measuring IPPD benefits. Some of the challenges that MOMS is currently facing is substantial cost of ownership in the form of software licensing and consultancy costs of the IPPD. There is a lack of adequate and highly experienced IPPD consultancy resources in the local market.

1.2 Statement of the Problem

Competent management is one of the sources of sustainable competitive advantage in rapidly changing organizations (Norhia, Joyce & Robertson, 2003). According to Cohen (1999), for any organization to remain at the top in this competitive world, it has to support and implement continuous and transformational change. Research has attempted to explain the fundamentals of change, explain why change is so difficult to achieve, and develop models to manage the change process. Armenakis and Harris (2002) argue that leaders seem not to understand what change is, its antecedents and the ability to ensure that all members in the organization take part in the change initiatives. Armenakis and Harris further assert that change programs do not achieve desired results most of the time. A study by Prowse (2003) shows that research on the drivers of organizational changes is

indeed scarce. This shortage is confirmed by Oman (2003) who holds a consensus that although the subject of organizational changes in developed economies has recently received a lot of attention, the literature in developing economies has been almost ignored by researchers, an idea shared by Stanger (2004).

Extensive research on IPPD especially in the USA is readily available. For instance Willis & Willis-Brown (2002) identified two distinct phases of IPPD adoption: IPPD implementation and IPPD integration. The pace and outcome of research on IPPD in developed and developing economies are very different. There is limited research available on IPPDs in developing countries and can only be found for China and Greece, hence the need to undertake a similar study focusing on developing countries.

The Ministry of Medical Services, in its strategic plan, identified ICT as an enabler of strategic business objectives and as such one of the Human Resource Department's strategic objectives was to put in place a centralized information management system (IMS). Following a rigorous selection process the IPPD was selected for implementation to help achieve this strategic objective. In October 2005, the MOMS completed the implementation of IPPD and successfully produced the first payroll using the computerized system. The system was expected to assist in provision of accurate and timely data for making informed decisions with a credible and reliable data source. The inefficient processes normally associated with large organizations were to be replaced with the efficient and effective client friendly online services. However, to date most of reports required in HRM for decision making involving disciplinary actions, budgeting, promotions, , pensions and reports cannot be produced through the hence are still manual.

The delay in processing promotions, confirmations, pensions and finalizing discipline cases is still there. The purpose of the study is to establish the reasons as to why the change in technology (computerization) of HRM has not achieved its expected aims and make recommendations on how to improve the system to achieve its aims. According to Oliver & Romm (2002) and Shang & Seddon (2002), firms should seek a cost-leadership strategy in the short and medium term in order to regain profitability. In an effort to streamline operations and to enhance efficiency as operational benefits firms should consider re-designing their businesses processes and adopt information systems. For the long haul a firm should aim at achieving greater organizational efficiency and effectiveness as a strategy (Hedman & Borell, 2003). This study has attempted to determine the level of adoption of IPPD in MOMS based on the factors earlier highlighted.

The study has further explored the factors affecting the adoption of IPPD within a specific sector in an attempt to gain a deeper understanding of IPPD adoption in a non-traditional industry where according to Zhu (2004), the usage of IPPD is not perceived to be a standard yet. Studies by Ioannou and Papadoyiannis (2004), Spathis & Constantinides (2002) and Towers (2005) indicate that there are salient differences in adoption between large and small organizations. This study has thus made an attempt to bridge the knowledge gap by focusing on the factors affecting IPPD adoption in a less developed country (LDC) in Africa with a focus on the Ministry of Medical Services.

1.3 General Objective

The general objective of this study was to determine the factors that affect the adoption of IPPD in the Ministry of Medical Services.

1.4 Specific Objectives

The study was developed using the following specific objectives:

(i) To assess the role of perceived ease of use (PEOU) of IPPD in its adoption in the Ministry of Medical Services

(ii) To evaluate the effect of perceived usefulness (PU) of IPPD on its adoption in the Ministry of Medical Services

(iii) To examine the effect of individual attitude towards the adoption of IPPD in the Ministry of Medical Services

1.5 Importance of Study

The current study seeks to raise ideas and issues in the hope that the various stakeholders and persons directly addressing issues related to change management in various organizations will continue the discussion. It does not presume to offer a prescription for the ideal measures to be employed by the stakeholders so as to reverse the trends. Specifically, the findings of this study, it is hoped, will be beneficial to various key stakeholders as discussed in the subsequent sections.

Human Resources Management of the Ministry of Medical Services: The management needs to understand the relationship between PEOU, PU and individual attitude towards the adoption of IPPD within the organization. This will help them gain an insight onto the current level of adoption of IPPD and the findings if put to good use should help MOMS realize a faster return on investment (ROI).

Employees of the Ministry of Medical Services: The study will be important to the employees to perceive their

role in the adoption of IPPD and how to improve the chances of success in the adoption. The findings of this study will help employees gain an insight on what directly or indirectly influences actual adoption and usage behavior towards IPPD and hence align the employees and organizational goals in the adoption of IPPD for the mutual benefit of both the organization and the employees.

IPPD Implementation Partners: The output of the study will be a source of recommendations to the Implementation partners that they need to take cognizance of and communicate to the organization during implementation. This would add value to the implementation process, hence providing a competitive edge.

Academicians and Researchers: The study will attempt to bridge the existing knowledge gap in the area of IPPD adoption in the public sector. This will shed more light on IPPD adoption in one of the sectors that IPPD is not considered a standard yet. It will also assist other researchers who will carry out studies that are related to this study.

1.6 Scope of the Study

This study focused on the employees of the Ministry of Medical Services, which has implemented the IPPD. Primary data was collected from the various cadres of permanent and pensionable staffs in the Human Resources Department who have worked in the ministry since the beginning of the implementation of IPPD and are current users of the IPPD. The study took a period of two months, commencing July 2010.

1.7 Limitations of the Study

The following limitations, could limit the generalisability of the study results:

To date, no literature is available on the drivers of change in any of the Government Ministries, the change management strategies used, the factors influencing resistance to change and the possible interventions that could be employed to overcome the resistance and enhance success of the change management. Thus the researcher does not have data for comparison. Some respondents may misinterpret some questionnaire items while completing the questionnaires. This limitation will be addressed by conducting personal interviews, which may also be inhibited by time limitations, issues of anonymity (and possibly confidentiality).

Some of the information sought is of a confidential nature, which the respondents will either deliberately refuse to divulge or may not have access to. The time allocated to the study may also not be sufficient to enable the respondents complete the questionnaires as accurately as possible, considering that they will at the same time be carrying out their daily duties. In addition, it is highly likely that some of the respondents will provide answers that are subjective, which may affect the final study findings due to biases.

1.8 Assumptions of the Study

Though the researcher prefers to administer the data collection tools to only the sampled staff, some of them may have to delegate to their colleagues, they themselves either being too busy or away on official duties. It is thus assumed that the respondents will be able to give similar information as would have been provided by the originally sampled staff. It is also assumed that the sampled respondents will cooperate by way of providing objective answers to the questions in the questionnaire.

1.9 Definition of Terms

The following are the definition of the various terms used in this study:

Change

This is an effort which comprises of actual physical changes at the workplace operations, leading to a situation of uncertainty (Rummler & Brache, 2000).

Business Processes

A business process is a series of steps designed to produce a product or service (Rummler & Brache, 2000).

Adoption

This is defined as the transfer (conversion) between an old system to a target system in an organization (McGee, 2005).

Perceived Ease of Use (PEOU)

The belief regarding how much the use would be free of mental effort (Lu, Yu, Liu &Yao, 2003).

Perceived Usefulness (PU)

The degree to which individuals believe that using a particular system would enhance their job performance (Lu, Yu, Liu & Yao, 2003).

Legacy Systems

Existing systems and technology that an organization has a considerable investment in and that might be entrenched in the organization (McGee, 2005).

2.0 LITERATURE REVIEW

2.1 Introduction

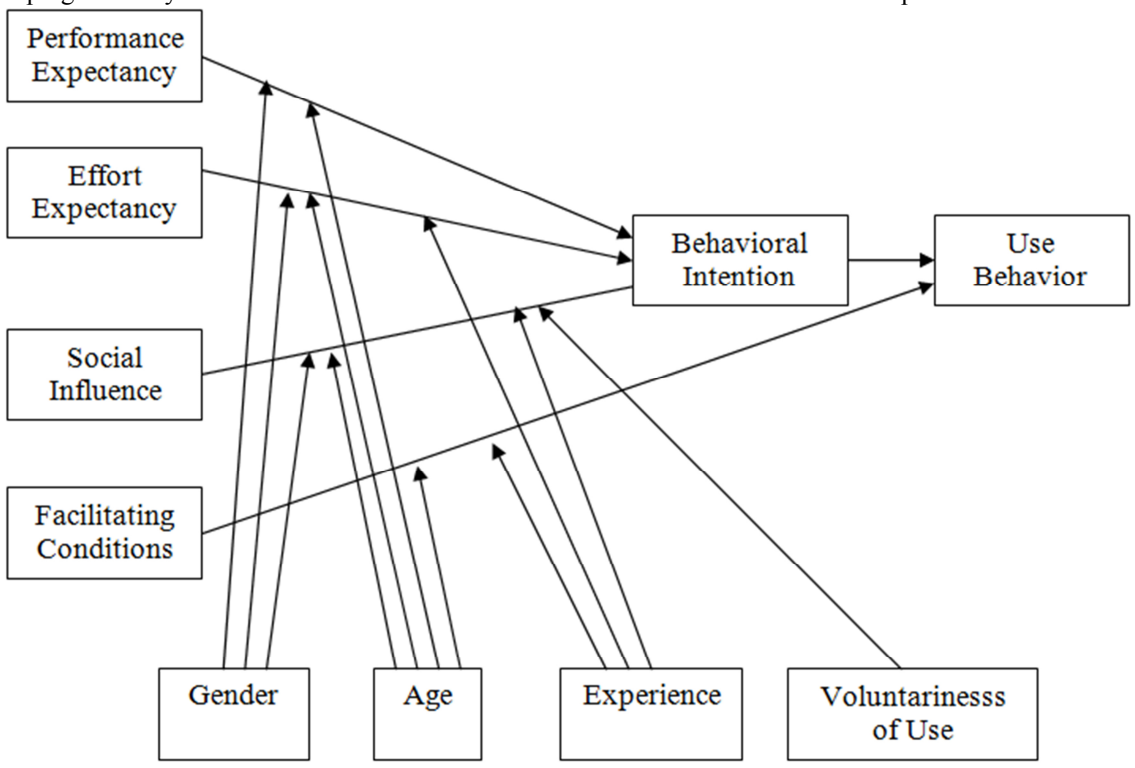
This chapter represents an evaluation of the literature on the factors affecting IPPD adoption as discussed in previous studies. The subsequent sections begin by looking into technology adoption in general and several models and theories are advanced to explain. The factors that have affected IPPD adoption are also investigated. The chapter is presented in relation to the specific objectives in the area of perceived usefulness (PU) of IPPD, perceived ease of use (PEOU) of IPPD and individual attitude in the adoption of IPPD. Existing literature is further used to explain these factors and more importantly the effect of the factors on IPPD adoption. Finally, the chapter is summarized based on the literature presented on the factors affecting IPPD adoption.

2.2 Perceived Ease of Use (PEOU) and Adoption of IPPD

This section presents literature on the PEOU and Adoption of IPPD that is relevant to the study.

2.2.1 Theoretical perspectives and Models on Technology Adoption

Venkatesh, Morris, Davis (2003) analyzed the research on eight Information Technology acceptance models: Theory of Reasoned Action (TRA); Technology Acceptance Model (TAM); motivational; planned behavior theory; combined Technology Acceptance Model and planned behavior theory; PC utilization model; theory of innovation diffusion; and theory of social cognitive. As a result of bringing together elements spanning the eight models, they built and empirically authenticated and revised TAM that has been known to be called the Unified Theory of Acceptance and Use of Technology (UTAUT) (Figure 2.1). Similar to TAM, UTAUT is renowned as aiding in enlightening and forecasting of technology adoption in organizations. Venkatesh *et al.*, (2003) stated that "this has been very useful in the firms' management assessing the benefit realization for new technology and helping to clarify the critical success factors and the variables that would ensure acceptance".



Source: Ventakesh *et al* (2003)

Figure 2.1: Adaptations to original TAM Model

2.2.2 Technology Acceptance Model

Technology Acceptance Model has generated a lot of interest in the academic literature, and broad summaries of the literature and variations are available in Ingham and Collerette (2003) and Lu *et al.,* (2003). The literature is widely acclaimed for both its illustrative and analytical properties .As an illustration, Ingham *et al.* (2003) conclude that TAM has established itself as a critical theoretical model in helping to clarify and explain user attitude and behavior towards technology and its use including during the implementation of the system. Shih (2006), suggests that recent empirical studies have focused on exploring the external variables that influence decisions to use technologies, but doing so indirectly via their influence on user beliefs (PU and PEOU). Other

research examined the association between PU and PEOU on the one hand and use per se on the other hand include Karahanna and Straub (1999) and Horton, Buck, Waterson and Clegg (2002).

TAM was adapted to highlight the underlying causes between external factors to the individuals' intention to use technology and actual usage in a work environment. Technology Acceptance Model brings forth two particular constructs, PU and PEOU. PU describes the individual's view of the extent to which utilizing the technology advances the individuals' productivity in the work environment, whereas PEOU refers to the individuals' view of the amount of effort required to make use the technology. On the plus side, TAM highlights peoples' motivations and the actions they take to achieve their goals. However, there have been some reservations as well. Venkatesh *et al.* (2003) argues that while parsimony is TAM's strength, it is also the models important constraint.

Most of the published research concerning consumer adoption of technology has been inclined to focus on the social, demographic and psychographic attributes of probable adopters. Although these types of personal traits of a consumer have been found to be evidence of acceptance (Gahtani, 2002) a growing body of research has shown that it is the seeming attributes of technology itself as opposed to the personal traits that are the stronger predictors of the acceptance decision.

Rogers (2003) asserts that the attributes of any technology as viewed by the different members of a collective group can shed light on the various acceptance levels for that technology (p 208). The above study introduced five factors that affect adoption with the primary characteristic being the competitive edge i.e. the fact that the technology is seemingly viewed as relatively more advanced to the technology it seeks to replace (Premkumar & Ramamurthy, 1995). The rest of the factors are concerned with the technical aspects of the innovation, specifically its suitability (in relation to the firms' internal procedures and processes), its level of complexity, level of visibility of its achievements and its trial ability.

2.2.3 Perceived Ease of Use

PEOU is tied to an individual's assessment of the effort involved in the process of using the technology. Measure of PEOU in this study is in terms of how clear and understandable is the interaction with system, ease of getting the system to do what is required, mental effort required to interact with the system, and ease of use of technology. The selection of TAM was based primarily on its parsimony and predictive power, which makes the model easy to apply to a different information system device (Venkatesh *et al.,* 2003; Pikkarainen, Pikkarainen, Karjaluoto, and Pahnila, 2004; Guriting and Ndubisi, 2006). The focus in TAM has mainly been on technology acceptance in organizations.

In fact, Brown *et al.* (1999) advanced that PU per se is not a key determinant regarding usage but further relied on the extraneous factors, which were more likely to affect PEOU. Venkatesh *et al.* (2003) has performed tests on TAM with simplicity/complexity, perceived and technology self-efficacy, self motivation, technology discomfort and individuals perceived satisfaction. They went ahead and performed empirical tests with a model targeting 3 firms and working with 300 employees within the firms over a three month period.

Venkatesh (2003) defines simplicity/complexity as the extent to which consumers perceive a new innovation as easy to understand or use. For consumers without previous computer experience, or for those who believe that e-banking is difficult to use, adoption of these innovations may be thwarted. Technology discomfort, is the tendency of an individual to be uneasy, apprehensive, stressed or has anxious feelings about the use of technology is a similar construct to computer anxiety, a variable that has been found to have a negative effect on perceived ease of use (Venkatesh, 2003).

Studies on the success of the process of gaining knowledge and understanding of the software have shown the significance of the learner's computer self-efficacy (CSE). This is defined as a learner's self-judgment of the ability to utilize a computer. Learner's with high computer self-efficacy are principally driven to be persistent in their pursuit of a goal, and not easily disheartened by failure. (Venkatesh *et al.*, 2003; Wang *et al.*, 2003). Few individuals with high CSE are expected to become frustrated with technology. Moreover, studies have shown that higher CSE is closely linked with higher PEOU of IT. The authors of the above study proposed that individuals with higher CSE would understand IPPD better and hence increase the usability. Further they hypothesized that perceived self-efficacy regarding confidence in one's ability to use technology would have a positive effect on an individual's judgment about the usefulness and ease of using technology.

2.2.4 Relative Importance of PEOU

According to Meuter (1999), Bobbitt and Dabholkar (2001), Dabholkar and Bagozzi (2002), Walker, Craig-Less, Hecker and Francis (2002), personal contact and perceived risk should be considered within the framework of this kind of research. Wang, Tang and Tang (2001) noted that some research has been associated to PEOU to the achievement and value of Information Systems and customer satisfaction. Consumers who feel uncomfortable with technology will have a greater desire for personal contact, defined as the interpersonal interactions providing direct response, assurance, a sense of control and social interaction. This construct is proposed to have a negative effect on perceived ease of use and perceived usefulness of technology. In terms of perceived risk, consumers may perceive technology as riskier. This perceived riskiness is proposed to have a negative effect on

perceived ease of use and perceived usefulness of technology.

According to Scott and Vessey (2002), early researchers who were studying the field of technology and its usability identified the basic principles of a good design, namely using a superior conceptual model prior to designing a product, using consistency and speaking the users' language. Krug (2000) argues that usability of technology is the process of ensuring that the technology works as expected, and that a user of average competency can use it relatively well as intended with little or no frustration. This practice has been carried out consistently to the design of goods for sale, as well as entire software systems, including the user interface, supporting documentation and help system (Hohmman, 2003).

International Standards Organization (ISO) 9241 Part 11 (1995) defines usability as the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use. Effectiveness measures the "goodness" of the output by the user or whether users can perform their tasks, whereas efficiency has more to do with the quantity of work output in relation to the time, effort and resources involved. The user satisfaction index is a measure of the preferences including perceptions regarding the usability of a product. High usability products will allow for users to perform their duties as expected in a timely fashion and with little or no frustration.

According to Ceaparu, Lazar, Bessiere, Robinson, and Shneiderman (2004) "IPPD systems have a broad scope in the features and functionality. Nonetheless, a richer system can offer less useful functionality if it its' usability is viewed as poor. Users might look for alternative manual work-around or even on the whole circumvent the use of the system... Besides, rich functionality, intricacy and flexibility, as exhibited by IPPD systems, can result in, misunderstanding, uncertainty, disappointment and other disturbing negative responses, which can lead to inaccurate entries, especially for learners." Learners do not comprehend the cause of the error and are incapable of responding to the error appropriately; which may result in them acting in ways that could potentially make the situation worse (Goodwin, 1999). Then again, minimal customizations and enhancements into the usability can result into large cost savings (from avoidance, reduction of risk, and reduction in errors, training and support), user productivity will be enhanced and improved user satisfaction levels (Ceaparu *et al.,* 2004).

Studies on usability acknowledge the importance of navigability of the system (Gillan and Bias, 2001). Clear presentation employs the basic fundamentals in graphics and design for graphics, layout, colors, white space, clarity and fonts, meanwhile ensuring users are not distracted from the task at hand. According to Ceaparu *et al*. (2004), "learning is critical in terms of usability because redundant technical terminology and confusing acronyms hinder effective learning."(p.43). Hohmann (2003) concludes that jargon should be used from within the widely accepted language of its users

2.3 Perceived Usefulness (PU) and Adoption of IPPD

This section represents the literature on the PU including Adoption of IPPD that is relevant to the study.

2.3.1 Perceived Usefulness and the role of perceived ease of use of IPPD

According to Mathwick, Rigdon & Malhotra (2001), "Perceived Usefulness is the degree to which an individual believes that using a particular system or technology would enhance his or her job performance." PU is an important factor in determining the adaptation of innovations (Tan & Teo, 2000). Bhattacherjee (2002) observed that an individual's readiness to conduct business via a system having identified the system is better known as PU. Measures of PU of information systems in this study will be considered in terms of increase in productivity, improvement in job performance, enhancement of job effectiveness and usefulness in the job.

Several empirical studies have argued that PU is a major catalyst of information technology usage (Venkatesh *et al.*, 2003; Gefen, 2003; Hsu and Lu, 2004; Ong *et al.,* 2004). Trombley & Lee (2002) defined E-learning also known as Web-based or E-learning as "ways of gaining knowledge in which content is disseminated in an electronic instructional manner delivered through the internet". Within the e-learning framework, a learner perceives that utilization of an E-Learning System will be less complex and relatively effortless and fairly simple. For that reason, PU will appeal to their primary objective to acknowledge and accept the E-Learning System, in a direct manner or indirect through PEOU. Studies carried out on TAM also demonstrate that PEOU of technology has an impact on its PU. Individuals that generally consider technology as difficult to use will argue that it is not helpful (Davis, 2003)

2.3.2 Impact of Perceived Usefulness on IPPD Systems Success

It is widely acknowledged that users would have an incentive to accept an IPPD system when it is viewed that the IPPD could aid them in accomplishing expected performance levels (Amoako-Gyampah and Salam, 2004). Accordingly, the higher the usefulness of utilizing the IPPD, the greater the likelihood it is that it would be accepted. Earlier studies often comprise of correlations regarding usefulness and its adaptation, Agarwal & Karahanna (2000) define PU as a construct linked to a judgment of the benefits realized by an individual or firm via the use of the innovation. Technology acceptance or an assessment of its usage has generally been characterized by a positive attitude towards work and productivity (Venkatesh *et al*., 2003).

A major area of study of system implementation has been to establish why people accept or reject new technology. Another acceptance criterion of new technology is relative advantage which is related to the degree to which technology is perceived as being superior to the innovation it supersedes. The degree of relative advantage is often expressed as economic profitability, social prestige, and savings in time and effort, immediacy of the reward or as decrease of discomfort. (Rogers, 2003). The construct of relative advantage is highly domain specific and thus advantage can be seen differently in context of different innovations and on other hand of different users.

Research by Guriting & Ndubisi (2006) takes into account usage based on usage behavior per se which becomes a major contribution of the research to the body of knowledge. The study postulates that persona-system characteristics (e.g. PU and PEOU) and system usage will be experienced by the user when they possess greater IT knowledge and receive strong technological support. CSE is a dominant factor in regard to the role it plays on the impact on PEOU and PU (Hayashi, Chen, Ryan & Wu 2004). This is as a result of the level of the users' confidence in their computer-acquired knowledge and capabilities that has an influence on their perception of the ease or difficulty in performing a specific function using new technology and how relevant that new technology will be to their functions. The "magnitude of CSE" is known as the level to which users have confidence that they are able to carry out complex assignments using a computer (Compeau *et al.*, 1999). Individuals with a higher level of CSE will exhibit a greater aptitude to control the system independently with not as much dependence for routine aid and technical support. For that reason the individuals will, as a result, perceive the system as valuable in their acquisition of knowledge.

2.3.3 The Impact of PU on Intention

Social influence profoundly affects user behavior. Despite the fact that the impact of individual norms on intention remains uncertain, from earlier studies a considerable amount of academic and experiential proof in relation to the significance of the role of individual norms on the use of technology, directly or indirectly, through PU in the workplace (Venkatesh *et al.,* 2003; Hsu &Lu, 2004). As a direct consequence, this study includes individual norms and the adoption and usage of IPPD systems. This is to help in determining whether group pressure has any relevance in individual users decision-making to utilize the system in the particular environment of Ministry of Medical Services, though Venkatesh *et al*. (2003) results found a positive consequence of individual norms on personal intention when the users were mandated to use IS, because having been made compulsory required users to find ways of overcoming difficulties of use.

The findings of Chen, Zeng, Atabakhsh, Wyzga & Schroeder (2003) revealed that PU per se may very well be the determining factor and have a considerable positive influence on user intent. Although, Rossi, Tuunainen, Oorni (2006) postulated that PU's impact on intention is not independent of situations that an IPPD is being utilized, whereas both constructs are the main influencers relating to attitude and beliefs regarding individuals intentions to use technology. Research by Wu *et al.,* (2005) revealed that PEOU and PU were important in implementation of an IPPD system since they had a direct effect on the use of technologies. In the Malaysian context, for instance, studies on the use of technology have established that both the PEOU and PU are not only important in influencing the choice of not only whether to accept technology in addition to determine whether to utilize that technology (Ramayah & Jantan, 2004; Ramayah & Ignatius, 2005; Ramayah, Ignatius *and* Aafaqi, 2005; Guriting &Ndubisi, 2006; Ramayah, 2006a, 2006b;).

TAM places greater significance of PU above PEOU as the main indictor of technology adoption. A lot of research, tracing it from the early years of Bagozzi, David &Warshaw (1999), have been unable to find a positive correlation between PEOU and technology utilization, and as a result relegating PEOU to the position of something like that of a "step-child" (Venkatesh *et al.*, 2000). Gefen & Straub (2000), propose that, given that in a lot of instances the new system is accepted due to the external aspects which is manifested via PU and not its inherent aspects, PEOU therefore impacts the usage of the inherent attributes of the system contributing to the true result of its application.

2.3.4 Impact of Perceived Usefulness on IPPD Success

In an IPPD implementation, understanding the logical flow of the business processes across the organization is important for assisting the users adapt to changes in their tasks. Users will persist in their endeavors to achieve their purpose if it is useful and significant to them, even if an application or its documentation is complex to use (Ceaparu *et.al.,* 2004.) Contrary to the original TAM, which implied that the impact of extrinsic factors should be channeled via both constructs, their outcomes showed a positive correlation between experiences gained and usage; which was the next greatest influence after PU.

The greater the suitability of the IPPD system to exist within the organization including the work ethics of users, the higher the probability for acceptance. Agarwal & Karahanna (2000) emphasized this in a technology research linking the significance of this operational aspect of compatibility. This is especially helpful when influencing attitudes and beliefs about PU and PEOU and ultimately the adoption of the system. The authors above suggested accordingly that firms seeking to implement IPPD systems need to be aware of the compatibility of the related workflow powered by the IPPD and the users' current and preferred work ethics.

Users will persist in their endeavors to accomplish a goal if it is useful and significant to them, even if a system or its training guide is challenging to use. TAM research also portrays that PEOU of technology affects its PU. Users that perceive technology in general to be difficult to use will rationalize that it is not useful (Mosbeh & Soliman, 2008). The proponents of self-image argue that the utilization of new technology at the workplace helps the user project a positive self-image. As a result, the user's positive reflection among the superiors is sufficient to attract their attention for career advancement. Therefore, the greater the perception of IPPD as a predictor of positive self-image the higher the chances it will be utilized within the organization. The results of this study are in tandem with Venkatesh *et al.* (2003) who established a direct correlation between the PU and self-image.

Perceived usefulness remains fundamental in influencing the acceptance of IPPD systems. This is critical to note especially because many employees highly rate performance and career oriented objectives and therefore result in positive work ethics. Research by Karahanna and Straub (1999) states that at the stage of pre-adoption, the outlook of the users is strongly dependent on a structure of multi-facets beliefs, while the stage of post-adoption is fully prejudiced by instrumental beliefs of utility and image.

It is noted that PU, technological literacy and technological support are major influencers of IS usage in firms. In fact, the correlation between PU on IS usage has been discussed in numerous earlier studies. Organizations, with sound management who have good insight regarding the value of the IPPD, have tended to realize benefit more than those with low PU of the IPPD. In addition, technology that seems to have a high PU are foreseen as being necessary, as recommended by the positive correlation existing PEOU and PU. An indirect relationship exists between PEOU and usage via PU, implying that the PEOU per se does not have a bearing on system usage, unless the IPPD systems are judged as easy to use and also termed useful.

The significance of technological skills and IT support towards shaping IS usage is outstanding. Both technological skills and IT support have a direct impact on usage of technology, directly and indirectly via PU and PEOU. The impact continues to be experienced throughout the firm as it continues to progress in general computing skills and as long as the support provided by IT or consultants is continuously given to users thereby ensuring the usage of technology will be continuously improved within the firm. (Mosbeh & Soliman, 2008).. Besides, the persona-system attributes PEOU and PU are supported by technological skills and IT support. The constructive relationships between the anchors and user perceptions are important for two reasons. First and foremost, as the user gets more skilled in accomplishing the task, the easier the work load becomes and the more positive the attitude and appreciation of the benefits of performing the task. Secondly, when users receive support from an expert, over time this increases the users knowledge and even difficult tasks become easier to accomplish and therefore the user has a better chance of appreciating the importance of the task. (Ceaparu *et al.,* 2004).

2.4 Attitude and the Adoption of IPPD

This section presents literature on attitude and the adoption of IPPD that is relevant to the study.

2.4.1 Theoretical Perspectives on Attitude

The studies relating to the behavior aspects of technology usage and realization are majorly about the effect of attitude on computers. Ajzen & Fisbein (1980) developed the TRA that perceives an individual's intention to behave in a particular manner as the direct contributor of the action. (Bagozzi *et al.*, 1999) defined attitude as defined as an individuals' positive or negative bias towards an object. Individual attitudes are fundamental to the behavioral theory, as they are viewed to be important indicators of human behavior. The studies relating to attitudes in the usage of technology continue as shown in research by Pare & Elam (1995) & Harris (1999). According to Igbaria & Iivaria (1995), user attitudes had a direct effect on the usage of technology by end-users. Rainer & Miller (1996) postulated that attitudes regarding computers have an effect on users' intentions that result in the actual utilization of the technology. The earlier studies on TAM that have researched on the effect of attitude on IT utilization included the study by Taylor *et al.*, (1995).

Computer attitude is advanced originally in TAM, nonetheless, a revision of TAM by Davis *et al.* (1999) carried out in a relaxed work environment showed that the descriptive aspect of TAM is just as important and it is more conservative without the mediating attitude construct. Subsequent to that, the attitude construct was excluded from the TAM. Studies carried out later on TAM indicate that attitude continues to act as a mediator in influencing mandatory usage; although its' direct correlation to intentions was not endorsed by Jackson *et al*., (1997).

According to Jackson *et al.*, (1997) "Computer attitude, like many behavioral constructs, would be a required but not satisfactory condition for a successful implementation of technology" (p. 383). This view is supported by Davis *et al.* (1999) who assert that when other factors e.g. PU per se is taken into account, computer attitude may not influence strongly the behavioral intentions in the work environment. This reasoning is supported by the fact that in the work environment, performance is considered vital and the intentions will be rated based on performance and not on individual preferences with regard to formation of behavior. (Taylor *et al*.,

1995).

2.4.2 Shared Beliefs and Attitude

In a study related to implementation of IPPD systems in the US, Amoako-Gyampah & Salam (2004) argued that users who will be involved in the implementation process should be identified from different levels in an organization. Therefore for an organization to successfully achieve this, mutual trust and a sense of commitment requires to be nurtured between the various users. According to Amoako-Gyampah & Salam (2004), the belief shared regarding the envisaged benefits of the system are important in allowing the users find a common ground and develop a united purpose. Shared beliefs are often the basis for which attitude is formed. As a result, studying the process under which beliefs are constructed provides opportunities to understand how they are formed and can be intervened for purposes of shaping the beliefs. It is important to note that this is especially important in comprehending behavioral intentions with respect to introducing new technology (Amoako-Gyampah & Salam, 2004).

Within the framework of the above study, shared beliefs are defined as the beliefs that different stakeholders within an organization champion amongst their peers and managers regarding the importance of the system. Amoako-Gyampah & Salam suggest that team leads who play a facilitation role and encourage transfer of knowledge through continuous communication to within their reporting lines, act as catalysts in environments where change is experienced as a result of new technology which is introduced. According to Karahanna & Straub (1999), factors that affect the belief constructs of PU and PEOU have been ignored in many studies. The study by Karahanna and Straub (1999) explores the effect of shared beliefs on PEOU and PU of a particular system. In general, users in an organization expect positive results in the horizon when they share a common belief regarding the utility of the IPPD system.

Ardichvili, Page & Wentling (2004) proposed that prior to users deciding on whether to engage or have a discourse with senior management, they try to anticipate and make predictions, based on their earlier experiences. Sharratt & Usoro (2003) cite that to effectively receive knowledge and understanding is through learning through trusted experts required for the circumstances, which would result in the acquisition of new found knowledge. Nevertheless, Van Beveren (2002) felt that for effective dissemination of information, a broad range of exchanges was required and the inherent complexities of the process of exchange may not necessarily result in the expected creation of knowledge. Therefore, knowledge sharing inherently necessitates the creation of new knowledge in the mind of the recipient of the exchange.

Amoako-Gyampah & Salam (2004) study evaluated the effect of shared beliefs on technology and two widely recognized critical success factors regarding implementation namely end-user training and organizational communication on PEOU and PU. The analytical results demonstrated that both training and project communication influence the shared belief formed by users regarding the benefits of the technology and also that the shared beliefs influence the PU and PEOU of the technology.

2.4.3 Relative Importance of Attitude on TAM

TAM had earlier put forward two constructs, known PEOU and PU, that both influence the attitudes of users towards a given system. It is such attitude coupled with PU that would consequently influence the intention to use technology and additionally, result in actual system usage. Agarwal & Karahanna (2000) and Venkatesh *et al.* (2003) show that both constructs PEOU and PU affect intentions both directly and indirectly. Karahanna and Straub (1999) report that pre-adoption attitudes of employees are determined primarily by normative pressures and post-adoption attitudes. These are based almost exclusively on beliefs of usefulness and image enhancement. Attitudes are said to develop over time through a learning process affected by reference group influences, past experience and personality (Assael, 1992, p.183). Au &Enderwick (2000) continue that the more experience a consumer has about technology, the better understanding the consumer will have about new technologies. Thus, a better understanding of technology allows the consumer to better appreciate the added value brought by new technological improvements. The studies in the behavioral characteristics regarding technology usage and realization fully document the effect of users' attitude on computers.

It has been observed that environments where IPPD usage is mandatory, user attitude has been known to have a strong relationship with the behavior regarding usage. In this work environment, "the only option that exists for a user in the event that they have no reason to leave the firm is to embrace the technology wholeheartedly (Leonard-Barton, 2000). Users who have not totally embraced the IPPD can slow down or stall the implementation, and avoid, work-around, or sabotage the IPPD. Massey, Montoya-Weiss and Burkman (2004) propose that such responses are as a result of attitude (negative or positive) that users will develop in relation to technology. At the workplace where technology usage is mandatory, user attitude is most likely to take be keenly monitored and therefore necessitating greater attention.

2.4.4 Management Strategies to Change Attitude for a Successful IPPD Implementation

In an effort to positively influence the attitudes of potential IPPD users, senior management should attempt to change their cognitive component. Of paramount importance is to have a communication strategy in place. A lot of the time, IPPD system implementations have failed due to poor communication (Al-Mashari & Zairi, 2000).

Another communication strategy is to give a general description of how the implemented IPPD system will work. Teaching each of the various user groups how the IPPD system works is important in creating awareness (Stratman & Roth, 1999). In general, the communication team responsible for developing the communication strategies must possess adequate political skills so as to be able to shape the thinking of the user community and ensure that the awareness stage is successfully executed to completion.

It has been found necessary to influence the There is need to influence the emotional aspect of users' attitudes. First and foremost this can be managed through cost minimization. Porter (2004) asserts that a low-cost strategy can be used to help a firm thrive in an environment of intense competition. He further argues that this strategy can provide meaningful results for IPPD. For the management to ensure that the IPPD system is adopted by users, and then it is prudent for the users' adoption costs to be kept at a bare minimum. In addition if the agents of change convince the IPPD users that the net effect of the implementation will be positive, then the users will be influenced to adopt a positive attitude towards accepting the IPPD (Amoako-Gyampah &Salam, 2004).

Differentiation as another additional strategy has been known to have a positive effect on the attitude towards adoption of potential users. User-training provides a good opportunity to enable them accept the system and the changes that it will potentially introduce, and as such a positive attitude is cultivated towards the system. In addition, user training provides a much needed hands-on experience that result in a greater appreciation of the functions and features of the system, and its potential benefits. The first strategy that should be adopted is to gain the endorsement and buy-in of well-respected individuals and opinion leaders. Lazarus (1999) provides the senior management a clear rule stipulating that an IPPD system should not be introduced when and until a positive attitude (individual intention to accept) has been developed and sustained over time among potential users.

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers a description of the overall research methodology. This includes the study design, target population, sample design, methods of data collection, and procedures for research and data analysis methods.

3.2 Research Design

According to Brown, Askew, Baker, Denvir & Millett (2003), research design provides the glue that holds the research project together. A design is used to structure the research, to show how all of the major parts of the project, which include the samples or groups, measures, treatments or programs, and methods of assignment that work together to try to address the central research questions. For purposes of this study, a case study research design was used. Yin (2004) describes this as an empirical inquiry that of a modern phenomenon looking into a real-life situation; especially in the event that the divide between the two are not obvious and there exists multiple sources of evidence. A case study generally aims to provide insight into a particular situation and often stresses the experiences and interpretations of those involved. It may generate new understandings, explanations or hypotheses. However, it does not usually claim representativeness. Therefore, researchers using case studies should be careful not to over-generalize (Ball, 2004). Case studies involve collecting empirical data, generally from one or a small number of cases. It usually provides rich detail about those cases, of a predominantly qualitative nature (Yin, 2004).

Hamel, Dufour &Fortin (2003) argue this research is very useful when bringing researchers to gain a better understanding of challenging issues and as a result contribute to the existing body of knowledge from previous research. According to Eisenhardt (2004), "case studies highlight in-depth analysis of content exhibited by relatively few numbers of occurrences or circumstances and their correlation. A number of renowned case study researcher's e.g. Stake (2005), Simons (2003) & Yin (2004) use certain methods for carrying out their work successfully. This particular case study research calls upon their work and suggests six steps that are used namely to understand and determine the research questions, choose the studies and present techniques for data collection and analysis, collect field data collection, evaluation and analysis of data, and preparation of the final report.

The major challenge expected in using the case study approach is that the researcher is required to have excellent knowledge of the topic when designing questions. The researcher approaches the subjects of study with an inquisitive mind and an openness that permits subjects to respond in an unlimited number of directions. This less structured approach may take the researcher down avenues he did not anticipate traveling and open doors to new kinds of understanding.

3.3 Population of the study

The study focused on Ministry of Medical Services. The population of interest was the employees of the company who are current users of the Systems Applications Product (IPPD) IPPD, whose number stood at 200

as at 31st December 2012. The respondents were drawn from the three categories of staff as presented in the organizational structure - Heads of departments, Managers and Supervisors.

3.3.2 Sampling Design

3.3.2.1 Sampling Frame

This is defined as a source list that enables a study population to be drawn. A list of the staffs of Ministry of Medical Services who were using the IPPD as at 30th June 2012 was obtained from the ICT department.

3.3.2.2 Sampling Technique

Purposive sampling design was used to select Heads of Sections in the Human Resources department to participate in the study. Neuman (2000) noted that purposive (judgemental) sampling is used to select respondents that are particularly informative enough to respond to the research questions and enable effective attainment of the research objectives. Accordingly, all the Heads of sections participated in the study. In addition, stratified random sampling was used to select a representative sample of IPPD users from amongst the human resources department employees.

3.3.2.3 Sample Size

Cooper & Schindler (2000) assert that the researcher must clearly define the characteristics of the population, determine the required sample size and choose the best method for selecting members of the sample from the larger population in order to ensure that the sample accurately represents the population. Accordingly, the sampling process took place in two stages. In the first stage, all the Heads of sections were selected using purposive sampling. In the second stage, a representative sample of respondents was selected from amongst the remaining IPPD users with the aid of stratified sampling. A listing of all the users was drawn and from each of the human resources sections, 50% of the population was selected to from the sample, giving a sample size of 75 respondents.

3.4 Data Collection Methods

Both primary and secondary data were collected. Secondary data was collected in order to ensure relevance to the research problem and eliminate duplication of what has been done and provide a clear understanding of existing knowledge base in the problem area. The sources of secondary data included authoritative, recent, and original sources such as journals, books, thesis and dissertations. Primary data was collected using a semi-structured questionnaire. A self-administered questionnaire was used since the level of understanding of the questions by the respondents was expected to be relatively high. The questionnaire was considered effective since it is not time consuming, considering that all respondents are based at the head office in Afya House, Nairobi.

3.5 Research Procedures

The semi-structured questionnaire used to collect data was structured into four sections. Sections A, B and C covers items pertaining to the specific objectives of the study namely:-Perceived Ease of Use, Perceived Usefulness and Attitude while section D covers the profile of the respondents. The questionnaires were pilot tested on ten randomly selected respondents before they were administered. The purpose of the pilot testing was to ensure that the questionnaires were understood in their correct perspective, in order to meet the research objectives. The procedure that was used in collecting data was through distribution of the questionnaires that is, dropping and picking questionnaires from respondents at their most convenient time that was agreeable to both parties. A letter of introduction, which stated the purpose of the study, was attached to each questionnaire. In addition, the researcher made telephone calls to the respective respondents to make follow up on the questionnaires that were delivered to the respondents. Once completed, the researcher personally collected the questionnaires. This gave the researcher the opportunity to clarify certain issues arising from the various responses.

3.6 Data Analysis Methods and Presentation

Data analysis involved preparation of the collected data - coding, editing and cleaning of data so that it would be processed using SPSS package. The coded data was keyed into the SPSS program where it was developed into a database and hence analyzed. The data pertaining to profile of the respondents and their respective organizations was analyzed using content analysis while data pertaining to the objectives of the study was analyzed by employing descriptive statistic. Descriptive statistics were used to describe the basic features of the data in the study. Together with simple graphics analysis, they formed the basis of virtually every quantitative analysis of data. Descriptive statistics help to simplify large amounts of data in a sensible way. Each descriptive statistic reduces lots of data into a simpler summary. Presentation of the information was done using frequency tables and percentages.

4.0 FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter covers the data analysis, presentation and interpretation of primary data collected. A case of the Ministry of Medical Services was undertaken and primary data were obtained from employees of the human resources department who currently use the IPPD. Out of the 75 questionnaires that were distributed, 61 were returned completed, (81%) return rate.

4.2 Demographic Data

This section presents the profile of the respondents. The section covers brief information on gender distribution; age of respondents, the period of time the respondents had worked in the Ministry of Medical Services, the highest level of education attained and their respective roles in IPPD implementation.

4.2.1 Gender distribution of the respondents

The respondents were asked to indicate their gender. The responses are summarized and presented in figure 4.1 below.

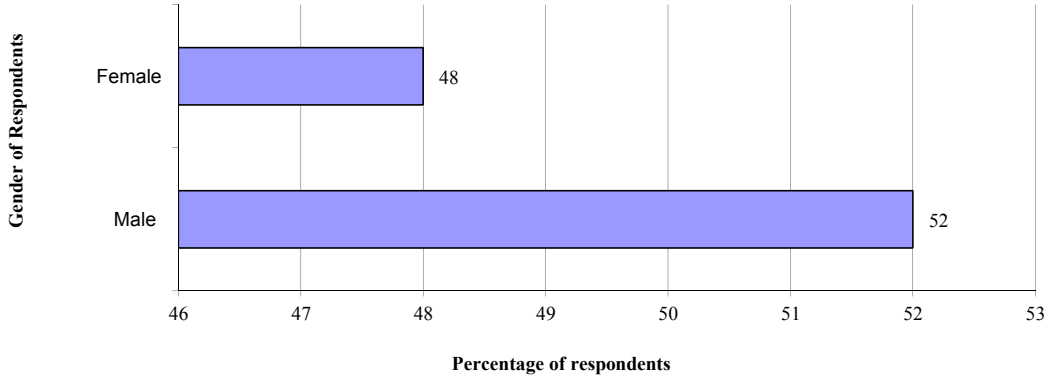


Figure 4.1: Gender distribution of the respondents

The responses show that out of the 61respondents, 52% were male while 348% were female.

4.2.2 *Age Distribution*

The respondents were asked to indicate the age bracket to which they belonged by ticking as appropriate against given alternatives. The responses are summarized and presented in figure 4.2 below.

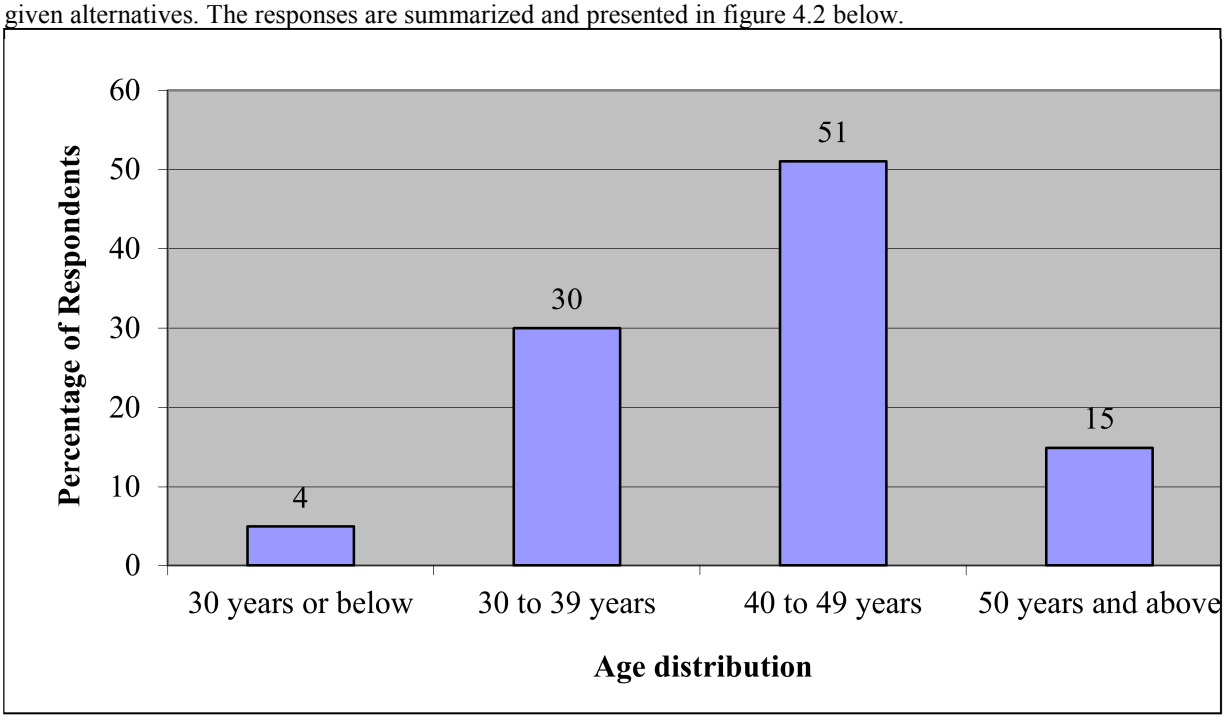


Figure 4.2: Age Distribution of Respondents

The responses in figure 4.2 highlight that majority (51%) were aged between 40 and 49 years. Whereas only 4% of the respondents were 30 years or below, 30% were aged between 30 and 39 years and 15% were aged 50

years and above.

4.2.3 Period of Service at Ministry of Medical Services

The respondents were asked to indicate the time period they had been in employment in the Ministry of Medical Services. Figure 4.3 below presents a summary of responses pertaining to the number of years of service by employees in the ministry.

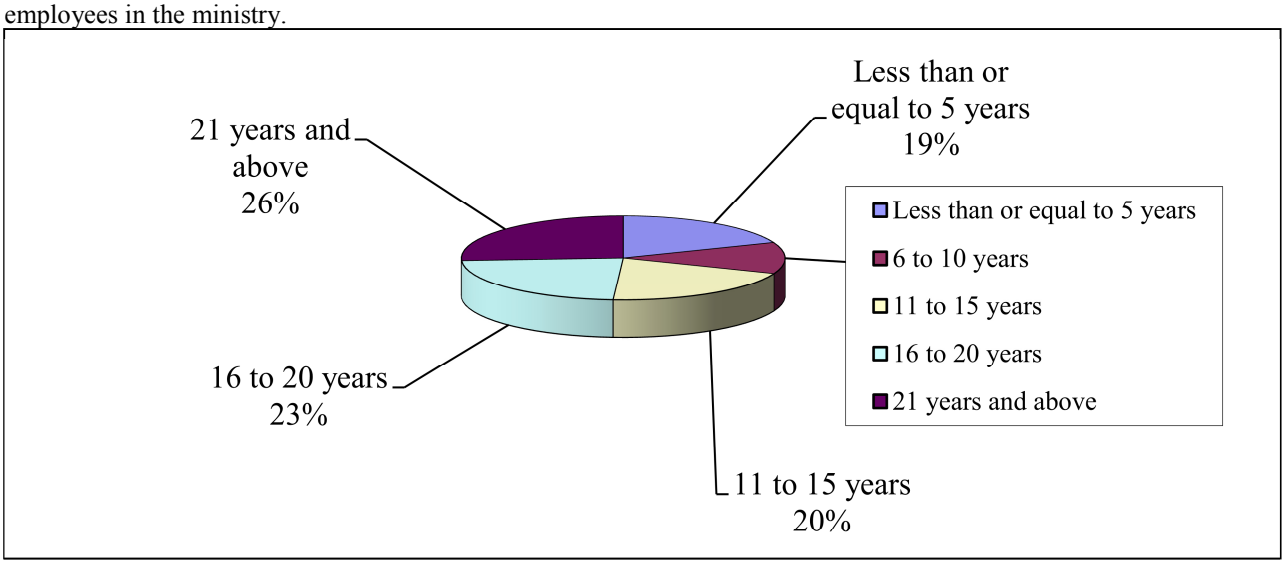


Figure 4.3: Period of Service at the Ministry of Medical Services

The findings show that whereas 19% of the respondents had worked in Ministry of Medical Services for a period of less than or equal to 5 years, 12% had worked for Mumias between 6 and 10 years, 20% had worked for Mumias between 11 and 15 years, 23% of the respondents had worked for the company for between 16 and 20 years and majority (26%) of the respondents had worked for the company for 21 years and above.

4.2.4 Highest Level of Education Attained

The respondents were asked to indicate the highest level of education they had attained. The responses in summary are presented in figure 4.4 below.

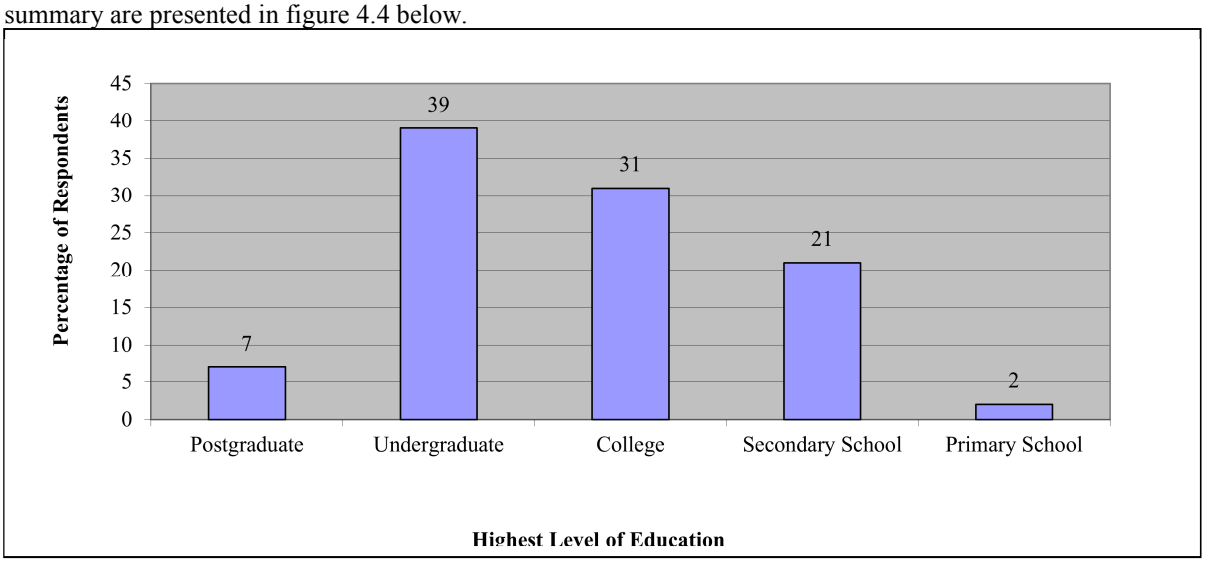


Figure 4.4: Highest Level of Education Attained

The responses in figure 4.5 show that majority (39%) had Undergraduate degrees, 31% had a college education, 7% had attained Postgraduate degree, 21% had secondary school education and 2% had attained primary school education.

4.2.5 Role of Respondents in the IPPD Implementation

The respondents were asked to indicate their respective roles in the IPPD implementation. The responses are summarized and presented in figure 4.5 below.

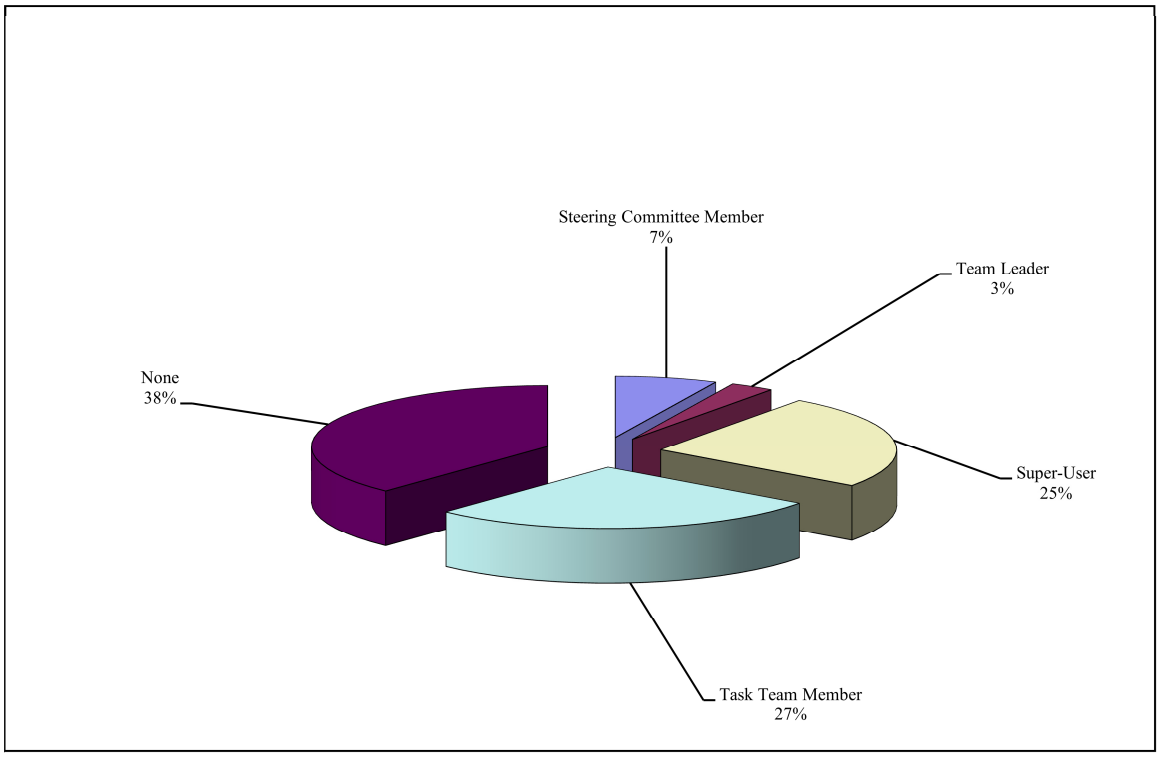


Figure 4.5: Role of Respondents in the IPPD Implementation

The responses in figure 4.5 above show that while 7% of the respondents were steering committee members, 3% were team leaders, 25% were super – Users, 27% were task team members and 38% did not have any role in implementation of the IPPD.

4.3 The Role of Perceived Ease of Use (PEOU) of IPPD in its Adoption.

This section presents the findings on the role of perceived ease of use of IPPD in its adoption. In order to meet the first objective of the study, "to establish the role of perceived ease of use (PEOU) of IPPD in its adoption in the Ministry of Medical Services", the respondents were asked various questions, whose responses are presented below.

4.3.1 Previous Computer Experience

The respondents were asked to indicate whether they had any previous computer experience. The responses are summarized and presented in figure 4.6 below.

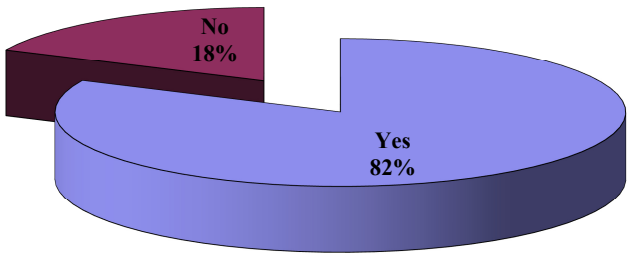


Figure 4.6: Previous computer experience

The responses in figure 4.6 show that whereas 82% of the respondents had previous computer experience, 18% did not have previous experience. The respondents were further asked to indicate whether they knew what IPPD system is. The responses show that all the 61 (100%) respondents knew what IPPD was.

4.3.2 Previous Experience with other Systems/Applications other than IPPD

The researcher sought to establish whether the respondents had any previous experience with systems/applications other than IPPD. The responses in summary are represented in table 4.1 below.

Table 4.1: Previous experience with other systems/applications other than IPPD

		Frequency	Percent	Cumulative Percent
Responses	Yes	41	67.2	67.2
	No	20	32.8	100.0
	Total	**61**	**100.0**	

The responses in table 4.1 show that whereas 67% of the respondents had previous experience with systems/applications other than IPPD, 33% indicated that they did not have previous experience in other systems.

4.3.3 Current users of IPPD

The respondents were asked to indicate whether they were current users of IPPD. The responses in summary are represented in table 4.2 below.

Table 4.2: Current users of Systems Applications Product IPPD

		Frequency	Percent	Cumulative Percent
Responses	Yes	60	98.4	98.4
	No	1	1.6	100.0
	Total	**61**	**100.0**	

The above table shows that 98% were current users of the IPPD. Whereas 2% indicated that they were not using the system.

4.3.4 Time Period Respondents had used IPPD

The respondents were asked to indicate the time period they had been users of IPPD. The responses are summarized and presented in table 4.3 below.

Table 4.3: Time Period Respondents had used Systems Applications Product

		Frequency	Percent	Cumulative Percent
Responses	Below 6 months	2	3.3	3.3
	Between 7 and 11 months	5	8.2	11.7
	Between 12 and 16 months	7	11.5	23.3
	Between 17 and 21 months	7	11.5	35.0
	Above 22 months	39	63.9	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.3 show that 3% have been using the IPPD for below 6 months, 8% have been using for between 7 and 11 months, 12% have been using between 12 and 16 months, and also those between 17 and 21 months were 12% and 65% had used for above 22 months. The respondents were further asked to indicate how often they used IPPD in their work. While some of the respondents used IPPD in their work as need arose, others used it in periodic audits.

4.3.5 Numeric Value Corresponding to Respondents' Personal Opinion on Ease of Use of IPPD

The researcher sought to establish the numeric value corresponding to personal opinions of the respondents with regards to various IPPD attributes by asking the respondents to tick as appropriate along a five-point likert - scale. The responses are summarized and presented in the tables below.

Ease of Use of IPPD

Table 4.4 below presents a summary of the respondents' opinions "to the statement, "IPPD is easy to use".

Table 4.4: IPPD is Easy to Use

		Frequency	Percent	Cumulative Percent
Responses	Disagree	1	1.6	1.7
	Agree	39	63.9	66.7
	Strongly agree	20	32.8	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.4 show that whereas 2% disagreed IPPD is easy to use with various attributes, 65% agreed and 33% strongly agreed it was to use various attributes.

Comfort Level when Using IPPD

The respondents were asked to indicate whether they were feeling comfortable using IPPD. Below is the summarized responses are summarized and presented in table 4.5 below.

Table 4.5: **Comfort Level when Using IPPD**

		Frequency	Percent	Cumulative Percent
Responses	Not sure	2	3.3	3.4
	Agree	35	57.4	62.7
	Strongly agree	22	36.0	100.0
	Total	59	96.7	
	Missing	2	3.3	
Total		**61**	**100.0**	

The responses in table 4.5 show that whereas 3% of the respondents were not sure whether they were comfortable using IPPD, 57% agreed to be comfortable while 36% strongly agree to be comfortable.

User-Friendliness of IPPD

The researcher sought to establish whether the Systems Applications Product IPPD was user friendly. The summarized responses are presented in table 4.6 below.

Table 4.6: User-Friendliness of IPPD

		Frequency	Percent	Cumulative Percent
Responses	Not sure	2	3.3	3.4
	Agree	35	57.4	62.7
	Strongly agree	22	36.0	100.0
	Missing	2	3.3	
Total		**61**	**100.0**	

The responses in table 4.6 above show that 3% were not sure whether IPPD was user friendly, whereas 59% agreed and 37% strongly IPPD is user friendly.

Speed of IPPD transaction processing

The respondents were asked to indicate whether IPPD transaction processing is fast. The summarized responses are presented in table 4.7 below.

Table 4.7: Speed of IPPD transaction processing

		Frequency	Percent	Cumulative Percent
Responses	Not sure	10	16.4	16.7
	Agree	31	50.8	68.3
	Strongly agree	19	31.1	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.7 show that 17% were not sure whether IPPD transaction processing is faster, 52% agreed, and 31 % strongly agreed IPPD transaction processing is fast.

IPPD Support

The researcher sought to establish whether the respondents were able to get support while using IPPD. The responses are summarized and presented in table 4.8 below.

Table 4.8: IPPD Support

		Frequency	Percent	Cumulative Percent
Responses	Disagree	2	3.3	3.3
	Not sure	1	1.6	5.0
	Agree	45	73.8	80.0
	Strongly agree	12	19.7	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.8 above show that 3.3% disagreed 2% were not sure, 75% were not sure whether IPPD transaction processing is faster, 5agreed and 20% strongly agreed to be getting support in while using IPPD.

4.4 The Effect of Perceived Usefulness (PU) of IPPD on its Adoption

This section presents the findings on the effect of perceived usefulness of IPPD on its adoption. In an effort to fulfill the second objective of the study, "to evaluate the effect of perceived usefulness (PU) of IPPD on its adoption in the Ministry of Medical Services", the respondents were asked various questions, whose responses are presented below.

4.4.1 Usage of the Manual System Prior to IPPD

The respondents were asked to indicate whether they were using the legacy (old) system prior to IPPD. The responses are summarized and presented in figure 4.7 below.

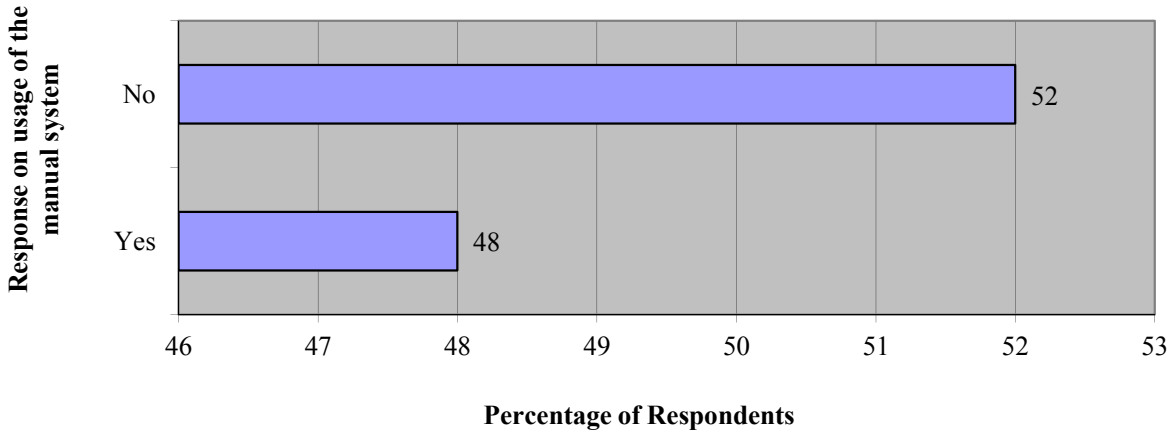


Figure 4.7: Respondents' Usage of the Manual System Prior to IPPD

The responses in figure 4.7 above show that 48% were using the legacy (old) system prior to IPPD whereas 52% were not.

4.4.2 Type of User of IPPD

The researcher sought to establish what type of user the respondents were in Systems Applications Product IPPD. The responses are summarized and presented in table 4.9 below.

Table 4.9: Type of User of IPPD

		Frequency	Percent	Cumulative Percent
Responses	Transaction Processing User	31	50.8	51.7
	Approver	23	37.7	90.0
	Information User	3	4.9	95.0
	ICT Support	3	4.9	100.0
	Missing	1	1.6	
	Total	**61**	**100.0**	

The responses in table 4.9 indicates that 52% were transaction processing user, 38% were approved users, 5% were information users and also 5% ICT support users of IPPD.

4.4.3 Importance of Use of IPPD in respondents' Careers

The respondents were asked to indicate whether the use of IPPD was important in their career of MOMS. . The responses are summarized and presented in table 4.10 below.

Table 4.10: Importance of Use of IPPD in respondents' Careers

		Frequency	Percent	Cumulative Percent
Responses	Yes	42	68.9	70.0
	No	18	29.5	100.0
	Missing	1	1.6	
	Total	**61**	**100.0**	

The responses in table 4.10 show that whereas 70% of the respondents said IPPD was important to their career in MOMS, 30% said no.

4.4.4 Frequency of Usage of IPPD

The researcher sought to establish how often the respondents use IPPD in their work. The responses are summarized and presented in table 4.11 below.

Table 4.11: Frequency of Usage of IPPD

		Frequency	Percent	Cumulative Percent
Responses	Daily	44	72.1	74.6
	Weekly	10	16.4	91.5
	Monthly	5	8.2	100.0
	Missing	2	3.3	
	Total	**61**	**100.0**	

The responses in table 4.11 above show that 75% were using IPPD on daily basis, 17% on weekly base, whereas 8% on monthly base.

4.4.5 Numerical Value Corresponding to Respondents' Personal Opinion on Perceived Usefulness of IPPD

The researcher sought to establish the numeric value corresponding to personal opinions of the respondents with regards to various IPPD attributes by asking the respondents to tick as appropriate along a five-point likert - scale. The responses are summarized and presented in the tables below.

Convenience of IPPD compared to Old System

The researcher sought to establish whether using IPPD convenient is compared to the old system. The responses are summarized and presented in the table 4.12 below.

Table 4.12: Convenience of IPPD compared to Old System

		Frequency	Percent	Cumulative Percent
Responses	Not sure	17	27.9	28.3
	Agree	28	45.9	75.0
	Strongly agree	15	24.6	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.12 above shows that 28% were not sure whether using IPPD is convenient compared to the manual (old) systems, 47% agreed and 25% strongly agreed that it was convenient compared to the manual (old) systems.

Getting Information from IPPD compared to finding same information from another person

The researcher sought to establish whether it was a bother using IPPD to get information instead of finding the same from another person. The responses are summarized and presented in table 4.13 below.

Table 4.13: Getting Information from IPPD compared to finding same information from another person

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	1	1.6	1.7
	Disagree	2	3.3	5.1
	Not sure	27	44.3	50.8
	Agree	21	34.4	86.4
	Strongly agree	8	13.1	100.0
	Missing	2	3.3	
Total		**61**	**100.0**	

The responses in table 4.13 show that 2% strongly disagreed, 3% disagreed, 46% were not sure, 36% agreed while 14% strongly agreed it did not bother them to use IPPD to get information instead of finding the same information from another person.

The Opportunity to Try Various Functionalities and Access Information in IPPD apart from Respondents' Normal Work

The respondents were asked to indicate whether they had opportunity to try various functionalities and access information in IPPD apart from their normal work. The responses are summarized and presented in table 4.14 below.

Table 4.14: Opportunity to Try Various Functionalities and Access Information in IPPD apart from Respondents' Normal Work.

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	4	6.6	6.7
	Disagree	27	44.3	51.7
	Not sure	11	18.0	70.0
	Agree	13	21.3	91.7
	Strongly agree	5	8.2	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.14 show that whereas 7% strongly disagreed, 45% disagreed, 18%, were not sure while 22% agreed and 8% strongly agreed having opportunity to try various functionalities and access information in IPPD apart from their normal work.

IPPDs' Enrichment of Respondents Work

The respondents were asked to indicate whether IPPD has added value to their work. The responses are summarized and presented in table 4.15 below.

Table 4.15: IPPDs' Enrichment of Respondents Work

	Response	Frequency	Percent	Cumulative Percent
Valid	Disagree	1	1.6	1.7
	Not sure	3	4.9	6.7
	Agree	30	49.2	56.7
	Strongly agree	26	42.6	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.15 indicates that 2% disagreed, 5% were not sure while 50% agreed and 43% strongly agreed IPPD has added value to their work.

Work Efficiency using IPPD

The respondents were asked to indicate whether IPPD has increased efficiency in my work. The responses are summarized and presented in table 4.16 below.

Table 4.16: Work Efficiency Using IPPD

	Response	Frequency	Percent	Cumulative Percent
Responses	Disagree	4	6.6	6.7
	Not sure	5	8.2	15.0
	Agree	22	36.1	51.7
	Strongly agree	29	47.5	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.16 show that 7% disagreed, 8% were not sure whereas 36% agreed and 46% strongly agreed IPPD has increased efficiency in their work.

Ability to perform most of the Job Functions Using IPPD

The researcher sought to establish how often the respondents use IPPD in their work. The responses are summarized and presented in table 4.17 below.

Table 4.17: Ability to perform most of the Job Functions Using IPPD

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	2	3.3	3.4
	Disagree	19	31.1	35.6
	Not sure	2	3.3	39.0
	Agree	17	27.9	67.8
	Strongly agree	19	31.1	100.0
	Missing	2	3.3	
Total		**61**	**100.0**	

The responses in table 4.17 show that 3% strongly disagreed, 31% disagreed, 3% were not sure whereas 28% agreed and 31% strongly agreed to perform most of their function using IPPD.

IPPD Usage in MOMS

The researcher sought to establish whether IPPD is used widely in the human resources department of MOMS. The responses are summarized and presented in table 4.18 below.

Table 4.18: IPPD Usage in MOMS

	Response	Frequency	Percent	Cumulative Percent
Valid	Disagree	1	1.6	1.7
	Not sure	25	41.0	44.1
	Agree	25	41.0	86.4
	Strongly agree	8	13.1	100.0
	Missing	2	3.3	
Total		**61**	**100.0**	

The responses in table 4.18 show that 2% strongly disagreed, 42% were not sure, whereas 42% agreed and 14% strongly agreed IPPD is used widely in MOMS.

Availability of IPPD

The researcher sought to establish whether IPPD is available most of the time. The responses are summarized and presented in table 4.19 below

Table 4.19: Availability of IPPD

	Response	Frequency	Percent	Cumulative Percent
Valid	Disagree	3	4.9	5.0
	Not sure	10	16.4	21.7
	Agree	35	57.5	80.0
	Strongly agree	12	19.6	98.3
	Missing	1	1.6	
Total		**61**	**100.0**	

The responses in table 4.19 show that 5% disagreed, 17% were not sure, whereas 58% agreed and 20% strongly agreed IPPD is available most of the time.

4.5 The Impact of Individual Attitude towards the Adoption of IPPD

This section presents the findings on the impact of individual attitude towards the adoption of IPPD. In order to meet the third objective of the study, "to determine the impact of individual attitude towards the adoption of IPPD in the Ministry of Medical Services", the respondents were asked various questions, whose responses are presented below.

4.5.1 Respondents' trust in IPPD to Process Data Entered

The respondents were asked to indicate whether they trusted IPPD to be able to process accurately the data they had entered. All the respondents (100%) did indicate that they trusted IPPD to be able to process accurately the data they had entered.

4.5.2 Reliability of Information Retrieved from IPPD

The respondents were asked to indicate whether the information they retrieved from the IPPD was reliable. All the respondents (100%) did indicate that the information they retrieved from the IPPD was reliable.

4.5.3 Reliability of IPPD in Performance of Functions

The respondents were asked to indicate whether the IPPD was reliable and if they depended on it to perform their functions. All the respondents (100%) did indicate that the IPPD was reliable and that they depended on it to perform their functions.

4.5.4 Perceived Risks with using IPPD

The respondents were asked to indicate whether there are any perceived risks with using IPPD. The responses are summarized and presented in figure 4.8 below.

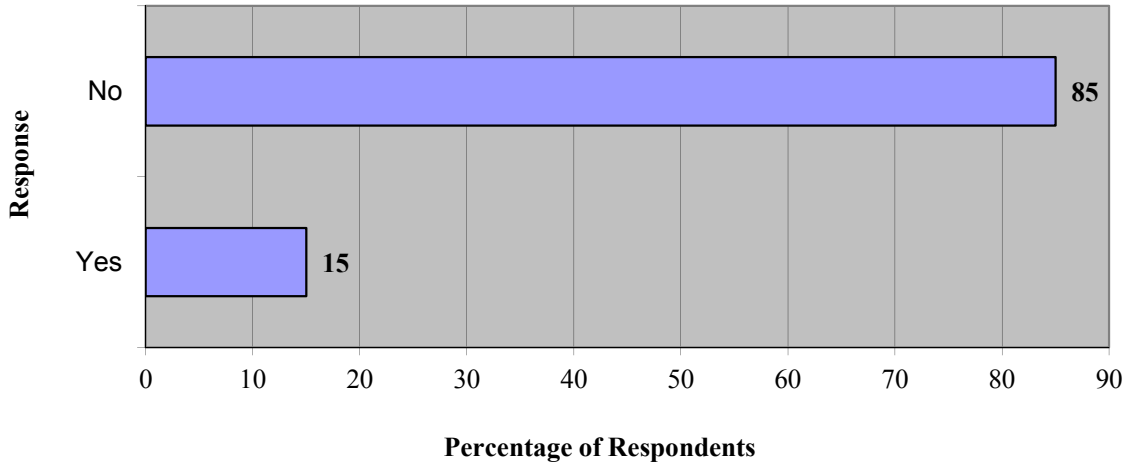


Figure 4.8: Perceived Risks with Using IPPD

4.5.5 Numerical Value Corresponding to Respondents' on Attitude on Usage of IPPD

The researcher sought to establish the numeric value corresponding to personal opinions of the respondents with regard to various IPPD attributes by asking the respondents to tick as appropriate along a five-point likert - scale. The responses are summarized and presented in the tables below.

Convenience of IPPD Compared to the Old Systems

The respondents were asked to indicate whether they perceived the IPPD to be convenient compared to the old systems. The responses are summarized and presented in figure 4.11 below.

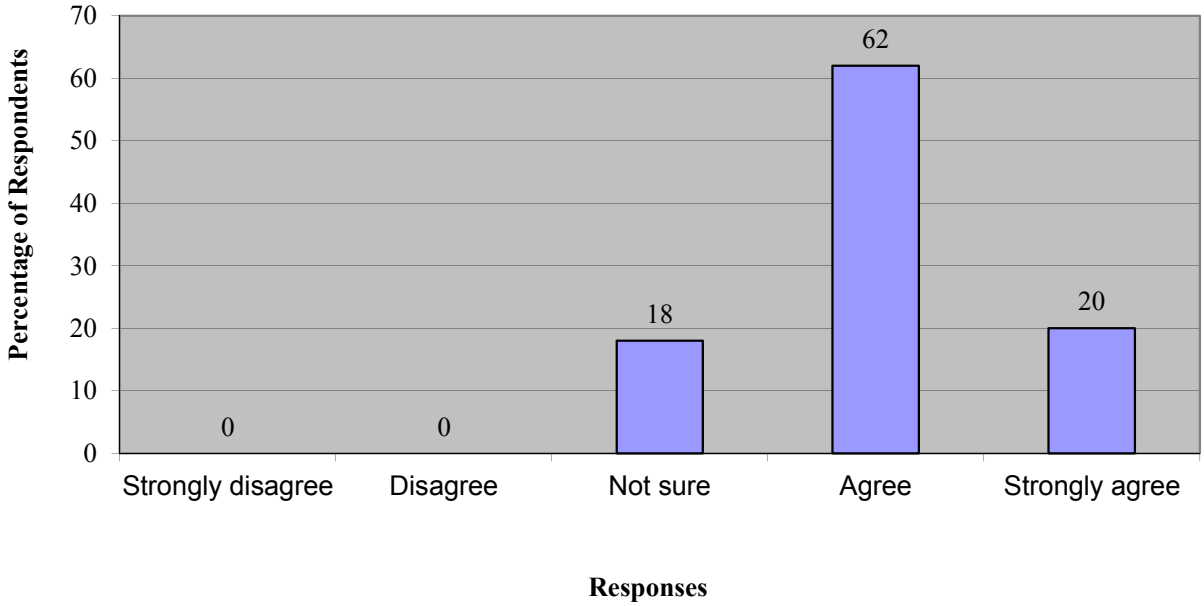


Figure 4.9: Convenience of IPPD Compared to the Manual (Old) Systems

The responses in figure 4.11 above show that while 20% of the respondents strongly agreed that using IPPD is convenient compared to the old systems, 62% agreed and 18% were not sure.

Use of IPPD to get Information Compared to finding the same information from Other Persons

In response to the statement, "It doesn't bother me to use IPPD to get information instead of finding the same information from another person", the responses are summarized and presented in table 4.20 below.

Table 4.20: Use of IPPD to get Information Compared to finding the same information from Other Persons

	Response	Frequency	Percent	Cumulative Percent
Responses	Disagree	2	3.3	3.3
	Not sure	18	29.5	33.3
	Agree	33	54.1	88.3
	Strongly agree	7	11.5	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The findings in table 4.20 above show that whereas 12% of the respondents strongly agreed with the statement, **"**It doesn't bother me to use IPPD to get information instead of finding the same information from another person", 55% agreed, 30% were not sure and 3% disagreed.

Embracing of Technology

In response to the statement, "I embrace technology", the findings are summarized and presented in table 4.21 below.

Table 4.21: Embracing of technology

	Response	Frequency	Percent	Cumulative Percent
Responses	Agree	25	41.0	41.7
	Strongly agree	35	57.4	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The findings in table 4.21 above show that in response to the statement, **"**I embrace technology", whereas majority of the respondents (58%) strongly agreed, 42% agreed.

Security and Confidentiality of Information Entered into IPPD

The responses to the statement**, "**the information that I enter into IPPD is secure and remains confidential are summarized and presented in table 4.22 below.

Table 4.22: Security and Confidentiality of Information Entered into IPPD

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	1	1.6	1.7
	Disagree	1	1.6	3.3
	Not sure	17	27.9	31.7
	Agree	31	50.8	83.3
	Strongly agree	10	16.4	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

Findings in table 4.22 above show that to the statement, **"**the information that I enter into IPPD is secure and remains confidential", 17% of the respondents strongly agreed, 52% of the respondents agreed, 28% of the respondents were not sure, 2% of the respondents disagreed and 2% strongly disagreed.

Dislike for Change

The responses to the statement, **"**I dislike changes in the way I carry out my work", are summarized and presented in table 4.23 below.

Table 4.23: Dislike for Change

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	44	72.1	74.6
	Disagree	11	18.0	93.2
	Not sure	1	1.6	94.9
	Agree	3	4.9	100.0
	Missing	2	3.3	
Total		**61**	**100.0**	

The findings in table 4.23 indicate that 75% of the respondents strongly disagreed with the statement, "I dislike changes in the way I carry out my work", 19% of the respondents disagreed, 2% were not sure and 5% agreed".

Confidence in Using IPPD

The responses to the statement, "I feel confident using IPPD for my work" are summarized and presented in table 4.24 below.

Table 4.24: Confidence in Using IPPD

	Response	Frequency	Percent	Cumulative Percent
Responses	Disagree	1	1.6	1.7
	Not sure	39	63.9	66.7
	Agree	20	32.8	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The findings in table 4.24 above show that whereas 2% of the respondents disagreed, 65% were not sure and 33% agreed.

Belief that Transactions Done Using IPPD are Correct

The responses to the statement, "I believe that transactions done using IPPD are correct" are summarized and presented in table 4.25 below.

Table 4.25: Belief that Transactions Done Using IPPD are Correct

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	1	1.6	1.7
	Not sure	2	3.3	5.0
	Agree	43	70.5	76.7
	Strongly agree	14	23.0	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The findings in table 4.25 above show that 23% of the respondents strongly agreed with the statement, "I believe that transactions done using IPPD are correct", 72% of the respondents agreed, 3% were not sure and 2% strongly disagreed.

The Belief that Many Transactions Cannot be Done by IPPD

The responses to the statement, "I feel that a lot of transactions cannot be processed by IPPD" are summarized and presented in table 4.26 below.

Table 4.26: Belief that Many Transactions Cannot be Done by IPPD

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	10	16.4	16.7
	Disagree	36	59.0	76.7
	Not sure	12	19.7	96.7
	Agree	1	1.6	98.3
	Strongly agree	1	1.6	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The findings in table 4.26 above show that 17% of the respondents strongly disagreed with the statement, "I feel that a lot of transactions cannot be processed by IPPD", 60% of the respondents disagreed, 20% were not sure, 2% strongly agreed and 2% agreed.

Dislike for Things that are Computerized

The responses to the statement, "I do not prefer things that are computerized" are summarized and presented in table 4.27 below.

Table 4.27: Dislike for things that are computerized

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	44	72.1	73.3
	Disagree	15	24.6	98.3
	Not sure	1	1.6	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The findings in table 4.27 above show that 73% of the respondents strongly disagreed with the statement, "I do not prefer things that are computerized", 25% disagreed and 2% were not sure.

Belief that Adequate Help cannot be found when Faced with Problems while Using IPPD

The responses to the statement, "I do not feel that I can get adequate help for a problem I face during the use of IPPD" are summarized and presented in table 4.28 below.

Table 4.28: Belief that Adequate Help cannot be found when Faced with Problems while Using IPPD

	Response	Frequency	Percent	Cumulative Percent
Responses	Strongly disagree	25	41.0	41.7
	Disagree	33	54.1	96.7
	Not sure	2	3.3	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The findings in table 4.28 above show that the responses to the statement, "I do not feel that I can get adequate help for a problem I face during the use of IPPD", were as follows: 42% of the respondents strongly disagreed, 55% of the respondents disagreed, 3% of the respondents were not sure.

4.5.5.4 Benefits Derived from Using IPPD

The responses to the statement, "I have derived many benefits from using IPPD" are summarized and presented in table 4.29 below.

Table 4.29: Benefits derived from Using IPPD

	Response	Frequency	Percent	Cumulative Percent
Responses	Not sure	1	1.6	1.7
	Agree	35	57.4	60.0
	Strongly agree	24	39.3	100.00
	Missing	1	1.6	
Total		**61**	**100.0**	

Findings in table 4.29 show that the responses to the statement, "I have derived many benefits from using IPPD", are as follows: 2% of the respondents were not sure, 58% of the respondents agreed and 40% of the respondents strongly agreed.

Importance of IPPD to the Overall Future of MOMS

The responses to the statement, "I feel that IPPD is very important to the overall future of MOMS" are summarized and presented in table 4.30 below.

Table 4.30: Importance of IPPD to the Overall Future of MOMS

	Response	Frequency	Percent	Cumulative Percent
Responses	Agree	21	34.4	35.0
	Strongly agree	39	63.9	100.0
	Missing	1	1.6	
Total		**61**	**100.0**	

The findings in table 4.30 above show that whereas majority (65%) of the respondents strongly agreed with the statement, "feel that IPPD is very important to the overall future of MOMS", 35% of the respondents agreed. The respondents were asked to make further comments on IPPD project implementation. Some of the comments made included: IPPD has made work easier; introduction of IPPD has enabled the users to handle work comfortable; the respondents suggested that the organization rewards those who participated in the implementation of IPPD since they had made a sacrifice; and IPPD is user-friendly and had made such operations as out of crop and end year activities easier. The next chapter presents the discussion, conclusions and recommendations of the study on the factors that affect the adoption of IPPD in the Ministry of Medical Services. The chapter also presents suggestions for areas of further studies.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter represents a synopsis of important elements of the study, including the purpose, specific objectives, methodology and finally the major findings of the study. The chapter also represents the discussion and conclusions drawn from the research findings on the factors that affect the adoption of IPPD in the Ministry of Medical Services. Finally, the chapter presents further work for further studies.

5.2 Summary

The purpose of the study was to determine the factors that affect the adoption of IPPD systems. The specific objectives of the study were: to establish the role of PEOU of IPPD in its adoption in the Ministry of Medical Services; to evaluate the effect of PU of IPPD on its adoption in the Ministry of Medical Services; and to determine the effects of individual perception towards the adoption of IPPD in the Ministry of Medical Services. The study focused on Ministry of Medical Services. The population of interest was the employees of the human resources department who are current users of the IPPD, whose number stood at 150 as at 30th June 2010. The

study utilized a combination of quantitative and qualitative techniques in the collection of primary and secondary data. A semi-structured questionnaire was the main data collection instrument. The researcher also used interview schedules with open ended questions, aimed at meeting the objectives of the study. Primary data was analyzed by employing descriptive statistics such as percentages and the averages. The statistical Package for Social Sciences (SPSS) was used as an aid in the analysis. The researcher preferred SPSS because of its ability to cover a wide range of the most common statistical and graphical data analysis. Computation of frequencies in tables, charts and bar graphs were also used in data presentation. The information was presented and discussed as per the specific objectives of the study.

With respect to the role of PEOU of IPPD in its adoption, the majority of the respondents (82%) had previous computer experience; 67% of the respondents had previous experience with systems other than IPPD and 98% of the respondents were current users of the System Applications Product (IPPD) IPPD. In addition, majority of the respondents, 65% had used for above 22 months, hence the ease of use of IPPD by the respondents. The numeric values corresponding to the respondents' personal opinion on ease of use of IPPD indicate as follows: Majority of the respondents, 98% were of the view that IPPD was easy to use with various attributes; 93% of the respondents had the feeling of comfort when using IPPD; 96% of the respondents indicated that IPPD was user friendly; 83% of the respondents indicated that IPPD transaction processing was fast; and 95% of the respondents indicated that they had the ability to get support when using IPPD.

The researcher sought to evaluate the effect of PU of IPPD on its adoption by comparing with the old system. The findings show that at least 48% of the respondents had used the old system prior to IPPD. The types of users of the IPPD amongst the respondents included transaction processing users (52%), approved users (38%), information users (5%) and ICT support users (5%). With respect to importance of IPPD in the respondents' careers, majority of the respondents (70%) indicated that it was important. Majority of the respondents (75%) were using IPPD on daily basis. With respect to numerical value corresponding to respondents' personal opinion on PU of IPPD: Majority of the respondents (72%) indicated that using IPPD is convenient compared to the Old Systems; 49% of the respondents indicated that it did not bother them to use IPPD to get information instead of finding the same information from another person; 30% of the respondents indicated that they had an opportunity to try various functionalities and access information in IPPD form their normal work; 93% of the respondents agreed that IPPD had added value to their work; 82% of the respondents indicated that IPPD had increased efficiency in their work; 59% of the respondents had the ability to perform most of the functions using IPPD; 56% of the respondents indicated that IPPD was widely used in Ministry of Medical Services; and 78% of the respondents indicated that IPPD was available most of the time. The average perception of PU is therefore approximately 73%.

Findings on the impact of individual attitude towards the adoption of IPPD are as follows: All the respondents (100%) indicated that they trusted IPPD to be able to process accurately the data they had entered. In addition, all the respondents (100%) indicated that the information they retrieved from the IPPD was reliable and that they depended on it to perform their functions. Majority of the respondents (85%) did not have any perceived risks in using IPPD. With respect to the numerical value corresponding to personal opinions of the respondents on their attitude on usage of IPPD, the findings were that : Out of the 62 respondents that participated in the study, 82% indicated that using IPPD is convenient compared to the old systems; 67% of the respondents indicated that it did not bother them to use IPPD to get information instead of finding the same information from other persons; all the respondents indicated that they like to make use of technology; 68 % of the respondents indicated that the information they entered into IPPD was secure and remained confidential; 93% of the respondents embraced change in the way they did things; 33% of the respondents had confidence in the use of IPPD; 95% of the respondents believed that transactions done using IPPD were correct; 77% of the respondents indicated that many transactions could be done using IPPD; 98% of the respondents indicated that they liked automation or computerization ; 95% of the respondents believed that they could get adequate help when faced with problems while using IPPD; 98% of the respondents indicated that they had derived many benefits from using IPPD; and all the respondents (100%) felt that IPPD is very important to the overall future of MOMS.

5.3 Discussions

This section represents a summary of the key findings of the study. The findings are as discussed below.

5.3.1 The role of Perceived Ease of Use (PEOU) of IPPD in its adoption

The key findings on the role of perceived ease of use (PEOU) of IPPD in its adoption are presented below.

Majority of the respondents had previous computer experience, with 67% of them having had previous experience with systems/applications other than IPPD, which include SUN systems and COBOL systems and were current users of the IPPD. Previous experience with other systems has, therefore, created a bias and comparison. The respondents were thus knowledgeable on systems. The findings are in line with the argument by Rogers (2003) that the characteristics of an innovation as perceived by the individual members of a social

system can help explain the different adoption rates for that innovation. According to Rogers, there are five characteristics that influence adoption, namely, the competitive edge (the fact that the innovation is perceived as being superior to the element it replaces: compatibility of the technology (with the organization's internal operations and systems); complexity of the technology (understandability and user-friendliness); and observability of its results and its trial ability.

Venkatesh *et al* (2003) asserts that for consumers without previous computer experience, or for those who believe that technology is difficult to use, adoption of these innovations may be thwarted. The findings also indicate that the majority (93%) of the respondents felt comfortable when using IPPD and that IPPD was user friendly. According to Dabholkar & Bagozzi, (2002), research evidence supports the consideration of personal contact and perceived risk. Wang *et al* (2001) asserts that consumers who do not feel comfortable with technology will have a greater desire for personal contact. The findings also show that IPPD transaction processing was fast and majority of the respondents had the ability to get support when using IPPD. Further, Venkatesh *et al.* (2003) noted that technology discomfort, the tendency of an individual to be uneasy, apprehensive, stressed or has anxious feelings about the use of technology is a similar construct to computer anxiety, a variable that has been found to have a negative effect on perceived ease of use. According to Hohmman (2003), usability has been applied to the design of everyday products, as well as entire software systems, including the user interface, supporting documentation and help system.

5.3.2 The effect of Perceived Usefulness (PU) of IPPD on its adoption

The findings show that a significant number of the respondents had used the old system prior to IPPD and the types of users of the IPPD amongst the respondents included transaction processing users, approved users, information users and ICT support users. However, information and IT support users constituted a total of only 10%, hence the need to put the system to more strategic than operational use. According to Agarwal & Karahanna (2000), the greater the PU of using the IPPD system, the more likely it is that IPPD system would be adopted. The findings are also in line with the study by Tan & Teo (2000) which indicates that PU is an important factor in determining the adaptation of innovations. Bhattacherjee (2002) asserted that a person's willingness to transact with a particular system is already considered as PU.

The findings also show that majority of the respondents indicated that IPPD in their careers and the respondents were using Systems Applications Product IPPD on daily basis. The findings are in line with the argument by Mathwick *et al* (2001) that the degree to which an individual believes that using a particular system would enhance his or her job performance. According to Amoako-Gyampah & Salam (2004), it is anticipated that the IPPD system would be adopted by users if they envisaged that the IPPD would support their desire to attain performance outcomes. Most of the users believe that IPPD boosts their careers and will enhance their job performance.

The findings also show that majority of the respondents (72%) indicated that using IPPD is convenient compared to the legacy (old) systems and that the system had added value to their work, besides increasing efficiency in their work. According to Venkatesh *et al*., (2003), technology adoption (or usage) decisions have been typically characterized by a strong productivity orientation. Agarwal & Karahanna (2000) emphasized that the higher chances that the IPPD will maintain the existing work environment of users the higher the likelihood it will be accepted. Agarwal and Karahanna further stressed that suitability of the IPPD system is important in determining the users' beliefs about PU and PEOU and eventually the acceptance of the technology.

The findings further show that majority of the respondents (59%) had the ability to perform most of the functions using IPPD and had the opportunity to try various functionalities and access information in IPPD form their normal work. According to Davis (2003), users that consider technology in general difficult to use will rationalize that it is not useful. According to Tan & Teo (2000), measures of PU of technology is considered in terms of increase in productivity, improvement in job performance, enhancement of job effectiveness and usefulness in the job. Rogers (2001) noted that the degree of relative advantage is often expressed as economic profitability, social prestige, and savings in time and effort, immediacy of the reward or as decrease of discomfort. Ceaparu *et al*. (2004) concludes that users will persevere in their attempts to reach a goal if it is useful and important to them, even if an application or its documentation is difficult to use.

5.3.3 The effects of individual attitude towards the adoption of IPPD

The findings with respect to effects of individual attitude towards the adoption of IPPD show that all respondents trusted IPPD to be able to process accurately the data they had entered and that the information they retrieved from the IPPD was reliable and that they depended on it to perform their functions. Majority of the respondents (85%) did not have any perceived risks in using IPPD. According to Bagozzi *et al.* (1999), the behavioral theory is centered on attitudes, and this is due to the fact that they are viewed as an important indicator of behavior. Igbaria and Iivaria (1995) established that user attitudes showed a direct impact on the success of end-user computing.

Majority of the respondents (82%) held the opinion that using IPPD is convenient compared to the Old Systems and that it did not bother them to use IPPD to get information instead of finding the same

information from other persons. Besides having a liking for the use of technology, majority of the respondents indicated that the information they entered into IPPD was secure, remained confidential and the respondents embraced change in the way they did things. The respondents had confidence in the use of IPPD, believed that transactions done using IPPD were correct and that many transactions could be done using IPPD.

Jackson *et al*. (1997) argues that behavioral variables, attitude being one of them, may be a needed but not adequate criterion for success. Davies *et al* (1989) advanced that argument by stating that attitude per se may not sufficiently determine the individuals' intentions in the work environment when other extraneous factors such as PU are independently considered. According to Taylor *et al*. (1995), the findings can be justified on the basis of the fact that, in the work environment, productivity is paramount, and individual intentions will be shaped on the basis of work performance considerations and not simply preferences based on personal likes or dislikes with regard to forming a behavior.

5.4 Conclusions

The conclusions of the study are presented below.

5.2.1 The role of perceived ease of use (PEOU) of IPPD in its adoption

Since the majority of the employees who participated in the study had previous experience with systems/applications other than IPPD and were current users of the System Applications Product (IPPD) IPPD, besides having used the system for a period of at least 22 months, the findings to the study are objective. For consumers without previous computer experience, or for those who believe that technology is difficult to use, adoption of these innovations may be difficult.

Perceived ease of use was a key factor in determining adoption of IPPD in Ministry of Medical Services. Once employees embrace change of technology with anticipation for better performance, it is highly likely that they will adopt the new technology with ease. The findings show that that the key characteristics that influence adoption of IPPD IPPD, among other technologies are: the competitive edge (essentially that the technology is seemingly more advanced compared to the element it replaces), compatibility of the technology; level of understandability and user-friendliness of the technology; and visibility of its results including its trial ability.

IPPD is easy to use with various attributes, which was a key attribute in determining its adoption in Ministry of Medical Services. In line with perceived ease of use, other factors that influenced the adoption of IPPD in Ministry of Medical Services include the perceived feeling of comfort when using IPPD, the user friendliness of IPPD, the speed with which IPPD processed transactions and the ability of the users to get support when using IPPD.

5.2.2 The effect of Perceived Usefulness (PU) of IPPD on its adoption

PU is fundamental in determining the organizations adoption of innovations. The higher the perceived usefulness of the IPPD system, the higher the chances that it would be adopted. Within Ministry of Medical Services, the compatibility gaps need to be addressed through post implementation analysis and meeting user requirements.

The degree to which an individual believes that using a particular system would enhance his or her job performance enhances chances of adopting the system. In addition, it is anticipated that if the IPPD system would assist users in realizing their desired performance output then the users would willingly adopt the IPPD system. This is confirmed by the findings, which show that majority of the users in Ministry of Medical Services believed that IPPD would enhance their career growth.

The findings show that using IPPD is convenient compared to the manual (old) systems, majority of the users had the ability to perform most of the functions using IPPD and that IPPD had added value to their work, besides increasing efficiency. Technology adoption (or usage) decisions are characterized by a strong productivity orientation. The greater the compatibility of the IPPD with the existing work procedures and ethics of the users the greater the chances of acceptance of the IPPD by the users. In fact suitability of the IPPD plays a major role in determining beliefs about PU and PEOU and eventually the adoption of the technology. Measures of PU of technology are considered in terms of increase in productivity, improvement in job performance, enhancement of job effectiveness and usefulness in the job.

5.2.3 The effects of individual attitude towards the adoption of IPPD

Attitudes are a significant predictor of behavior, as depicted by the study findings, which show that all the users of IPPD that participated in the study trusted the system to be able to process accurately the data they had entered and the reliability of the information they retrieved from the IPPD, besides not having any perceived risks in using IPPD. The transaction users look at IPPD from a job security perspective and hence the business case for the system is understated.

Though individual attitude is necessary in determining adoption of new technologies, it is not sufficient condition for success. In fact attitude per se may not strongly determine individual intentions in the workplace, which include performance, when other extraneous factors including PU are independently considered.

5.5 Recommendations

The recommendations for policy and practice are presented below.

5.5.1 The role of perceived ease of use (PEOU) of IPPD in its adoption

Perceived ease of use is a key determinant of IPPD adoption. In order to enhance its success in adoption of the IPPD, the following measures are recommended:

The employees who have had experience using the old system should be inducted on the usage of the proposed system so that they can get to know the benefits they would derive by adopting the new system instead of continuing with the old system. The employees should be prepared to adopt new ways of doing things so that resistance to change in adoption of the new technology is minimized.

Before new technologies are introduced, the organization should ensure that the proposed technologies meet the following criteria: that the new technologies have a competitive edge over the technology to be replaced; that the technology is suitable to the firm's internal processes and procedures); level of understandability and user-friendliness of the technology, visibility of the results, and that the proposed technology can be tried before it is adopted.

In addition, before the new technology is introduced, in order to enhance perceived ease of use, there should be perceived feeling of comfort among the users, the system should be user friendly, technically support should be readily available to the users and the speed of transactions should be enhanced.

5.5.2 The effect of Perceived Usefulness (PU) of IPPD on its adoption

The higher the perceived usefulness of the IPPD system, the greater the chances that the IPPD system would be adopted. In order to enhance perceived usefulness of using IPPD, the following measures are recommended:
MOMS should improve on alignment of strategies and operations through the following actions: run the organization in accordance with strategy and plans, accessing the right information in real time to identify concerns early; pursue opportunities proactively; and find the best people and leverage their talent in the right job at the right time.

The new system should be exposed to as many key users as possible, who should then be involved at all stages of development and implementation of the new system. Involvement of the stakeholders would enhance perceived usefulness and hence adoption of the new system. The greater the compatibility of the IPPD with the organizations and users work ethics the higher the probability of technology acceptance. Compatibility is very important in influencing beliefs regarding PU and PEOU and eventually the acceptance of new technology. The system should be tailor-made for the organization to ensure comfort in use and with minimum risks to the users.

5.5.3 The effects of individual attitude towards the adoption of IPPD

In order to enhance effects of individual attitude towards the adoption of IPPD, the following measures are recommended:

Attitudes, being an important predictor of behavior, and hence individual adoption of IPPD, should be enhanced by building trust among the users of the perception of the system that it would have the ability to accurately process data and the reliability of the information to be retrieved from the IPPD, besides minimizing any perceived risks in using the system.

MOMS should strive to reduce costs through increased flexibility by taking the following actions: use IPPD architecture to improve process standardization, efficiency, and adaptability; and extend transactions, information, and collaboration functions to the key business areas of the organization.

5.6 Recommended Areas of Further Studies

The findings of this study, it is hoped, will contribute to the existing body of knowledge and form basis for future researchers. The following areas of further researcher are thus suggested: Whereas the current study focused on responses from the users of IPPD, future studies should focus on responses from the customers.

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APPENDIX I: QUESTIONNAIRE

SECTION A (Perceived Ease of Use)

1. Do you have any previous computer experience?
   a) Yes ☐ b) No ☐
2. Do you know what Integrated Payroll and Personnel Database (IPPD) is?
   a) Yes ☐ Please go to question 3 b) No ☐ Please go to section D
3. Do you have any previous experience with systems / applications other than IPPD?
   a) Yes ☐ b) No ☐
4. Are you a current user of IPPD?
   a) Yes ☐ Please go to question 5 b) No ☐ Please go to section D
5. For how long have you been a user of IPPD?
   a) Below 6 months ☐
   b) Between 7-11 months ☐
   c) Between 12-16 months ☐
   d) Between 17-21 months ☐
   e) Above 22 months ☐
6. Please rate the statements corresponding to your personal opinion

No.	Statement on Personal Opinion	Strongly Disagree (1)	Disagree (2)	Not Sure (3)	Agree (4)	Strongly Agree (5)
1	IPPD is easy to use					
2	I feel comfortable using IPPD					
3	IPPD is user-friendly					
4	IPPD transaction processing is fast					
5	I am able to get support in my use of IPPD					

SECTION B: PERCEIVED USEFULNESS

1. Did you use the Manual (old) system prior to IPPD?
   a) Yes ☐
   b) No ☐

2. What type of user are you in IPPD?
   a) Transaction Processing User ☐
   b) Approver ☐
   c) Information User ☐
   d) ICT Support ☐

3. Is the use of IPPD important for your career in MOMS?
   a) Yes ☐
   b) No ☐

4. How often do you use IPPD in my work?
   a) Daily ☐
   b) Weekly ☐
   c) Monthly ☐

Others please specify in the provided space.
……

5. Please rate the statements corresponding to your personal opinion

No.	Statements on Personal Opinion	Strongly Disagree (1)	Disagree (2)	Not Sure (3)	Agree (4)	Strongly Agree (5)
1	Using IPPD is convenient compared to the Manual (old) systems					
2	It doesn't bother me to use IPPD to get information instead of finding the same information from another person					
3	I have had the opportunity to try various functionalities and access information in IPPD apart from my normal work					
4	IPPD has added value to my work					
5	IPPD has increased efficiency in my work					
6	I am able to perform most of my function using IPPD					
7	IPPD is used widely in MOMS					
8	IPPD is available most of the time					

SECTION C: ATTITUDE

1. Do you trust IPPD to be able to process accurately what you have entered?
   a) Yes ☐
   b) No ☐

2. Is the information you retrieve from the IPPD reliable?
   a) Yes ☐
   b) No ☐

3. Is IPPD reliable and you can depend on it to perform your function?
   a) Yes ☐
   b) No ☐

4. Are there any perceived risks with using IPPD?
   a) Yes ☐
   b) No ☐

5. Please rate the statements corresponding to your personal opinion

No.	Personal Opinion Statement	Strongly Disagree (1)	Disagree (2)	Not Sure (3)	Agree (4)	Strongly Agree (5)
1	Using IPPD is convenient compared to the Manual (old) systems					
2	It doesn't bother me to use IPPD to get information instead of finding the same information from another person					
3	I embrace technology					
4	The information that I enter into IPPD is secure and remains confidential					
5	I dislike changes in the way I carry out my work					
6	I feel confident using IPPD for my work					
7	I believe that transactions done using IPPD are correct					
8	I feel that a lot of transactions cannot be processed by IPPD					
9	I do not prefer things that are computerized					
10	I do not feel that I can get adequate help for a problem I face during the use of IPPD					
11	I have derived many benefits from using IPPD					
12	I feel that IPPD is very important to the overall future of MOMS					

SECTION D (General Information)

1. What is your gender?
   a) Female ☐
   b) Male ☐

2. What is your age?
   a) 30 years or below ☐
   b) 30-39 years ☐
   c) 40-49 years ☐
   d) 50 years and above ☐

3. How long have you been employed at Ministry of Medical Services?
   a) Less than or equal to 5 years ☐
   b) 6-10 years ☐
   c) 11-15 years ☐
   d) 16- 20 years ☐
   e) 21 years and above ☐

4. What is your highest level of education?
   a) Post Graduate ☐
   b) Undergraduate ☐
   c) College ☐
   d) Secondary ☐
   e) Primary ☐

   Others please specify in the provided space.
   ……

5. What was your role in the IPPD implementation project?
   a) Steering Committee Member ☐
   b) Team Leader ☐
   c) Super-user ☐
   d) Task Team member ☐
   e) None ☐

   Others please specify in the provided space.
   ……

Kindly make any other comments in the space provided
……
……
……

YOU HAVE COME TO THE END OF THE QUESTIONNAIRE. THANK YOU FOR YOUR TIME.

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