

# Examining Financial Control Measures adopted on Promoting Sustainability of Telemedicine Project at Muhimbili National Hospital in Tanzania

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**Abstract**— The study assesses the role of financial control towards sustainability of telemedicine project at Muhimbili National Hospital (MNH), Tanzania. An exploratory design was used in the process of knowledge generation using the qualitative approach. Primary data were gathered by key informants using the sample of 20 expert participants. The in-depth interview method was also applied. The collected facts from the field through the respondents were analyzed using content analysis and were described through narration technique complemented by thematic analysis method. The findings revealed that several financial control measures have been put in place and executed to assure realization in the implementation of telemedicine project in at Muhimbili National Hospital. The conclusion of the study is that telemedicine indeed is necessary and may assure transformation in the health sector but much effort needs to be executed to reverse the situation. The placement of monitoring and evaluation expertise is also an important consideration towards enhancing the telemedicine services in the study area.

**Keywords**— Financial control, Telemedicine Project, Muhimbili National Hospital, Tanzania

## I. INTRODUCTION

Financial control is an important initiative towards funding of various projects and activities on individual, group and societal levels (Sharf, 2021). It involves the adoption of policies, procedures and systems that are used to manage a project or an institutional financial performance, by ensuring accuracy, compliance and asset protection. Financial control is essential in facilitating the realization of the intended projects and or tasks because it comprises of planned activities that are executed on certain time required and under specified fund that is being estimated to assure the accomplishment of the expected tasks (Brule et al, 2019). However, financial control regarding its relevance in the project activities is periodical that is once the tenure ends it ceases to exist on the particular executed task. In that case, it is the sole duty of the stakeholder of the project(s) to make sure that prior to the funding and control measures they develop and execute measures that assure sustainability of the initiatives that have been established through funding control measures (Olk & Richards, 2020). This is reflected in the projects in all sectors provided that they are of relevance to the country and the intended section in particular including telemedicine in the health sector. This is the case because it entails the distribution of health services and information through electronic services and information technologies (Alexandrov & Alexandrov, 2020).

Telemedicine is an important technology which assures provision of medical services through distance whereby many people can be reached in various settings both rural and urban without physically meeting or seeing a medical service provider (Mashima & Doarn, 2018). The approach is used to facilitate access to medical services to many people whilst

avoiding the distance barriers whereas access to medical services is made available both in rural and urban aided by information and communication technology (Miller, 2017).

Telemedicine entails the provision of clinical services, such as diagnosis and monitoring as well as preventative, promotive and curative care delivery (Mofatt, 2021). It comprises also the non-clinical practices specifically the administrative and education provision. Telemedicine requires massive heavy resources to cater for its effective and efficient operations in the pattern of service delivery (Angaran, 2019). This is due to the fact that it requires good, strong and adequate internet access at all times by participants reliable and strong possessing at least fourth generation connection or standard to overcome video stability and bandwidth restrictions.

Delivery of the services through telemedicine may be facilitated by four main methods or modalities including store and forward, live video, mobile health and remote patient monitoring (Hjelm, 2021). This therefore leads to the practices being active and well executed efficiently in countries with strong and adequate economies like Canada, India, Japan, Great Britain, France, United States, Australia, China, South Korea, Spain and others that possess strong economies and advanced technologies of at least fourth generation and more have been well effective and efficient in telemedicine (Blyth, 2020). This has led to many of such countries being perceived as well and adequate in health sector development and prosperity.

As the results of this, several categories of medical operations are being executed actively using telemedicine initiatives including emergence care, telepharmacy, telepsychiatry, telenursing, teledentistry, teleneurology, telerehabilitation, teleneurosurgery, teleaudiology, telenutrition, teleneuropsychology, telepalliative care,

telepathology, teleradiology, teledermatology, telesurgery, teleabortion, teleneurotherapy, teletrauma care, telecardiology and several other medical practices (Mofatt, 2021). The success of the initiatives in the jurisdictions has been facilitated by the internal measures by the government through policies and investment through financial resources that are well managed in successful conduct of the initiatives (World Bank, 2022).

Most telemedicine initiatives have taken ascendancy from 20<sup>th</sup> Century as a result of advancement in information communication technologies (ICT) whereas communication between patients and medical service providers particularly doctors have been aided by electronic means (Shaw, 2019). This has been facilitated by the transmission of medical facts, imaging, and health informatics information from one point to another electronically which are interpreted, and results are sent with recommendations through ICT infrastructure; including direct conversation between the doctor(s) and the patient(s) (Mitchell, 2019).

Telemedicine has been useful in bridging the distance gap between a patient and healthcare provider (Masson, 2020). Due to its usefulness, most developed states have invested well and established mechanisms such that telemedicine is highly sustainable and mainstreamed in their healthcare settings making the service enjoyed by many individuals in several localities (Shaw, 2019). The majority of radiology images are read and interpreted in India, for example, where there is enough market for this, and patients receive timely feedback and excellent care via telemedicine, whereas in the United States and Europe, for example, this is not the case.

In developing countries particularly Africa, telemedicine has been an issue of concern for assuring sufficient health care provisions especially in rural settings since most people have poor access to healthcare and services as a result of several factors including limited economic strength and state capability in providing the services (Itrat *et al.*, 2016). However, on telemedicine it has been and still is highly difficult for such initiatives to be sustainable since several necessary infrastructure are very poor such as power supply through electricity, internet services, network coverage, information communication technology (ICT) facilities and others (Miller, 2017). Furthermore, the success towards realization of at least fourth generation (4G) internet services has been far from reality among many jurisdictions (Ibid). This has made the telemedicine practices and initiatives to be far from being realized and attained.

For Tanzania in particular, telemedicine has been practiced in the country for more than 20 years in different hospitals both public and private ones. Most of telemedicine initiatives have been in the form of donor funded projects whereas after the end of the project tenure the initiatives ceased to exist (Ramesh, 2020). This has been an issue of concern pertaining to sustainability because several telemedicine initiatives have been undertaken, yet they have not been mainstreamed in routine healthcare delivery.

This has been the case because telemedicine services have been poorly improved in terms of execution due to high dependence on donors in terms of funding and resources injections to facilitate the tasks (Swere, 2021). Despite that,

the injection of funds from the government in the projects including paying salaries to the personnel in the projects has been almost none with the activity in terms of financing being left to the donors (Hoffman, 2021). Furthermore, the involvement of the government in such projects has been highly minimal which may have implications towards sustainability on the services in Tanzania.

The situation went along with limited efforts towards instituting infrastructure to support the initiatives (Harper, 2021). The National Health Policy for several years has been silent towards telemedicine initiatives. This is further evident with the National ICT Policy that was enacted and passed in 2016 emphasizing on automation of the initiatives and all activities in all sectors. However, with the health sector the policy in the Ministry and entities for years had been silent on the telemedicine initiatives (Swere, 2020). This culminated to the allocation of funds on the initiatives being low and almost leaving the initiatives to stagnate completely.

Therefore, during the fifth regime efforts were made by the government to strengthen telemedicine and get away from donor dependence for the purpose of assuring sustainability of the project (Wairagala, 2021). However, the government set aside massive funds that have been instrumental in setting infrastructure country wide to all regional, district and referral hospitals to assure that telemedicine becomes a reality in Tanzania. Investment in facilities and infrastructure was set forth through the Ministry of Finance, e-government authority (E-GA) and some development partners that showed interests to fund the project (Harper, 2021).

The focus on the initiatives targeted all Referral, Regional and District hospitals to be placed with the telemedicine facilities and technology for the purpose of making sure that the initiatives become a reality in Tanzania and sustainable (Harper, 2021). The initiatives have been placed in the hospitals including Muhimbili National Hospital. The facilities have been set and placed for the initiatives being executed in various areas of medicine based on the available medical experts respectively (Ibid). However, the prosperity of the initiatives seems to be composed with shortcomings and slow pace that infringe the targets towards success and sustainability of the project (Wairagala, 2021). This has been most attributed to the financial control measures in the conduct of the project that the government released massive funds in collaboration with some development partners still the prosperity of the initiatives seems to be at stake (Ibid). This is further attributed to the fact that the initiatives seem to be unrealistic in the practice with the situation keep on persisting even after massive investment on telemedicine project by the government. This signified the need to further articulate the issue for the purpose of addressing the concern in the Tanzanian environment.

## II. STATEMENT OF THE PROBLEM

The government of Tanzania embarked on decentralization of healthcare systems to ensure health services reach the minority at lower levels. Telemedicine is one of the useful innovations which can complement the efforts of the government in bridging such a gap (Swere, 2020). Despite its rich promise, telemedicine has been in practice in Tanzania for

several years through donor funded projects whereas the project timeline ends, and funds stops; projects also have been collapsing and cease to exist (Shaw, 2019). This has caused a concern on sustainability of the projects since they have been rarely integrated in routine service delivery as expected which is an issue of inquiry.

However, the government intervened and allocated funds since the fifth regime onwards to assure sustainability of telemedicine though the efforts seem to indicate sustainability on the initiatives still is far from reality (Wairagala, 2021). This is attributed to the fact that the government invested heavy on infrastructure development and setting countrywide on regional, district and referral hospitals; but the practicability seems to be low and dormant which brings about controversies on the initiatives (Swere, 2021). The situation brings to the attention the issue of financial control in the utilization of the project towards sustainability of the project in Tanzania (Ibid). This therefore fosters the need to undertake the study since success of telemedicine in most countries in the globe reveal to be attributed to the internal efforts of the governments by financing the initiatives and assure management of the funds on the projects.

This is evident with Alexandrov and Alexandrov (2020) who focused on the design of the framework for sustainable telemedicine information system in developing countries. The study suggested that adequate funding and management or control of the resources assures the realization of the goals. Despite that, Salehmadi and Fatemeh (2017) carried a study on assessing sustainability of telemedicine practices in Iran through chances and challenges. However, both studies recommended the need to inquire further on sustainability of the telemedicine initiatives in the developing countries at individual country level to determine the internal realities respectively and address the concern.

In that case, the fact is that little or less had been undertaken on sustainability of telemedicine services with regard to financial control initiatives in Tanzania which entails the gap that needs to be filled. The situation has still been persisting as the challenge on sustainability of the project such that the study was necessary being envisaged to assess the role of financial control towards telemedicine projects in Tanzania.

### III. THEORETICAL FRAMEWORK

The study adopted the Resource Based View (RBV). This is a managerial framework that seeks to determine the resources that may be used by the organization, company or firm to attain sustainable competitive advantage (Lavie, 2008). The theory has been propagated by Barney (1991) suggesting that resources are several that may be financial as the key and primary, human resources and others depending with the activity that is sought to be undertaken towards the realization of goals and objectives to attain sustainable competitive advantage. The resources may include multiple channels and sources provided that they are legal and do not contradict the laws of the land (Barney, 2001).

The theory is relevant to the study since financial control is one of the resource patterns that may be used by the company with its efforts internally to attain sustainable competitive advantage through adequate and stable fund management. In

that case, with public projects sustainable competitive advantage is determined based on the level of involvement of the government in the activity respectively. Also, the level of funding of the activity is very important that once it is sufficient then the sustainability level is likely to be certain with vice versa being the case. Furthermore, financial control is very important that once it is minimal automatically sustainability is likely to be achieved.

### IV. METHODOLOGY

This study employed phenomenological philosophy. This is because the study was subjectively undertaken with knowledge gathering through response to the research questions and not study hypotheses. The study was performed using exploratory design because knowledge generation was facilitated by testing the subjective reality under inquiry respectively. The study was conducted at Muhimbili National Hospital (MNH) because it is one of the referral hospitals in the country and the largest in the country with adequate investment of telemedicine initiatives by the government expected to be very active and operational. This makes the area useful and essential towards knowledge gathering process with respect to the nature of the study. In this research, a qualitative approach was used because it helps to focus on peoples lived experience and perception and it uses non-numerical data like interviews. The population comprised of individuals as practitioners in telemedicine projects. Despite that, the unit of analysis from the population comprised of individuals because information to fill the knowledge gap were obtained from the individuals and not any other substance and or creature(s).

The study consisted of employees in the selected government entities because they served as essential in the information gathering process. The study consisted of 20 respondents. These were key informants among senior and managerial officers, medical doctors, nurses and the administrative experts particularly the personnel in the information and communication technology and other relevant actors in the administration. The selection of the participants was attributed by the fact that they served as key individuals for the generation of well-detailed facts on the issue under study. The selection of sample was derived from Webb (1991) stating that as the population ranges between 100-1000, 10% is the sample size. Also, in case of the population between 1000-2000, 5% serve as the sample size. Moreover, the situation where the population exceeds 2000, 1% serve as the sample size. However, the entity consisted of 106 employees that with 10% the selected number is adequate because has exceed the required number by far.

The study comprised of primary data as the information which were collected from the field since the phenomenon was recent. Secondary information were collected from the relevant literatures in line with the research questions specifically to support and complement primary data. In that case, primary data since were key for the study were collected in the following manner: In-depth interview was applied in the data collection process. This assured the collection of information from the skilled participants on the issue under study. Therefore, the method was applied to the respondent's

sample sizes as key informants because the aim was to gather well detailed information with high degree of clarity and preciseness. Documentary review was also used. This is the method which was used to gather information from secondary sources which include published books, journal articles and other relevant reports on telemedicine as the focus of the study. Secondary sources were specifically used in developing the basis of the study from background, the gap, theories and reviews. Moreover, they were used to complement primary data in the discussion of the study results. The key informants of the study include the Senior Officials including the Directors and Supervisors. The officials were interviewed with very few questions particularly aiming at getting more information on the policies.

The information collected were grouped qualitatively whereas facts which collected using interviews were analyzed using content analysis approach; and presented through narration using themes to support primary data in line with the research questions. The themes were presented using quotations as direct statements from the respondents in the course of data collection for clarity and accuracy of the results. Therefore, the study is qualitative. Ethics were observed in the sense that the study was performed in line with the University guidelines and rules whereas the document was original and not a plagiarized work. Data collection was performed through permission from the university with adherence to confidentiality among respondents. The research ensured that the study design allowed for accurate conclusions about cause and effect (validity) and consistency over time (reliability).

These are adequate measurements towards ensuring successful realization of data quality whether the study is objectively or subjectively undertaken. Since the study employed qualitative approach through subjective reality testing, first face validity was undertaken whereas the research tool was designed and checked until its approval by the supervisor. Thereafter, construct validity was undertaken with the data being collected from multiple participants as the respondents until point of saturation was realized in the process. Therefore, the report was written and accomplished but before submission formal verification by the researcher to the respondents was conducted to assure consistence on the results presented prior to their correctness and consistence. Finally, the report was submitted.

## V. RESULTS AND DISCUSSION

### *Respondents Profile*

The study gathered data from 20 participants being the key informants since were skilled, knowledgeable and skilled practitioners in the information and communication technology (ICT) and medicine specifically on radiology, dentistry, internal medicine and cardiology. They were all educated formally as professionals that were qualified participants to facilitate generation of adequate and reliable data. The individuals were all aged above 35 years implying that were all well experienced to generate adequate and reliable data for the study. Furthermore, participants were both men and women as the respondents.

### *Telemedicine Services offered at MNH*

The study revealed findings on the telemedicine services available at Muhimbili National Hospital (MNH) through the respondents selected for the study as the key informants respectively. Therefore, it was revealed that the telemedicine project was officiated since 2017 on infrastructure establishment and facility settings in the referral, regional and district hospitals all over the country including Muhimbili National Hospital. This led to the execution of telemedicine services at the hospital which is a major success and breakthrough in Tanzania. This is the case because some telemedicine services have been established and executed to this day including radiology whereas diagnosis are performed and mailed elsewhere in other hospitals within the country and outside especially India and feedback is obtained and recommendations for treatments. Also, teleconference is very active and operational whereas medical practitioners engage in teleconferences with multiple actors and stakeholders within and outside the country. Other areas include dentistry and surgeries especially those performed using Laparoscopy technology. The reality still is that the services are still in the beginning or early stage useful for the commencement of the technology. The statement was supported by one key informant stating that;

*“Telemedicine project has indeed been useful towards facilitating the realization of the services through the efforts of the government. The services are still at the beginning stage on few or limited services namely teleradiology, teleconference and teledentistry through conferences; as well as the surgeries conducted using Laparoscopy technologies”.*

The implication is that any initiatives by the government such as the project usually assure the successful realization of the activities in practice. The statement is connected with the views by Alexandrov and Alexandrov (2020) suggesting that telemedicine services in the healthcare facilities in the jurisdictions tend to be active and operational regardless of the scale and size provided that the government supports the initiatives. This is further connected with the resource-based view (RBV) theory that the support of the government towards telemedicine initiatives usually is by means of resources that assures the successful realization of the initiatives.

This is further certain with National Telemedicine report by the Ministry of Health (MoH) in 2021 stating that telemedicine is certain and active in Tanzania through teleconferencing measures that online medical communications have been and still are very active from within the country and from outside the country (URT, 2021). Also, teleradiology is active that the information generated from various diagnosis may be shared and communicated electronically in other specialists for expert opinions and generate the outcome.

### *Financial Control Measures*

#### *Formal Resource Allocation*

The study results revealed financial control measures established in the implementation of telemedicine project at Muhimbili National Hospital (MNH) in Tanzania through the sample size selected for the study. In that note, the implementation of telemedicine has been facilitated by adequate financial control measures including formal financial

resources allocations to support the execution of telemedicine initiatives. This is the reality in Tanzania during the fifth regime of government that it embarked to major re-structuring and improvement in the health sector that telemedicine was one of the issues that were set to be practical and actionable. The decision was facilitated by two main policy directives namely the National ICT policy 2016 that aimed towards digitalization in the public entities and the country at large in the tasks and the sectors including the health sector and others. Also, the other policy was the National Health Policy 2017 that aimed to ensure service quality and well-being including automation in the delivery of the services to the public.

This has been a concern since before that the government had not invested on telemedicine per se but that time financial resources were formally allocated to ensure telemedicine is practical and sustainable. The allocated financial resources were set specifically for infrastructure setting and facility locations and placement towards referral, regional and district hospitals countrywide including Muhimbili National Hospital (MNH). The statement is supported by the informant J stating that;

*“The deployment of telemedicine in Tanzania has become viable and realistic since the fifth administration in the 2017/2018 fiscal year, as it was the first time the government has set aside cash resources specifically for telemedicine projects to support infrastructure and facilities in the referral, regional, and district hospitals that Muhimbili belongs to the selected categories”.*

The initiatives made telemedicine to be implemented in Tanzania including at Muhimbili National Hospital (MNH) that the facilities have been placed and the initiatives are executed especially in radiology surgeries through laparoscopy technology, medical consultations, dentistry, neurotherapy, pharmacy, rehabilitation and some other few encounters. This is a major improvement though the progress is composed with uncertainties. The statement is also supported by one informant stating that;

*“The allocation of the resources indeed made the practice of telemedicine at least to be realistic though at slow pace with shortcomings but at least something is in progress since we are making medical consultations through telemedicine. Also, we perform various surgeries through telemedicine technology including some radiology practices and dentistry procedures and few others. All I can say is that we are now making some progress”.*

The implication of the results is that formal financial allocation of the funds or financial resources serve as the way forward and successful initiative towards the implementation of the project. The statement is in line with the views by Masson (2020) suggesting that health related projects are very costing and demanding prior to resources. Therefore, with telemedicine stable allocation of financial resources is certain and essential in the successful realization of such projects. This is also linked with the resource based view (RBV) theory because the success of the telemedicine services relies on the resources adequacy that may determine the outcome respectively.

This is evident with the National Telemedicine project 2018-2023 that the government allocated resources formally to

make sure that it is connected in thirty five (35) healthcare facilities in Tanzania both in the mainland and Zanzibar (URT, 2022). They include Muhimbili National Hospital (MNH) in Dar es Salaam region, two hospitals in Zanzibar including Mnazi Mmoja hospital in Unguja and Abdalla Mzee hospital in Pemba. Also, twenty (20) regional referral hospitals including Morogoro, Lindi, Katavi, Ruvuma, Tanga, Mwanza, Rukwa, Geita, Iringa, Mtwara, Njombe and all other regions countrywide.

#### *Budgeting*

The other key financial control measure employed is budgeting that the government especially during the fifth regime instituted budget for telemedicine initiatives which successfully fostered the implementation of the infrastructure and facility settings to support the successful implementation of the telemedicine services. The budgeting made referral, regional and district hospitals including Muhimbili National Hospital (MNH) being instituted with the technology. The implementation was facilitated by the Ministry of Health in collaboration of experts from the Dar es Salaam Institute of Technology (DIT) and e-Government Authority (e-GA). The statement is supported by one informant that;

*“The government placed the budget for the telemedicine initiatives which was consecutive enabling the setting of the infrastructures and facilities that enable the implementation of the initiatives in Tanzania in our local hospitals. This is a major development and we keep on improving as times goes on”.*

The implication of the results is that budgeting is essential in the telemedicine projects because any project activity entails the budget which is the key measure of performance through overruns and time variations. The statement is connected with the views by Angaran (2019) suggesting that telemedicine projects are very costing that efficiency in their execution and sustainability budgeting of the activities is very important since it is crucial and certain towards performance realization and assessment including monitoring and evaluations. This is further in line with the resource based view (RBV) theory because budgeting practices and executions usually focuses on the resources which are fiscal that may also generate others an inputs for successful output generation.

#### *Audit*

This is the other key financial control measure that has been employed specifically to monitor the expenditures and assessment towards efficiency, results and outcomes pertaining to the project conduct. This is essential because has been conducted by the central government to monitor all financial resources allocated for the implementation of the telemedicine project through Controller and Auditor General's (CAG) Office. The verification was conducted to all actors responsible from the Ministry, implementing entities including the hospitals as the beneficiaries even Muhimbili National Hospital (MNH). The statement is supported by the informant T views that;

*“The government issued auditing to the telemedicine project whereas all actors including the hospitals as the beneficiaries*

were audited and thanks, we received the qualified report which is good. The results became vivid even at Muhimbili National Hospital (MNH) telemedicine is active and alive”.

The implication of the results is that telemedicine projects like any other large project activities requires auditing practices which are thorough and intensive to enable efficiency in the spending of the resources, control and future prospects of the projects. The statement is connected with the views by Alexandrov and Alexandrov (2020) suggesting that health related projects including telemedicine tasks are large activities whereas efficiency in managing and running of the entities lies upon the control measures with audit being one of the key practices to assure efficiency especially external audit practices. This is also connected with resources based view (RBV) theory since audit is all about resources being monitored and assessed prior to their expenditure and usage in line with the set goals and objectives need to be achieved.

#### *Procurement of the Equipment and Supplies*

The fact that telemedicine projects are large and complex the facilities and equipment were heavy and very expensive which were required in bulk to meet the demands of the projects. Therefore, in facilitating financial control all procurement activities whether supplies, purchasing, leasing and others were executed based on the government procurement system to assure monitoring and control. The project team was required to submit its procurement plan for each year which were all subject to thorough audit for efficiency and control purposes. The statement is supported by the informant K views that;

*“Our project was very strictly monitored by the government especially on the money allocated for the project that with procurement for instance we were supposed to issue compliance with government procurement system that we had to prepare and submit annual procurement plan for each year which were used as platform for audit and other concerns”.*

The implication of the results is that health related projects especially telemedicine constitute several items that need to be procured since it is technology related subjected to evolutions as a result of innovations. Therefore, strict procurement practices are necessary to assure efficiency in the implementation and success in the outcomes. The claim is linked with the views by Collins (2018) suggesting that health projects are complex that they also require heavy procurement efficiency in the implementation. Also, may need to efficiency in the procurement practices. This is also linked with the resource-based view (RBV) since the concerns on the procurement focuses on the use of resources.

The implication of the entire results is that successful project implementation in the health sector including telemedicine requires adequate financial control measures and initiatives to assure success in the commencement of the projects. The statement is connected with the views by Blyth (2020) suggesting that health related projects including telemedicine are complex and large with several requirements to assure efficiency in the operations.

Since that is the case, in assuring efficiency in the implementation process, financial control measures are necessary like auditing, formal allocations, budgeting, cost estimations and others because they tend to require heavy

financial needs which may attract bad practices and affect efficiency in the implementation process. Also, Corey (2019) suggests that health projects including telemedicine are well executed towards efficiency provided that the financial resources are well monitored and controlled in all the phases until the project is accomplished. This is attributed to the fact that they require heavy funds allocations that may be attractive towards unwanted practices which are unethical. Such behaviour as they persist in the project the end result tends to be negative.

## VI. CONCLUSION

Telemedicine project in Muhimbili National Hospital (MNH) and the country at large have been a reality which is a major step and breakthrough through government own initiatives in setting the technology and facilities in the health sector. This has been facilitated by the financial control measures executed by the government on telemedicine project that led to the execution of the telemedicine services in Tanzania. The measures have been useful towards assuring the successful realization of the government to start executing the initiatives.

The fact that the situation pertaining to telemedicine is that way, the study recommends that since the government realized the usefulness of the telemedicine it is necessary to engage in adequate fund allocations and initiatives as it was during the fifth regime which may enable the initiatives to stabilize and assure prosperity in the success of the project at Muhimbili National Hospital (MNH) and other health care facilities in Tanzania. Despite that, the study recommends for the need for the government to invest in the technology through human capital generation on various technologies which may light initiatives from within. Also, the government should institute internal projects and initiatives that may enable the skilled local people to be innovative and transfer the technology among the nation and get away from dependence of the technology from the foreigners. The placement of monitoring and evaluation expertise is also an important consideration towards enhancing the telemedicine services in the study area. This may reduce costs of buying technology and may foster high level of efficiency in the execution of the projects. Furthermore, the study recommends the need for the government to foster awareness through media and other channels of communication to the public to make them aware of the initiatives and the need to develop interests to learn and become cooperative as beneficiaries on the project.

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