Baseline & Needs Assessment Report

On e-Participation for Good Governance Processes to Improve Public Services Delivery in Uganda and Kenya

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EXECUTIVE SUMMARY

This is a report of a baseline study and needs assessment aimed at facilitating the implementation of an e-participation system to improve governance and public service delivery in Uganda and Kenya. The study was conducted between August and December 2016 in areas of Western, South Western and Northern regions of Uganda, and Nakuru County in Kenya. The study was conducted by ToroDev, an indigenous civil society organisations based in Uganda with funding from SPIDER, Stockholm University and SIDA. ToroDev's activities are premised on the ideals that community empowerment through knowledge and utilization of ICT4D tools leads to good governance processes, characterized by prioritized public resources appropriation and hence improved livelihoods. The organization has thus pioneered the strategic use of ICT4D tools for resource utilization, self-sustainability and citizen participation in governance.

ToroDev is implementing a project that aims to mainstream active electronic citizens' participation to influence governance processes in Uganda and Kenya. The ultimate goal of the project of which this study is a part is to design an e-participation system, hereafter referred to as 'Me and My Leader' or (MML) that will eventually facilitate interaction between citizens and leadership at various levels. The promotion of citizens' engagement with duty bearers is perceived to be fundamental in improving governance and public service delivery as citizens would air out views and concerns on different services, resource appropriation and to monitor and provide feedback on government programs.

The specific objectives of the study included identifying; the prevailing factors that influence general data generation, information access and use to promote good governance processes; priority public service delivery needs in sampled; possible target groups most likely to influence participation and utilize the system; available ICT4D tools in use and those critical for the success of the project and affordability; the existing communication infrastructure in the selected areas, which includes networks, technologies, internet access, power sources (electricity/solar). Other factors like social demographics of the communities and individuals and community expectations from an electronic platform were to be analysed. The study was also intended to analyse public policy and legislation that was crucial in gathering, access and use of data at local and national levels as well as performing a PEST analysis.

E-participation was conceptualized as a technology-mediated interaction between citizens and the public sphere of mainstream politics that manage resource appropriation at the national and local levels. ICTD are perceived as enablers in leveraging community socio-economic and political participation and feedback on common issues as well as in public policy formulation. This would eventually empower citizens and strengthen good governance. The concept of e-participation embodies other concepts like e-information, where citizens are provided with public information with or without demand; e-consultation and e-decision making where electronic platforms are available for sharing ideas on key issues or policies and building consensus or rather making decisions from those ideas which eventually contribute to public policy. The theoretical framework was premised on the decision theory. This theory provides well established approaches for participatory solution development. Furthermore, a multi-criteria decision analysis (MCDA) was preferred in modelling the e-participation system. The use of this method would help to frame the problems' evaluation in various viewpoints including; infrastructure, investments and affordability, e-processes and users' attitudes and capacity to adopt the system.

The study adopted both qualitative and quantitative approaches in the process of gathering data from the communities. The sampling strategy was mainly purposive because specific population clusters were perceived to be of importance in assessing e-participation and pioneering in the entire project implementation. Among the variables of consideration included literacy levels and ICT literacy, employment status, access to ICT tools and facilities, access to power sources, social cultural differences, thus household, population and individual characteristics were analysed. Data was collected through questionnaires and overall 1,000 questionnaires were interview administered. The response rate was guaranteed through this method and additionally, since the questionnaire was lengthy (i.e 14 pages), contained a bit of ICT technical terms and drafted in the English language, clarification of questions and responses was possible in the presence of the interviewer. Another level of significance was the interest groups and several categories were considered including; women as a gendered grouping, the youth, people with disabilities (PWDs), political leaders and farmers. Specific identifiers were scrutinized, for example groups that were engaged in similar activities, for instance of income generation or social activism and with a recognized structure of leadership. The needs at the group level were deemed important for special consideration in an e-participation system and data was collected through focus group discussions (FDGs). The assumption behind this consideration was that specific interests and concerns could be lost in a quantitative method. Thus overall 22 focus group discussions were held covering all the regions under study.

Data were analysed at several levels but the first assumption presumed for e-participation among the target groups was access to ICT tools. Findings revealed that the common tools accessible to respondents included the Radio at 918/1000 which was approximately 92%; followed by the television at 897 (90%); smart phone at 870 (87%); computer at 787 (79%); ordinary phone at 749 (75%) and the least accessible tool was a fixed phone at 92 (9.2%). In actual ownership, more respondents owned a smart phone at 843 (84%) followed by radio at 832 (83%). This was followed by an ordinary phone (GSM – voice and SMS only services) at 76% and the least owned tools were telephones with wireless (kept in one place) and fixed phones at 7 and 3% respectively. The age group of 18-25 ranked highest in ICT tools possession (29%), followed by 26-35 (27%) and 46 years and above ranked least, implying a likelihood of the age ranges of respondent most likely to take on the e-participation program.

The common areas of access were places of residence (home), followed by work places and private/commercial spaces, like Internet cafes and call boxes, while the least options were from neighbours and friends. Internet access was mainly through the mobile phone and common telecommunication networks were MTN and AIRTEL remotely followed by UTL in Uganda while in Kenya Safaricom and Orange Care predominated.

In terms of affordability of Internet access through a mobile phone, the expenditure was between Ug.Shs.10, 000 – 35,000/= implying an average of Shs.17, 500/= in Uganda and Kshs.500/= in Kenya, while a small percentage (16%) paid above Ug.Shs.35,000/= (KShs.1,000/=) per month. Only 2% of respondents could not estimate their expenditures mainly because they were not responsible for the payments. Generally, on overall average, the expenditure on internet among respondents in both countries ranges between $5-10 monthly.

The predominant technology used for Internet connection, other than a mobile phone, was the 3Gs wireless modem (dongle). However, other technologies existed, for instance ADSL modem, fixed optical cable (FTTO), VSAT satellite connection, Wimax, ISDN, and 4G but their adoption by respondents was mostly dependent on financial capabilities.

Expenditures on Internet access through computers ranged between Ug.Shs.10,000 – 50,000/= with a positive skewed curve making a mean of Ug.Shs.37500/= (Kshs.1100/=), and few respondents paid more than Ug.Shs.50,000/= (KShs.1,500/=) per month or an equivalent of $15 monthly.

Overall, the study established that the mobile phone is the most common ICT tool that can be used in an e-participation project like one proposed by ToroDev and partners. The level of utilization ranged from voice calls, data transfers, SMS, Internet, Radio and the least use was for social networks. In addition, 41% of respondents had ever participated in community discussion programs influencing essential public service delivery, while 36% had participated in radio discussions on other general common issues. The common issues of engagement included matters of security and the police, governance, health, land, education, domestic violence and child abuse and neglect. The mobile phone is a dominant form of interaction in all these matters, either through reporting or through discussions.

Respondents also expressed a need to access information from a common platform, preferably an electronic one. Information needs ranged from information on government programs, for example wealth creation, Agriculture, Youth Livelihood, Central government releases to local government (district/county), programs for people with disabilities, education, human rights and government policies and acts. There was thus common ground and willingness to engage in the e-participation system to follow through with these common concerns.

Further findings from the focus group discussions (FDGs) revealed that youth from urban areas and politicians were most likely to actively participate in the proposed project, because they had access to the basic infrastructure and tools, were connected to more than one network, actively participated in civic matters and possessed the means to maintain connectivity. Although women had access to the basic ICT tool, the mobile phone, usage was mainly for ordinary utilities, for example voice calls, mobile money and radio. Very few had traversed the internet. Affordability was an issue for majority women. People with disabilities were the most at a disadvantage since access to basic tools was mainly through association with family or neighbours; they were less educated and could not utilize basic functionalities of ICT tools. Affordability was a huge challenge and they expressed preference for physical rather than online contact and engagement. This was a category least likely to adopt an e-participation system.

The PEST analysis revealed high levels of the e-participation project success. Among the many other success indicators, the analysis revealed strong political support for integrating ICTs in government functions for the purpose of promoting accountability and transparency, enabling effective methods of public information access and dissemination. On the economic front, the ICTs market environment in both countries of study is liberalised. Consequently there are a handful number of ICTs infrastructure and connectivity providers, and media houses. The competition among the providers leads into innovations, favourable pricing of ICTs equipment and services. The analysis also revealed the age range of 18-35 years was the most active in using the Internet. Also it becomes a social success indicator for the project. The available established level of technology uptake is sufficiently enough for the requirements of the e-participation project implementation across the selected regions. However the present jobless levels among the youth remain the biggest threat/risk to the e-participation project.

Issues of concern, observations and recommendations for developing an e-participation system (MML – Me & My Leader)

- Respondents' concerns and requests (individual and focused groups)	Recommendations
• Security - Information security - Personal security/safety - Misuse/abuse of e-participation system	- Incorporate state of the art security measures in the system - Implement modulation mechanism (robotic and/or human beings) depending on the state/situation of engagement
• Required direct intervention to be done by the project - Connectivity barriers - ICT Literacy - E-participation literacy	- Establish toll free lines for some forms of engagement - Devise means of providing introductory courses in ICTs in particular the proper usage of the Internet to foster development - A literacy campaign for the entire concept of e-participation is a mandatory for success of the project objectives.

- Features of the MML e-part system	Recommendations
• Composition	Should have front and back end systems
• Platforms	Should run on a cross section of hardware and operating systems, e.g. mobile, stationed, etc.
• User Interface (UI)	Among others, the UI should take considerations of human-computer Interface, equipment capabilities and human capabilities
• Services - Store and forward principles	Should support mobile users in weak or no network areas to enter data and later be transmitted to the system upon reaching areas of better network connectivity by the user.
- E-participation framework service modules	Should contain independent but coordinated modules (e-formation, e-discussion and e-decision making)
- Archival services	Deploy state-of-art technologies for archiving

- Approach for MML system development	Recommendations
A three phased approach should be adopted	- Should concentrate on system development of the core functions of the back and front ends - Services access and delivery mechanisms: especially the e-information services and their corresponding preferred sectors - Training end users

- Theoretical foundations for designing core engine of the MML e-Participation system development Hint: E-participation system - automatically imply handling group deliberations. Consequently, the designing of the system engine should be based on group decision analytic methodology/ies (GDAM) that provide an effective and valuable means of articulating and structuring deliberations within public participation.	A GDAM or a combination of GDAMs that: - Gather the group together in a facilitated discussion of the issues - Seek to agree on group probabilities and utilities without formally eliciting individual ones - Develops a group analysis and explore the areas of disagreement via sensitivity and robustness analysis. - Seek to reach a decision by consensus, otherwise it invokes a bargaining and negotiation based process which strives to converge to a point on the Pareto boundary
- A technical point of view of MML basic components	- A decision analytic component - Elicitation interface - Locking/management component. - A trail component/module - Online MML tutor and manuals

In conclusion, all communities and office bearers at all hierarchies in public and private administration that were involved in the study are enthusiastic to receive the MML e-participation system. We recommend an e-participation system be developed along the UN framework and its core be engineered based on group decision analytic methodologies (GDAM) that provide an effective and valuable means of articulating and structuring deliberations within public participation.

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Abbreviations/Acrynoms

2G	Second Generation of Wireless Communication Technology
3G	Third Generation of Wireless Communication Technology
4G	Fourth Generation of Wireless Communication Technology
ADSL	Asymmetric Digital Subscriber Line
CAO	Chief Administrative Officer
DCDO	District Community Developing Officers
DDPs	District Development Plans
EDGE	Enhanced Data GSM Evolution
FDGs	Focus Group Discussions
GDAM	Group Decision Analytic Methodology/ies
GDP	Gross domestic product
GPRS	General Packet Radio Service
GSM	Global System for Mobile communication
HCI	Human–computer interaction
HSDPA	High-Speed Downlink Packet Access
ICT4D	Information and Communication Technologies for Development
ISDN	Integrated Services Digital Network
MAUT	Multi-Attribute Utility Theory
MAVT	Multi-Attribute Value Theory
MCDA	Multi-Criteria Decision Analysis
MML	Me and My Leader
NAADS	National Agricultural Advisory Services
PAP	Poverty Alleviation Project
PEST	The political, economic, social and technological
PWDs	People with disabilities
R&D	Research & Development
SMS	Short Message Services
ToroDev	Toro Development Network
UI	User Interface
VoIP	Voice over IP
Wimax	Worldwide Interoperability for Microwave Access
WOUGNET	Women of Uganda Network

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1. INTRODUCTION

This report represents the findings of a baseline study on needs assessment for the implementation of the e-Participation model/system aimed at improving good governance and public service delivery in selected regions of Uganda & Kenya. The study was commissioned by Toro Development Network (ToroDev) an indigenous non-profit civil society organization with offices in Fort Portal town, and Kampala, Uganda.

ToroDev is well known as a pioneer in mobilizing communities, sensitizing, orienting and training marginalized population groups in strategic use of ICT tools to enable maximum resources utilization for self-sustainability. It holds a vision that empowered communities with leadership skills and knowledge, through proper usage of ICTs tools are in position to improve public service delivery especially for health & well-being, and education & skills building goals. This expertize can also ease to access to other public and corporate services and information, strengthen democracy, promote citizen participation in political decision-making, facilitate smooth communication between producers and consumers to run better functioning markets, enable global trade and exchange timely, and hold civic responsibility.

The study aimed at identifying the prevailing factors that influence general data generation, information access and use to promote good governance processes, particularly active participation of citizens in determining priority public service delivery needs in their communities. Other objectives included identification of influential target groups that would enable successful implementation of the proposed e-participation system, as well as ICT tools currently available for use that would impact on the success of the project. The existing communication infrastructure (network, broadband, electricity) was also considered as an influential factor in usage of ICT tools in both countries.

Ultimately, the study generated an information base that gives a well-informed direction of project implementation to project managers and beneficiaries. In addition, it is a vital resource for guiding the developers of the e-participation system hereafter referred to as "Me and My Leader" (MML) system within the e-participation framework recommended by the United Nations Department of Economic & Social Affairs (UNDESA). The theoretical grounding of this study that paves way for the development of the MML e-participation system is rooted in decision theory/analysis. While the rationalization of MML adopts the UN e-participation framework[1].

The goal of the MML system is to promote citizens' engagement with duty-bearers in both public and private sectors across the two countries, for the start. The promotion of citizens' engagement with duty-bearers is perceived as one of the ways of improving governance and prioritized essential public service delivery systems. MML is envisaged to be a citizens' platform to air out their concerns on the status of service delivery, access information on how public resources are appropriated in form of government budgets at sub-national and national levels, District/County Development Plans (DDPs), government program, etc., and to monitor expenditures at grass root levels. On the other-hand, the system shall provide the duty bearers (politicians & technocrats) access to direct views and needs of the citizens, analysed data that shall form the basis of debating evidence-based policies during planning and budgeting processes both at sub-national and national levels. In view of the MML objectives coupled with adoption of the UN e-participation framework in its system development phase, the MML system fits very well with the initiatives of e-government development plans [2, 3] of the nations in consideration.

Thus, in this study, the generated information base shall also enable the project managers of the system to monitor and assess the progress and effectiveness of project activities during and implementation.

The study covered three regions from Uganda namely Western, South Western and the Northern region, while in Kenya it covered the Nakuru County which is the central part of the country and administratively recognised as an semi-independent sub-national/regional government under the devolution system of governance embedded in Kenya's 2010 Constitution. The regions were purposively selected for inclusion for strategic reasons in respect to e-participation framework due to evident varying social-economic and political factors and existence of collaborating partner networks that promote similar interests to the communities within their catchments.

A multi-methodology approach has been used in this study. Specifically quantitative, qualitative and interactive methods have been employed during the data capture exercise from the prospective stakeholders of the MML system in the selected regions. Two different data collection tools (ref appendix 7.2 and 7.3) employing two data collection techniques were used. The quantitative and qualitative methods were used to collect 1,000 data records from individuals/households using the tool in (appendix 7.2). It's first two sections focus on collecting quantitative data while the third section employed qualitative technique.

The second tool (ref. appendix 7.4) sets guidelines for interactive discussion between the researchers and the respective target focus groups. The technique employed in collecting data during discussions was interactive. It has been used to collect data from 22 focus groups.

1.1   Access to study areas/communities

Despite of the well thought criteria used in selecting the districts and constituencies where the study was conducted, it would not have been possible to penetrate the communities and conduct interviews within the planned time frame if we were not leapfrogging on the existing structures of the civil society groups other non-governmental organizations operating in the respective regions. In consultation with ToroDev, leaders of the existing civil and/or non-governmental organizations, and personal networks we also recruited regional coordinators. Their main purpose was to meet with the communities in time and make arrangements for the researchers visit. Our criteria for recruiting regional coordinators were based on (a) ones' stated experience in community mobilization, (b) if she/he is a resident and understands the main local language(s) spoken in the region, (c) and preferably currently working with civil society/NGOs - or any organisation in the region and is involved in field activities that link the organization with communities.

1.1.1   Western Region - Uganda

The study started from western Uganda region where ToroDev is based. Through ToroDev established and existing functioning network, we were able to access the communities and collect data from the planned districts of Kabarole, Kyenjojo, Kyegegwa and Ntoroko within the planned time.

1.1.2   Northern Region – Uganda

The study was successfully completed but through challenges. The northern region of Uganda covered districts of Lira, Apac, Gulu and Kitugum. The overall regional coordinator

was a staff of WOUGNET, based at Kubere Information Centre in Apach district. In Lira district the researchers were supported by staff at Transparency International Uganda. Researchers leapfrogged on the existing structures of Transparency International Uganda and linked to the communities. Also in Kitugm district, researchers leapfrogged on the structures of Meeting Point with help of the human resource officer, Freddie Anywar, linked the team to the communities to conduct the study.

1.1.3 Nakuru County – Central Kenya

The researchers worked with Dialogue Circle for Change (DCC), Nakuru. The study in central Kenya was the best organised and we successfully completed study as it was planned on time. We leapfrogged on the existing structures of Dialogue Circle for Change in the county and conducted the study in Nakuru East, Nakuru West, Naivasha, Subukia, Kuresoi North and Kuresoi South Constituencies. The coordinator was able to follow all the instructions obtained from the researchers and clustered the planned areas of visit as urban, peri-urban and rural. The study in Nakuru East and Nakuru West constituencies was done in an urban setting; Naivasha was in per-urban, while for Subukia, Kuresoi North and South constituencies was done in a rural setting but of commercial farming.

1.1.4 South Western Uganda

The study in this region was conducted in the districts of Kabale, Ntungamo, Rukungiri, Bushenyi and Mbarara. The coordination was arranged at district levels based on the researchers' network. The districts bureaucratic policy required a formal application seeking permission from the Chief Administrative Officer (CAO) to conduct research in the district. In addition, the application to the CAO is followed by the face to face detailed presentations done by the Lead Researcher to the CAO and his/her team. The CAO team is composed of the District Community Developing Officers (DCDO). We went through the bureaucratic process and successfully completed and permission to conduct research was granted.

The socio-economic status of the population in the region was relatively higher than other regions in the country. The homestead/individual survey obtained the required data records following the set criteria of the study, while the focused group oriented study held seven discussion groups meetings instead of the planned ten groups from the entire region.

1.2 The rationale of the baseline and needs assessment study

Although there are amazing preliminary data on ICTs usage and penetration in both Uganda and Kenya (in particular the mobile telephones) [3-6], it is not yet clear how the citizens and governments (local/central governments) have leveraged the possession of such ICTs in engaging each other for the purpose of promoting good governance processes and public service delivery systems.

It is evident that in Uganda, the government has been striving to extend essential public service facilities (health centres, public schools, clean & safe water points, access to relatively improved transportation systems, etc) near to the people by creation of new several districts (local government centres). However, direct participation of citizens in providing frequent data/feedback (bottom-up) on governance issues, including status of this essential service delivery to reduce extreme poverty is still inadequate. Several initiatives have been introduced by the goverment of Uganda e.g. PEAP, NAADS, etc. to mention a few, but less impact (or sometimes nothing) had been achieved. Whereas in the neighboring Kenya the

level of ICT uptake is higher than in Uganda and many ICT tools and applications are potentially available to support active citizens' participation in good governance, frequent incidents of lack of transparency and poor citizens' involvement have been reported (Kenya Transition Authority report, 2015). It was necessary to conduct a study on citizens' needs on the possession and use of ICT4D tools/equipment, citizens' information preferences and the utility of possessing the ICTs tools/equipment in particular those which are internet enabled. Therefore, for a successful implementation of the e-Participation model/system for improving good governance and public service delivery in Uganda & Kenya, it was necessary for ToroDev to commission this study.

1.3   The specific aims of the study

The specific aims of the study as stated in terms of reference are listed below:

1.3.1   Identifying

- The prevailing factors that influence general data generation

- Information access and use to promote good governance processes in the selected pilot regions. Especially the information that brings up active participation of citizens to determine priority public service delivery needs in their communities.

- Influential target groups to participate in the e-Participation project implementation and optimally utilization the e-participation system

- The ICTs tools that are critical for the success of e-participation project from the pool of ICT tools that are currently available for use by the target groups

- The nature of the communication infrastructure influencing usage of ICT tools in the selected parts for baseline study of Uganda and Kenya

- Aspects of the public policy environment that influences the gathering, access and use of data and information for planning and budgeting processes both at sub-national and national levels in Uganda and Kenya

1.3.2   Survey and clearly document the communication infrastructure

To conduct a survey and clearly document the communication infrastructure (network, broadband, and electricity) in the selected parts for baseline study (Uganda and Kenya).

1.3.3   Perform a PEST risks assessment

Perform the political, economic, social and technological (PEST) risks assessment for the e-participation project implementation in the selected pilot sites

1.3.4   Social demographics influence to project objectives

Create an interactive discussion with the target groups to establish;

- Their community needs and social demographics

- How their community needs and social demographics are likely to influence the attainment of the e-participation project objectives.

1.3.5   E-participation system recommendations

- State what the MML system should accomplish based on study findings
- Provide guidance/priority approach of developing MML system

1.4   E-participation conceptual framework

This study defines e-Participation as the participation of individual citizens and legal entities (including groups thereof) in political and administrative decision-making processes by means ICT4D tools. Further, the technology-mediated interaction between citizens and the politics sphere, citizens and administration are defined as e-democracy, e-governance respectively. Leveraging ICT4D in political participation enables public participation and feedback simultaneously, opens up a new channel for political participation while strengthening existing citizen engagement areas. However, it should be noted that these well-established notions of e-Participation as a consultative, democratic process involving citizens in policy making and monitoring the efficiency and effectiveness of public spending does not include or consider communication among citizens on informal channels such as social media.

The e-Participation literature is growing and a recommendable number of scholars and practitioners are discussing methodological frameworks for undertaking evaluation. The overall aim of establishing scientific evaluation approaches is to increase the understanding of e-Participation and consequently how to measure impact and potential opportunities.

Understanding how stakeholders perceive e-democracy and how technology is used in practice is critical if we are to establish how ICTs may be affecting democracy by changing existing practice, and affecting it as they become new instruments for achieving democracy. Similarly, how stakeholders embrace e-governance.

A common goal/understating acceptable to both the scientific community and practitioners as a driver of all e-participation initiatives is to improve the citizen's access to information and public services; promote participation in public decision-making which impacts the well-being of society in general, and the individual in particular. Consequently, the common e-Participation framework benchmarks stakeholders' participation into three categories:

1.4.1   E-information

E-information is the enabling of participation supported by the public agencies in providing citizens with access to public information without or upon demand. Access to such information becomes a motivator or activator for the success of other forms of participation.

1.4.2   E-consultation/discussion

This majorly means engaging citizens in contributions to and deliberation on public policies and services. This entails citizens who are experts in a topic of discussion, interest groups, stakeholders from the business community and civil society groups.

1.4.3   E-decision-making

This entails empowering citizens through co-design of public policy options and co-production of service components and delivery modalities. This study further subdivides decision-making into:

1.4.3.1 Transparency through third parties

Informal offers with reports concerning measures taken by the legislator or by the executive, thereby enabling public control

1.4.3.2 Applications / complaints / petitions

Offers which enable the submission of proposals or criticism to agencies and public authorities with decision-making powers, usually via intermediary institutions created specifically for this purpose.

1.4.3.3 Cooperation

Offers which are designed to enable consensus-based cooperation between administration agencies, policymakers, citizens as well as stakeholders from the business community and civil society and which lead to collective preferences and hence (also) results which diverge from initial positions.

1.4.3.4 Activism / campaigns/ lobbying

These are forms of participation where individuals or organized groups take measures which are designed to generate attention and support for topics and positions as well as particular interests and which hence contribute towards the formation of political opinion and will.

1.4.4   Concepts of e-participation evaluation

The concept of e-participation evaluation is very broad and a search over the literature unfolds completely different studies and non-comparable results regardless of the above cited e-participation framework. This study focused on the evaluation of approaches that promote the implementation of e-participation in the regions.

Several surveys have used the same approach in the process of analysing data and computing the e-participation index. In particular, United Nations has predominately used the approach in the analysis of her e-government surveys since 2003. In her 2014 survey [7], emphasis was put on the evaluation of the availability of the facilities for the three levels of e-participation (e-information/e-consultation/e-decision-making) rather than actually measuring usage.

The e-participation philosophy is all about promotion of citizens and government engagement for the purpose of raising the wellbeing of humanity. Consequently, the e-participation paradigm aims at bringing a shift from "passive" to "active" engagement that leads to true citizens' empowerment which is the cornerstone condition for sustainable development. Therefore, the researchers' perspective for this study is that a more appropriate e-participation evaluation approach should look at both the availability of facilities for the 3-stages/levels framework explain above, as proposed by the United Nations (UNDESA,2014), and the extent to which citizens actually use such facilities over time. Such an evaluation approach should, therefore, be adopted by the implementers of the proposed MML e-participation system.

2   MODELLING AN E-PARTICIPATION SYSTEM

The above perception of providing research and evaluation consultancy services covers the entire life span of the proposed e-participation project. The proposed model is not only restricted to the baseline study phase whose objective is to provide an information base with benchmarks for the current status against which to monitor and assess the implementation progress of the e-participation system, but it will also be extended to the quarterly reviews and after project completion to test the effectiveness of the decision that shall be taken as the output of this baseline study.

The top stake of e-participation (e-information sharing, e-consultation/discussion, e-decision-making) is to arrive at decisions owned by both the citizens and governments – at both sub-national and national levels. Such pro-people decisions are expected to lead to good governance and prompt delivery of expected services to the public, consequently improving the well-being of all stakeholders. The consultants view the state of the problem as being much of a practical development of an engagement artefact that aids citizens and duty-bearers in reaching conclusive decisions based on scientific facts in a shortest time as possible. Consequently, researchers base this study on decision theory, since it is one of the popular theories that provide the premises on which to address such problems (i.e. participatory solution development) [8-10]. Researchers further undertook the same approach (using decision science) in modelling a solution used in this study. In addition, decision analysis methods were used in the development of indicators for the present status of e-participation levels in the piloted study regions.

2.1   Theoretical background of the e-participation modeling

In respect of the aims of project objectives, the theory behind the development of the required solution was based on multi-criteria decision analysis (MCDA). This approach provides a means to systematically structure and analyse complex decision problems. In the literature of decision science it is known that MCDA category offer the most coherent forms of decision analysis with which to aid participatory processes [11-14]. Consequently, MCDA was preferred for this study that aims at delivering recommendations to be used as a basis for developing an e-participation system to aid citizens and duty- bearers in reaching conclusive public policy decisions based on scientific facts. Further, MCDA provides decision-makers with a better understanding of the trade-offs involved in a decision, e.g., between economic, social and environmental objectives (criteria). MCDA is akin to social choice theory, but differs in relation to some important aspects. Instead of having decision-makers express themselves directly with regards to the alternatives, they express preferences (weights, or relative importance) for different criteria (perspectives) that are to be included in the evaluation of the available alternatives. Moreover, the decision-makers do not solely rely on their own judgements, but, additionally on the performance assessments of the alternatives on the criteria, which are often performed by domain experts. This adds a cognitive dimension, but also relaxes the alternative focused approach, where great prestige can be attributed to the success of a particular alternative in the decision outcome. Separating the issues of values and facts, rather than focusing on alternatives, can also broaden the view of participants and open up their minds to more flexible thinking. Traditional MCDA software has typically been used by analysts, but extensions to traditional MCDA could provide the means to support democratic decision making by adding interactive parts for citizens to include them in the MCDA process.

The number of MCDA applications has increased during the last decade, but behavioural issues have not received a significant amount of attention, although the identification of such problems and the call for research within this realm has been long recognized. A widely discussed practical difficulty in the use of MCDA models for decision making is in relation to the elicitation of decision data.

Multi-Attribute Value Theory (MAVT) and Multi-Attribute Utility Theory (MAUT) are the oldest and most widely used MCDA methods in practical applications. The relative importance of each criterion is assessed, as well as, value functions, characterizing the satisfaction of the alternatives (according to the decision-maker) under each criterion, and thereafter the overall score of each alternative is calculated.

The weights, that is; the relative importance of the evaluation criteria, are a central concept in MAVT/MAUT methods and describe each criterion's significance in the specific decision context. This significance information refers to the decision-maker's opinions and represents his/her individual preferences regarding the decision problem at hand.

The elicitation of weights is a cognitively demanding task, and while the elicitation steps of the decision making process have been acknowledged as being problematic for quite some time, the process of eliciting adequate quantitative information from people remains a challenge. When including citizens in an MCDA process, additional demands are placed on the elicitation methods to adapt to the users and context.

Different situations call for different levels of exactness, depending on the decision-makers' abilities to provide exact judgements. The conventional demand for numeric precision within elicitation is unrealistic for several reasons, e.g., due to people's problems of judging and expressing exact values. The elicitation of exact weights demands an exactness, which may not even exist in the mind of the decision-maker. Consequently, the use of more imprecise weight elicitation methods within participatory settings is a reasonable objective.

2.2 Modeling a multi-criteria e-participation assessment system

2.2.1 Criteria modeling

To achieve an overall assessment of global e-participation, a consistent family of criteria is built according to the classical multi-criteria modelling methodology as discussed above. According to this methodology, a multi-criteria evaluation system should be composed from criteria that respect the monotonicity, exhaustiveness, and non-redundancy properties. To do so, all the "evaluation elements" in the context of e-participation are analysed to model a hierarchy of aspects, dimensions, and criteria/alternatives. Similarly, in the context of multi-attribute utility theory (MAUT), a hierarchical structure is used in order to model objectives, attributes (achievement of objectives), and values. Thus, in addition to the previous properties, suggest that the set of criteria, as well as their hierarchical structure, should be operational, decomposable, and minimal. In particular, fundamental objectives may help in creating and evaluating alternatives, and guiding the entire decision-making process, while their hierarchy should be essential, controllable, complete, measurable, operational, decomposable, non-redundant, and concise.

2.2.2 The Global Goal (Developing an e-participation Assessment System)

Even though the development of e-participation assessment systems is expected to remain in the scope of its definition, this study takes a holistic approach that leads to the inclusion of ICTs infrastructure and investment/affordability issues. Limited ICTs (a) infrastructure (in particular for the internet access), (b) literacy and skills, and (c) high poverty levels in communities are common phenomenon in developing countries that hinder citizens leveraging the internet benefits. It would not be wise to perform an assessment study for e-participation without putting these pre-condition issues that lead to optimal exploitation of the e-participation system under consideration. Consequently, this study put these issues under consideration and treated them as pre-conditions for e-participation systems take-up by the citizens and organizations based in developing countries like Uganda and Kenya, in this case.

The use of a multi-criteria method in the context of evaluating e-participation for improving governance & public services delivery frames the problem's evaluation aspects into a number of points of view as follows: (i) infrastructures, (ii) investments/Affordability, (iii) e-processes/e-participation, and (iv) users' capacity/attitude towards e-participation. These aspects or dimensions of view are then grouped and sub-aggregated to model the final evaluation criteria and alternatives as indicted in figure 1 below.

| GOAL | Aspects / Points of view | Criteria | Alternatives |

Figure contents:

GOAL: Global e-participation assessment

Infrastructure
- % end-users with Internet access (PCs, or any other handheld equipment) at of household/ individual level → Has Internet access
- % end-users accessing the Internet from public / local council Internet access points (e.g. public libraries, NGOs, local council, etc.)
- % end-users accessing the Internet from private sector access points (e.g. Internet cafes) – i.e. pay per access time → Has broadband Internet access
- % of end-users accessing the internet from work place (offices or schools – for students)
- % of end-users with access to radio
- % of end-users with access to a TV → Has media access (Radio, TV)

Affordability/Investments
- % Estimated annual budget of connectivity → Has budget for connectivity/ Internet
- % Estimated annual budget on telephone → Has budget for phone usage
- % Estimated annual budget on ICTs (radio, TV, etc.) → Has budget line for ICT and R&D

E-participation
- Information → Available, upto date information
- Consultation
- Transparency through third parties
- Complaints / applications / petitions → Easily usable online applications
- Cooperation
- Activism / campaigns/ lobbying

Users willingness / attitude to e-participation
- % of citizens online engagement with goverment → Citizens' online Interaction with government
- % of users for obtaining business information
- % of users downloading business information → Businesses' online interaction with government
- % of users' attitude on e-service delivery
- % users' experience on government portal → Users' experience on e-participation
- % of citizens' online interaction with government

Figure 2.1: Model of e-participation evaluation system

2.2.3 Criteria/Alternatives analysis

The alternatives are the atomic elements at the lowest level of the model. As there are no further sub-criteria, they are the elements to be assessed/ judged. We determined these alternatives based on the prevailing ICTs environment in the study regions in respect of e-participation conceptual framework. Consequently, the study collected raw data from the respective regions from which benchmark points shall be computed and be used in future as yard sticks for monitoring e-participation project progress and its impact.

The synthesis is performed by multiplying the criteria-specific priority vector of the alternative with corresponding criterion weight and summing up the results to obtain the final composite of the alternatives' priorities with respect to the goal. The highest value of the priority vector indicates the best-ranked alternative.

2.2.3.1 g1: access to the web/electronic communication

This criterion expresses the percentage of households, individuals and organizations that have access to the Internet (web) by any means. It is clear that e-participation cannot exist without basic infrastructures including web access and/or electronic exchange of information or communication. For this baseline study, the source of representative data for specific regions was directly collected from the field.

Consequently, the outcome value of the alternative/criteria present the percentage of each region's stakeholders (individuals, households and organizations) with access to the internet and/or electronic communication, hence the possibility of such region's community to be engaged in the e-participation (online/offline).

2.2.3.2 g2: broadband Internet connection

It shows the percentage of each region's households, individuals and organizations with a fixed broadband Internet connection. Consequently, the outcome value of the alternative/criteria presents the percentage of each region's households, individuals and organizations with a fixed broadband Internet connection.

2.2.3.3 g3: gross domestic product (GDP) on ICT and research & development (R&D)

This criterion indicates the percentage of each region's GDP invested on ICT and R&D. The data for each region's R&D expenditure was obtained from districts local governments.

2.2.3.4 g4: local governments/district portals

Local governments/districts show each region's maturity on online service delivery. The data composing this criterion came directly from local government headquarters or from the parent central government ministries. The local governments/districts portals assess online service delivery against a 5‐stage maturity model: (i) information, (ii) one-way interaction, (iii) two-way interaction, (iv) transaction, and (v) targeted interaction/automation.

2.2.3.5 g5: e-participation

This criterion expresses the interaction achieved between governments/duty-bearers and citizens regarding information sharing, e-consultation and e-decision making. A region's strength in e-participation is measured against three benchmarks: e-information sharing, e-consultation and e-decision making. In other words, it is measured: (i) if each local/national government publishes information online on items under consideration, (ii) if there are ways for the public to engage in consultations with policymakers, government officials and one-another and (iii) if citizens are empowered to directly influence decisions, for example, submitting petitions, voting online for an issue, etc. The interaction between governments and citizens is achieved using popular web tools and/ electronic applications such as blogs, chat rooms and SMS as well as social media such as Facebook, Twitter and other social networking tools.

Even though this is the core of the study, e-participation meaningful assessment cannot be done alone without considering other discussed criteria.

2.2.3.6 g6: citizens' online/electronic interaction with government

This criterion indicates the percentage of citizens that are already using the web/electronic means to interact with authorities. That is human capacity/literacy level. The data was obtained directly from the field or local government portals. In this alternative, the assessment of the elements in the upper dimensions (sub-criteria) can equally be aggregated to form the criterion values: (i) % citizens obtaining information electronically from government websites, (ii) % citizens downloading forms from the aforementioned websites, and (iii) % citizens submitting electronically completed form back to the websites.

2.2.3.7 g7: businesses' online/electronic interaction with government

This criterion indicates the percentage of businesses using the web or any electronic means to interact with authorities. The data was directly obtained from the field, unlike criterion 6, this criterion is business-focused. It is equally composed of three dimensions: (i) % businesses obtaining information electronically from authorities' websites, (ii) % businesses downloading forms from the aforementioned websites, and (iii) % businesses submitting electronically completed forms back to the websites.

2.3   The analytical framework of the model

The main target of the methodological frame was the assessment of a multi-criteria additive value system that is described by the following formulae:

$$u(g) = \sum_{i=1}^{n} p_i u_i(g_i) \tag{1}$$

$$u_i(g_{i*}) = 0, \qquad u_i(g_i^*) = 1 \ for \ i = 1, 2, ..., n \tag{2}$$

$$\sum_{i=1}^{n} p_i = 1, \qquad\qquad p_i \geq 0 \qquad for \ i = 1, 2, ..., n \tag{3}$$

Where $g = (g_1, g_2, ..., g_n)$ is the performance vector of a region on the n criteria; g_{i*} and g_i^* the least and most preferable levels of the criterion g_i, respectively;

$u_i(g_i), i=1,2,...,n$ are non-decreasing marginal value functions of the performances $g_i = 1, 2, ..., n$ and p_i is the relative weight of the ith function $u_i(g_i)$. Thus, for a given $region \ a, g(a)$ and $u(g(a)$ represent the multi-criteria vector of performances and global value of $region \ a$ respectively.

3 METHODOLOGICAL APPROACH

3.1 Sampling and preparation

The study adopted a purposive sampling strategy. This non-probability sampling technique was adopted because of the clear requirements of the study that demanded the identification of influential target groups to participate in the e-participation project implementation and optimally utilization e-participation system. In view of the existing empirical data [15-17] that revealed the different characteristics and varying levels of ICTs literacy coupled with hands-on skills deficiencies within the target groups/population, it was prudent to adopt the purposive sampling technique to lead us to specific population clusters in the regions with capacity or required less training to attain a capacity[1] to optimally utilize e-participation system especially during the pilot phase of the project.

Consequently, a three level purposive sampling was performed in every region of the study in order to achieve a sample entity/object that suited the intended project objectives.

3.1.1 First level of purposive sampling

The first level considered an administrative unit demarcated at a size of a district or constituency. The district demarcation applied to Uganda while in Kenya it is a constituency. The specific criteria for selecting a district/constituency were based on the following:

3.1.1.1 Household Characteristics

• The total number of households in a district/constituency.
• The total number of households using electricity as source of lighting in their homes
• The percentage of households depending on subsistence farming. The lower percentages were preferred.
• The percentage of households reported to receive remittances

3.1.1.2 Population Characteristics

• Reported working population size aged above 15 years. Areas with high working population where preferred
• Reported population size having completed secondary level. Areas with higher secondary level graduates were preferred.
• High literacy levels for people aged above 18 years.

3.1.1.3 Cultural differences

• The biggest population of inhabitants in each district/constituency considered in the study had a different cultural setting from the other considered districts/constituencies in the same region.

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[1] Possession of basic skills to enable one engage leaders (office bearers) using ICTs tools. ICTs tools considered are (i. a computer with Internet connection, ii. a mobile phone, iii. i or ii and a radio, iv. i. or ii. a Television).

3.1.2 Second level of purposive sampling

The second level considered sampling of homesteads/individuals. The specific criteria for selecting a homestead/individual were based on the following:

3.1.2.1 Household Characteristics

- The total number of households in a district/constituency.
- Does the household use electricity as source of lighting in their homes
- Not all members of the household depend on subsistence farming. Households with lower percentages depending on subsistence farming were preferred.
- Does a household receive remittances from members or friends or external business

3.1.2.2 Individual Characteristics

- Aged 15 years or more and involved in any legal work that earns him/her a living
- Completed secondary level and can read and write
- Possession of a mobile or knowledge of ICTs usage

3.1.3 Third level of purposive sampling

The third level involved focus group sampling within a district/constituency. The sampling aimed at establishing groups' needs and setting strategies on how the MML system would cater for their different interests.The specific criteria for selecting a focus group were based on the following:

- Group of people with common factor of identification (i.e. identified as the youth, PWDs, women, politicians, farmers, etc.)
- A group of people engaged in one (all together) or similar activity of income generation or wealth creation, promoters of government or NGO programs, civil rights, etc.
- A legally established/registered group of people with a common cause of action
- A group with a membership of more than 5 people
- A group with established and recognized leadership structure, i.e. executive body and committee members

3.2 Design of evaluation questions and target audience

The criteria for formulating evaluation questions and selection of target audience for interviews were based on the terms of reference (TOR) and/or aims of the study. It is upon these aims that we derived the evaluation questions. We further aligned the evaluation questions along the three levels of e-participation (e-information, e-consultation, e-decision-making). Refer to section 7.1.3 for e-Participation key premises. Although e-participation is a two way form of communication (i.e. between the government/duty-bearers and the citizens), the government is expected to give a lead in setting up areas of online services that opens the channels to citizens for online participation in public affairs. Therefore, in the process of consultation/interview questions formation, we assumed the basic premise that governments (local/central) and other stakeholders (NGOs, private sectors) provide some platforms and archived information (e.g. policies, budget, legal documents, etc.) on her activities to the citizens.

3.2.1 Categorization of evaluation questions

Questions developed and included for the purpose of investigations during the baseline study were classified into two broad categories:

3.2.1.1 Needs assessment

The purpose of the needs assessment was to find out whether the citizens and government offices possessed the prerequisite ICTs infrastructure for e-participation. Therefore, all investigations were geared or directed to establishing the availability, affordability, human capacity and willingness to possess ICTs to use for participation. The investigations in this area included but not limited to;

- ICTs infrastructure requirements for both citizens and local/central governments. Responses from such interviews/survey should enable the researcher to prove that the participants (citizens and office bearers) both have or have no the necessary ICTs infrastructure to use (communication, media)
- Prerequisites for using the ICTs equipment (electricity/power and communication coverage i.e. telecommunication, Internet, radio, TV)
- Human capital (knowledge, skills limit levels of - capability for using the ICTs/Internet tools as the media for the engagement)
- Willingness/interest to - i) possess ICTs equipment, ii) learn/be trained in usage, iii) be involved in the online engagement for the purpose of improving governance and public services delivery
- Resources/affordability – personal/office budgets for acquisition of ICTs infrastructure and periodic subscription of connectivity

3.2.1.2 Questions towards e-Participation evaluation

E-Participation is the central theme for this study. Consequently questions herein led to establishing what was on ground in view of top-down engagement (i.e. government–led initiatives) and/or ground-up engagement (i.e. efforts by NGOs, civil societies, etc. to empower citizens and/or engagement with the office bearers), possible approaches for operationalizing and human capacity in ICTs/Internet applications usage, willingness and readiness to participate in e-participation initiatives. The focus of investigations/questions in this area was, but not limited to;

- Establishing if there existed any initiatives (top-down and/or ground-up engagement) in the selected parts of Uganda and Kenya
- What is available in respect of services that offer (e-information sharing, e-consultation, e-decision-making) and if they can be accessed online from the respective portals
- What types of ICTs tools are available or lacking to optimally utilize the services?
- If services are available how the services are actually used
- What has and has not been achieved in the dimension of good governance and public services delivery engagements?
- What available social demographics in respect of e-participation?
- Stakeholders' adaption to ICTs technologies and willingness to participate in any online or offline initiative for improving good governance and public services delivery
- Possible risks and/or opportunities that would accrue or are accruing from e-participation initiatives

3.2.2　Target audience

The target audience in this study is classified into four categories as follows:

3.2.2.1 Government officials/duty-bearers

From the perceptive of top-down engagement (government-led initiatives) e-participation involve a cross section of government officials/duty-bearers. This target group involves the following but not limited to:

- Officials supposed to setup or setting up and administering the government-led initiatives (i.e. custodians of government policies, bills, publishers/managers of government portals, community-government liaising officers, e.tc.)
- Any other office bearers with responsibility of public service deliveries and information and communications
- Elected representative or officials in positions of representing/linking the electorate with the government (i.e. may or may not be actors of e-participation)

3.2.2.2 NGOs and civil societies

Among the many NGOs and Civil Societies that might be serving the communities in selected parts of our baseline studies, we are interested in those that:

- Promote the usage of ICT in empowering the communities
- Activists for promoting democracy, good governance, people's rights, etc.
- Leaders and members of community of practitioners on accountability and social action in various public sectors, e.g. health, education, etc.

3.2.2.3 ICTs Services operators

Especially Internet access/services providers, telecom companies, and professional individuals in public or private sectors interested in supplying online tools/technologies.

3.2.2.4 Media houses

The study included the media tools in particular the radio and television among e-participation tools assumed to be accessible by the citizen for the smooth implementation of the MML system. Therefore study includes the media houses and therein crew as the target audiences for interview

3.2.2.5 General community members/citizen

This category forms the masses of the community. Members of this target category fulfil the set criteria stated in section 3.1.2 above.

3.2.2.6 Focus groups

These were special groups of citizens and office bearers with specific common interest that brought them together (e.g. an economic sector) or people with common characteristics in the society. The data to be collected from respective groups was purely qualitative. The study categorized them as follows:

3.2.2.6.1 Political and administrative sub-group

The group was formulated to include office bearers and elected representatives of the people in public offices. Under the modulation of the consultant, all discussions focused on the envisaged features of the MML systems that would do in respect of e-democracy and public service delivery. Sample guidelines for provocation but not limit were aligned as:

- Check out interest for an ICT system to facilitate interaction with other leaders, Government agencies and electorate
- Any information that could be availed on line (on computer, mobile phone any other ICT device of choice) and which priorities
- Consultation and on which topics/subjects
- In decision making – MML system enabling online decision-making and availing leaders (people/electorate representatives) with empirical evidence of their people/electorate decision on particular issues in discussion, etc.

3.2.2.6.2 Farmers group

The group was formulated to include people whose main source of income is from farming but not at peasant's level. The group discussion focuses mainly on what MML systems would do in respect of e-agriculture and public service delivery. The researchers first checked on government agenda for modernization of agriculture and service delivery sector, and provoked the farmers for their wish list in respect of what system that enables online engagement between farmers and the government/office-bearers should support. Below were the sample guidelines for provocation but not limit to:

- Linkage to government information that is vital to farmers (farming literacy, farm input subsidies, present medium for engagement with extension workers, accessing recent agriculture research findings from government research centers, etc.)
- Access to respective government policies, bills on (crop, husbandry, fisheries, etc.)
- Consultations and access to government agriculture specialists, etc.
- Involvement of farmers in decision making in respect of agricultural sector

3.2.2.6.3 Women sub-group

The group was formulated to discuss with women associations in the respective regions. The researchers would first give a further insight on what MML systems would do in respect of linking and/or providing a medium for women engagement with office-bearers directly dealing with women issues/programs. Preparation required before discussion is that the consultant first checks on government agenda (also include public and private national associations' programs) for women and find out if any of the agenda is being implemented in the region. Hence would provoke the women for their wish list in respect of what system that enables online engagement between women/women associations with government/office-bearers would provide. Below is a sample guideline for provocation but not limit to:

- Access and dissemination of government information, e.g. gender policies, domestic and violence acts, gender based violence, elimination of female mutilation acts, traffic of in-person act, etc.
- Consultations in-progress on women national programs, bill development, etc. e.g. marriage and divorce bill, Uganda women entrepreneurship program, etc.
- Involvement of women in decision making at local/central government levels.

3.2.2.6.4 Youth sub-group

The sub-group was formulated strictly for the youth. The discussion moderator first gave a further insight on what an e-participation system would do for youth in respect of information access and and/or providing a medium for engagement with office-bearers in respect of good governance and services delivery. The modulator first checked on government programs for youth and find out if any is being implemented in the region. Thereafter, provoked the youth for their wish list in respect of what a system that enables online engagement between youth with government/office-bearers should provide/do. Below are sample guideline used for provocation but not limit to:

- Access and dissemination of government information to youth e.g: (a) Youth policy – with its focus on employment opportunities for the youth, (b) Youth livelihood program: focusing on building youth capacities, how to establish their own enterprises, access to markets for their products, access to funding or source of soft loans, etc., (c) Youth reproductive health programs, and (d) Girl child adolescent program – a social program specifically targeting girls from getting early marriages which gets them from schools.
- Consultations in-progress on youth programs. Programs where the youth reports on issues of their concerns, e.g. (a) Street straight talk, (b) Report the issues, and Youth helpline.
- Involvement in decision making

3.2.2.6.5 People with disabilities/special needs (PWDs) sub-group

This sub-group strictly composed of the PWD. The researcher moderated the discussion by first giving a further insight on what an e-participation system would do for PWD in respect of information access and and/or providing a medium for engagement with office-bearers. Check on government polices/programs for PWDs. Further provokes them for their wish list in respect of what a system that enables online engagement between PWDs with government/office-bearers should provide. Sample guideline for provocation but not limit to:

- Access and dissemination of government information to PWDs, e.g. PWDs policies on new construction buildings, Television news telecast,etc..
- Consultations in-progress on PWDs bills and policies, etc.
- Involvement in decision making

To capture quality data in planned time, our survey design put in consideration among others the following issues:

- Scope, coverage, & characteristics of the survey (focus - the selected parts of the country)
- Sampling focus (individuals, households, groups and media houses – at individual level)

4 A SUMMARY OF THE EMPIRICAL FINDINGS OF THE STUDY

The Interpretation of the data is discussed along the terms of reference of the study.

4.1 Influential target groups

The terms of reference required the identification of influential target groups to participate in the e-Participation project implementation and optimally utilization MML system. This study defines "influential target groups" as proactive[2] group members [18]. We assessed the proactivity in the field study through interviews and in-depth discussions with focus group members in the dimensions of;

- Access to ICTs tools

- Interest and willingness to participate

- Internet readiness

- Level of civic responsibility

4.1.1 Access to ICTs tools

For any member to participate in the e-Participation project and optimally utilization MML system must be having access to ICTs tools. This is one of the preconditions put forward in establishing the influential groups. Also we investigated the possession/ownership of the ICT tools and their average monthly expenditure from the users that reported to be having access. The monthly expenditure was only limited to connectivity costs paid to the service provider.
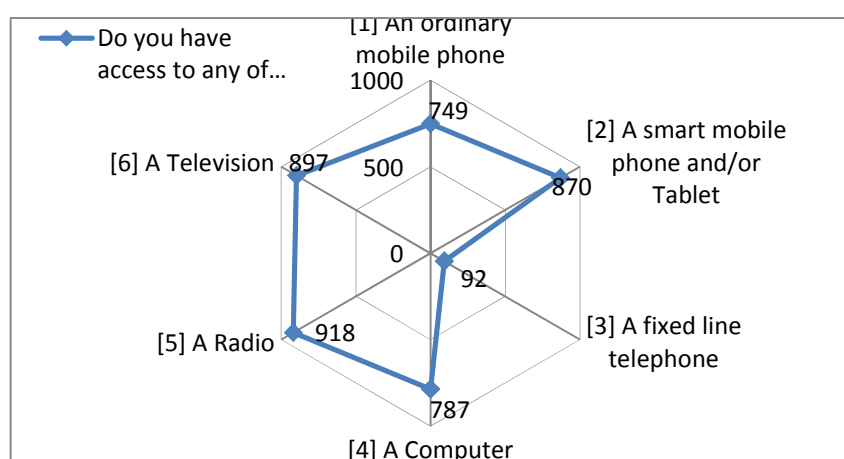
Figure 4.1: Accessibility to ICTs tools

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[2] A group member who takes responsibility for his or her life, rather than looking for causes in outside circumstances. That is group of people with courage, perseverance, individual responsibility and awareness of the existence of choices, regardless of the situation or context

Figure 4.1 show that everybody has access to more than one ICTs tool because the maximum number of interviewed people was 1000. Among the six ICTs tools indicated in the figure, no single ICT tool that is accessed by all the people interviewed. From the study, a radio is the highly access ICT tool, followed by a television, smart phones in the third position and ordinary mobile phone in the fourth position and computer (laptop, PCS) in the fifth.
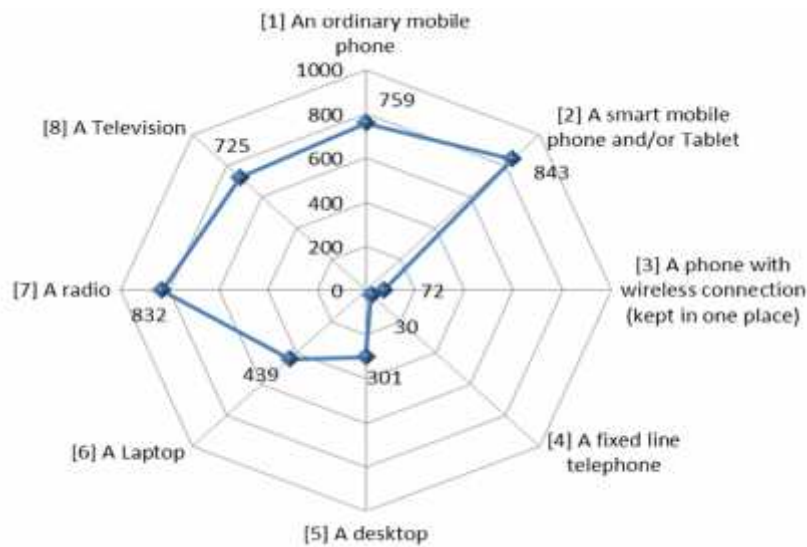
Figure 4.2: ICT tool ownership

Figure 4.2 show the ownership of the ICTs tools generated from the field study data. In the sample of 1,000 people, smartphone is the category of the ICTs tools that is highly owned, radio in the second position, then an ordinary GSM phones in third position and television fourth position.
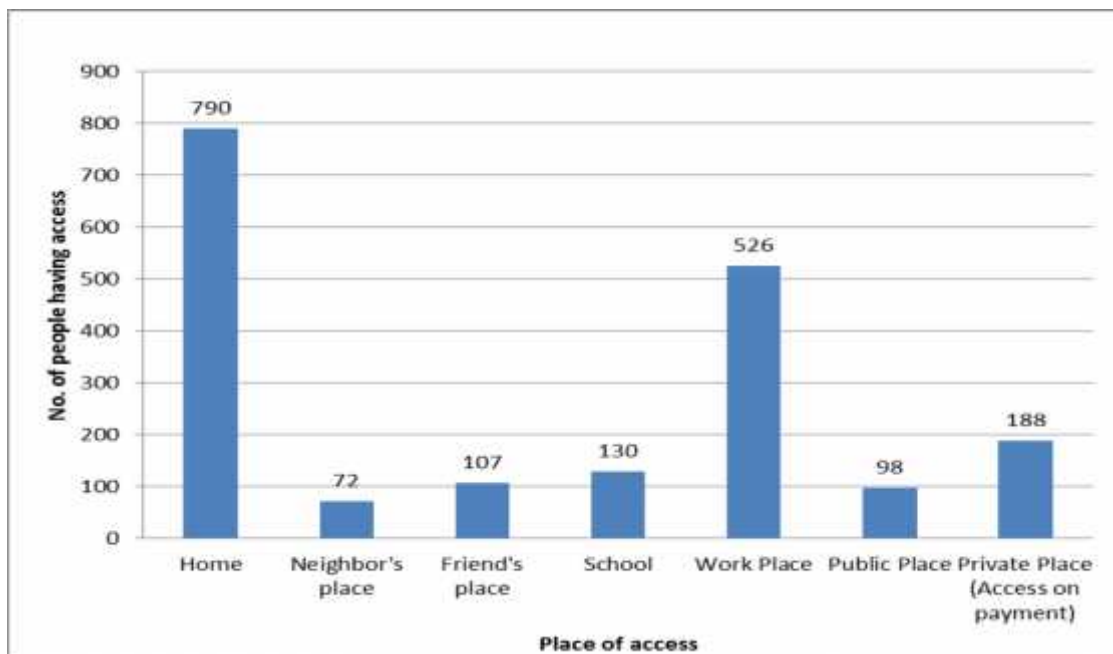
Figure 4.3: Places of Access

Figure 4.3 shows places where people access the ICTs tools. In the sample size of 1,000, 790 respondents reported to be accessing the tools from their homes. The second popular place from which to access the tools was reported by 526 respondents as the work place. Private

places (that require payment of money for the period of use – e.g. Internet cafes, telephone callboxes, etc.) became the third in positions of access, followed by schools, in the fourth position. Therefore, it should be noted, people access ICTs tools from places that carries a cost. Considering places of access like home followed by private might turn up high numbers of e-participation than considering home followed by work place[3].

4.1.2 Internet Access

4.1.2.1 Internet access using telephones

In our sample of 1,000 people, 865 respondents reported to be using their telephones to access the Internet while 37 responded not to be connecting to the Internet as indicated in figure 4.4.
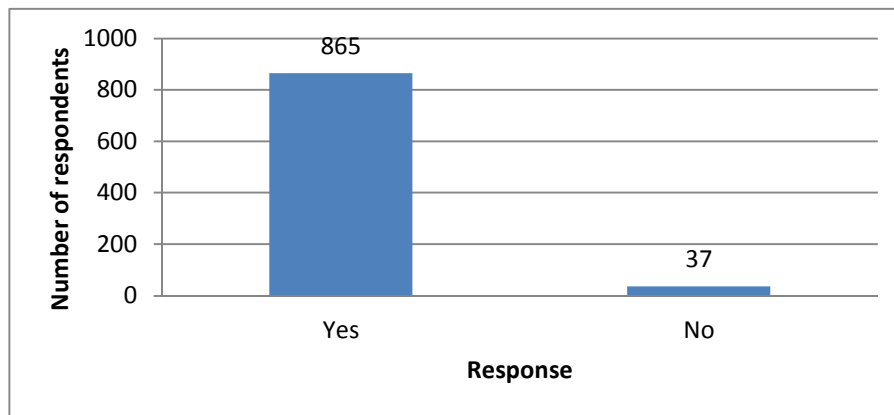
Figure 4.4: Response to Internet access using the a telephone

In view of the multiple services/benefits of the MML system envisaged to bring to communities, we further investigated the types of wireless mobile telecommunications technologies of their telephones. It is necessary for developers of the MML system to be informed on the types of infrastructure and technologies possessed by the communities. Findings of the generation technology of the respondents' phones are indicated in figure 4.5.

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[3] Hint: the designers of the MML system (as well as the organisers of engagement sessions e.g. the e-discussion) should take note of where the target groups get ICT tools access from and the appropriate time for engagement. Even though a good number of people have access from work places, they might not be in position to be involved in any ongoing program during working hours. According to the respondents, access and use is limited to work places tasks/duties.
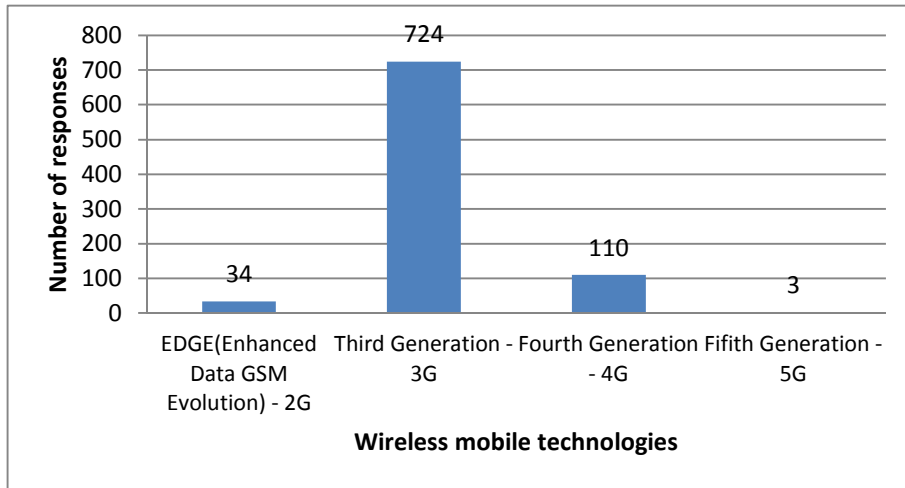
Figure 4.5: Wireless mobile telecommunications technologies in use

4.1.2.1.1 *Estimated monthly Internet expenditure – access through the phone*

Figure 4.4 below show the estimated respondents' monthly expenditure for telephone connectivity. Out of the sample size of 1000 people, 837 respondents were knowledgeable of their phone expenditure and reported to be paying for connectivity directly to the services/network provider. As indicated in the figure below, 58% of the respondents indicated to be paying between UGX10,001/= to 35,000/=. While 16% pay more than Shs.35,000/= which is on the higher side of usage for an average citizen.

Only 20 which comprises of 2% respondents acknowledged the access to the Internet using their phones but were not able to estimate the monthly expenditure for their connectivity. This type of respondents comprised of a group who do not pay for themselves while another group indicated of total ignorance about their telephone accountability.
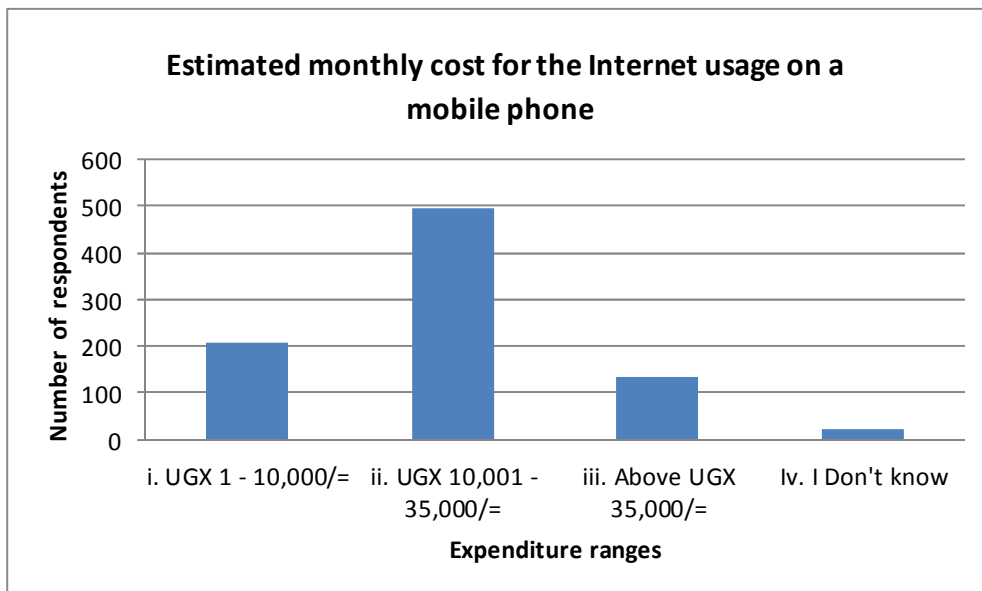
Figure 4.6: Estimated monthly expenditure for phone connectivity

4.1.2.2 Internet access using computers

In a sample size 1,000 respondents, 539 reported to access the Internet using computers (laptops and desktops) while 85 have computers but do not connect to the Internet as shown in figure 4.7.

Further, we investigated the types of technologies in use to connect to the internet. As indicated in figure 4.8 below, most of the respondents connected to the internet using a wireless modem (dongle). Respondents used multiple technologies to connect to the internet depending on their financial capabilities and the use of internet. The existence of multiple technologies manifested the availability of the required infrastructure to enable the implementation of the e-participation. It was also necessary for developers of the MML system to be informed on the types of infrastructure and technologies used by the communities. Accordingly this calls for a scalable system.
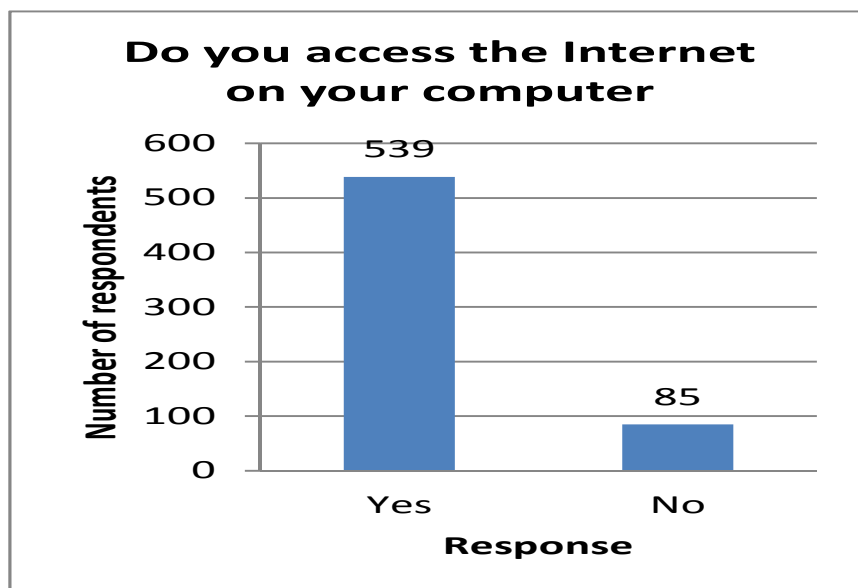
Figure 4.7: Internet Access Using Computer
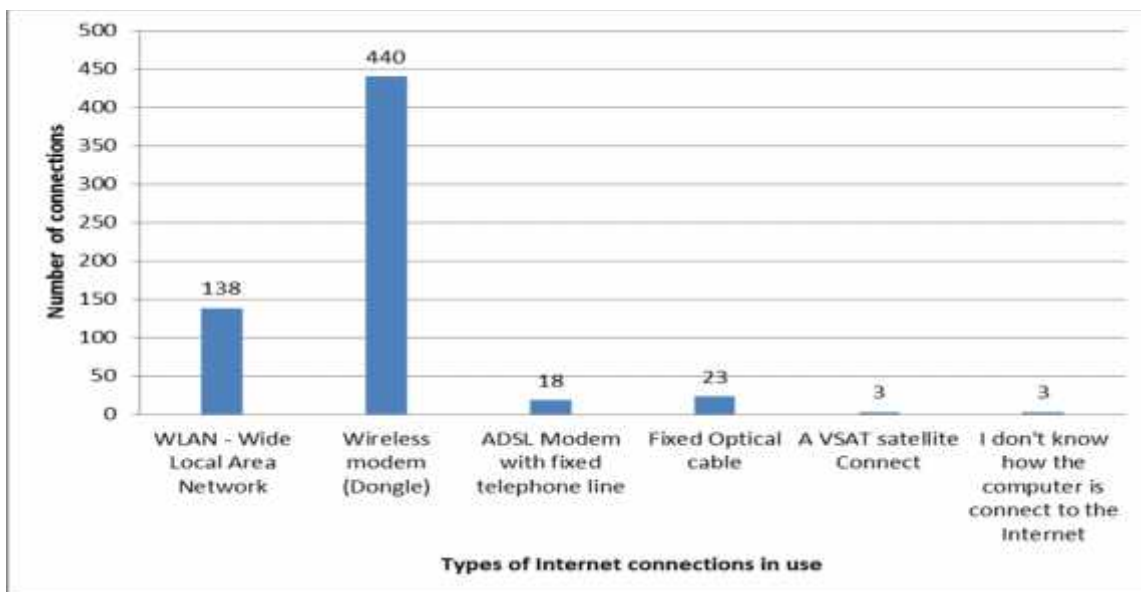
Figure 4.8: Types of technologies for Internet connection in use

Figure 4.9 below show the estimated respondents' monthly expenditure for Internet connection using computers. A total number of 470 respondents were knowledgeable of their Internet expenditure and reported to be paying for connection directly to the services/network provider. As indicated in the figure below, 76 (14.2%) of the respondents indicated to be paying below UGX10,000/=. While 281 (52.4%) pay between UGX10,001/= to 50,000/= and 113 (21.1%) pay more than UGX.50,000/= which is on the higher side of usage for an average citizen. The fourth group gave a response of "I don't know", comprised of 66 (12.3%) respondents acknowledged the access to the Internet using their computers but were not able to estimate the monthly expenditure for their connectivity. This group of respondents could be dived into two sects. The first set does not pay Internet charges by themselves while the second one indicated total ignorance about their Internet accountability, ground that the always pay as go in volume bundles.
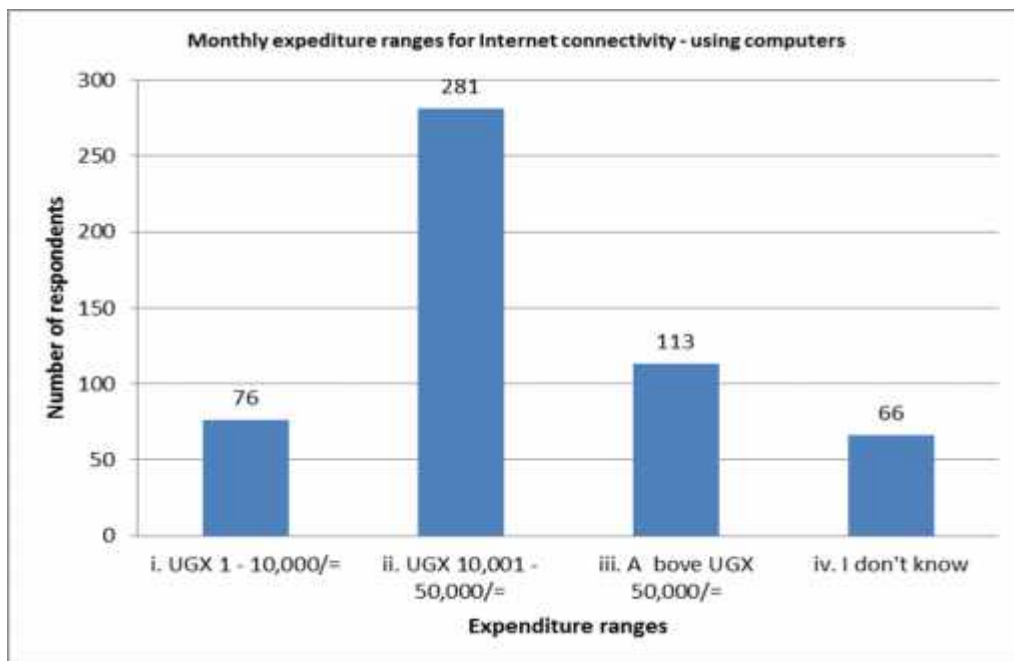
Figure 4.9: Monthly expenditure ranges for Internet connectivity on computers

4.1.2.3 Determinate variables for Internet connection

The study findings established that the level of expenditure for the Internet connectivity especially using the telephone as the medium tool for connection has a correlation with age group and nature of work the respondent is involved in for one's livelihood. The findings stem from categorising the source of livelihood into 7 classes and associated each respondent to a corresponding class according to ones work/job that earns him/her a living. The responses of the livelihood are indicated in figure 4.10. Similarly the study classified respondents according to their age groups as indicated in figure 4.11 below.
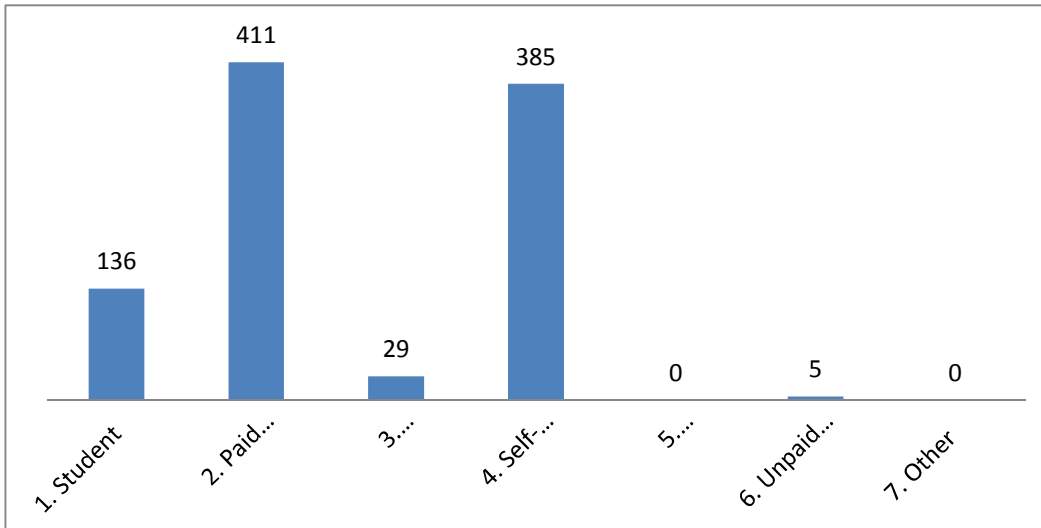
Figure 4.10: Source of livelihood
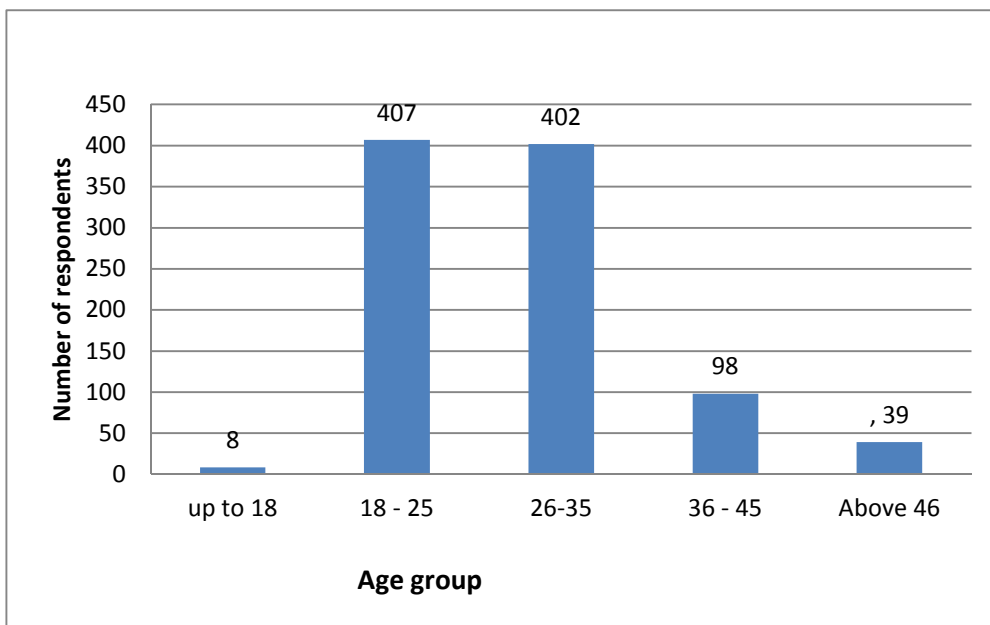
Figure 4.11: Age groups of the respondents

Based on the data there was a strong correlation between livelihood types, Internet expenditure and ages groups. The data shows that the livelihood type of (a) paid employed and (b) self-employed, either in the age range of 18-35 years heavily use the Internet. Consequently, the correlation among such variables contributes in establishing the characteristics of the influential group which is discussed in section 4.5 below.

4.1.3 Interest and willingness

Interest and willingness to participate in any activity is a self-motivated instinct. This study investigated this phenomena stemming from the present usage of ICTs tools and the users' interest and willingness to extend their usage to a few more types of tasks to get more services through engagement with their leaders.

The main investigation focused on how the citizens leverage the basic GSM infrastructure that support the mobile telephony claimed to have national penetration of 64.3% [4] in Uganda while in Kenya the penetration is stated to be 80.5% [19].

The criteria for establishing ones (or a group of individuals) interest and willingness was based on the following:

- Level of utilization of present ICT tool in possession along multiple directions of;
  o Voice calls
  o Data transfers/exchanges
  o Sending and receiving SMS
  o Connecting to the Internet
  o Entertainment/multimedia tool
  o Listen to the radio
  o Instant alerts on my peers activities – social network
- The level of participation in some of the occasional local or/and national programs using the methods of face to face, media and electronic social networks
- The frequency of participation along the dimensions of;
  o Personal transactions and businesses
  o Accessing information from government departments
  o Citizen's consultations, i.e. when the government calls on citizens for contributions and deliberation on public policies and services.; e.g. land-bill, same sex bill, marriage and divorce bill etc. this can be at local or central government
  o Transparency through third parties
  o Applications/complaints/petitions
  o Cooperation - enable consensus-based cooperation between administration agencies, policymakers, citizens.

4.1.3.1 Interest and willingness - Level of utilization of present ICT tool in possession

This study considered mobile phone, computer, radio, television all in companion with the internet as the ICT tools to facilitate e-participation and enable complete loop for engagement. Among the ICT4D tools, a mobile phone has become the most prominent ICT tool in possession and use that independently can complete the e-participation/engagement loop. Consequently, researchers selected seven services that can be delivered over a mobile phone to measure the utilization (ICT tool – Mobile) in effort to establish ones interest and wiliness level. The researchers used the self-report method [20, 21] to collect the data and compute the usage levels of the services. The findings are indicated in figure 4.12 below.
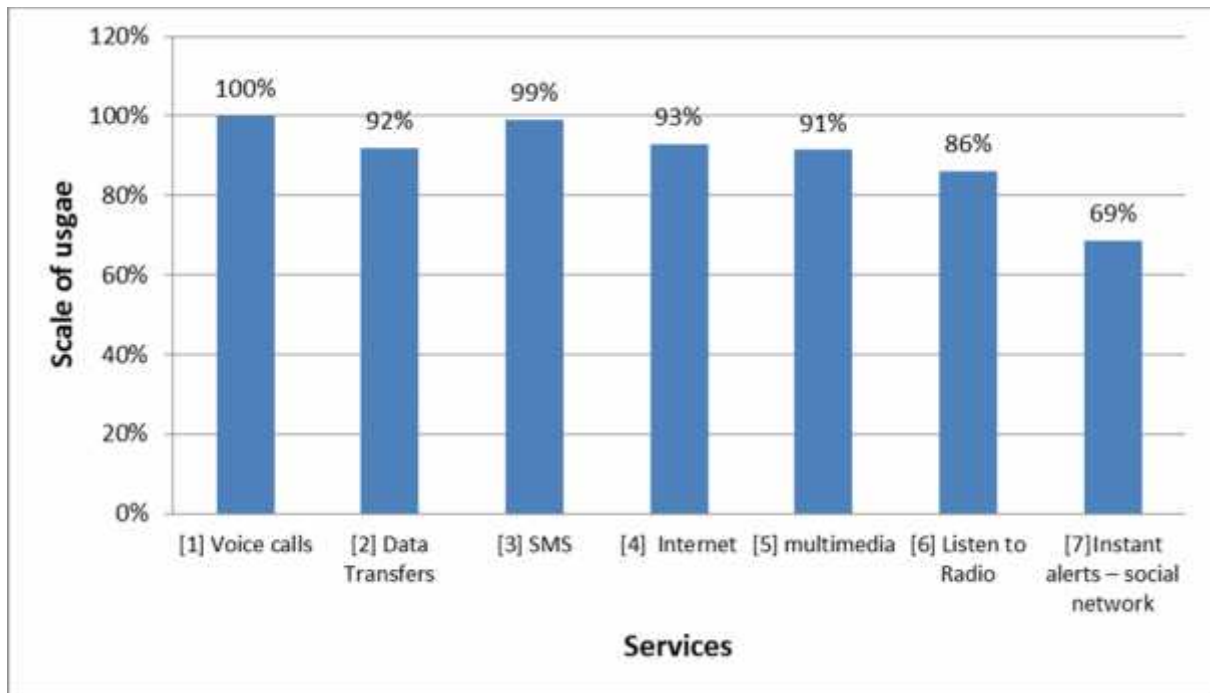
Figure 4.12: Scale of utilization of present ICT tool

The utilization of the mobile phone is well demonstrated in figure 4.12. The usage levels over several services are a good reflection of respondent's interest and willingness to use the tool. Below are the findings in using mobile phones for engagement with office bearers.

4.1.3.2 Interest and willingness - Level of participation in some occasional programs

The level of interest and willingness to participate in the forthcoming e-participation project implementation of an individual or/and a group of respondents was tested based on one's/group's level of:

- Engagement with officer bearers using her/his phone to discuss or report matters that concern their communities
- Participation in the educational or/and democratization process programs that occasionally appear on local FM radios

The respondents were asked to answer questions which were structured along these dimensions (ref: Appendix 2, $2.1 (e) & (f)). The findings of the data collected from these questions are hereby discussed in conjunction with figure 4.13 below.

Figure 4.13 (a) indicates the number of respondents that confirmed to had ever engaged with the officer bearer/leaders over the issues that concern them and their communities. While in (b) show the respondents that had ever made telephone calls to radio stations while listing to their ongoing programs and engage with the modulators/presenters of the programs in the radio stations.

Such a record of 41% and 36% established by the study from self-motivated respondents shown in figure 4.13 (a) and (b) respectively;

- Reflects the need and readiness of the communities in embracing the e-participation project

Engagement - Community issues
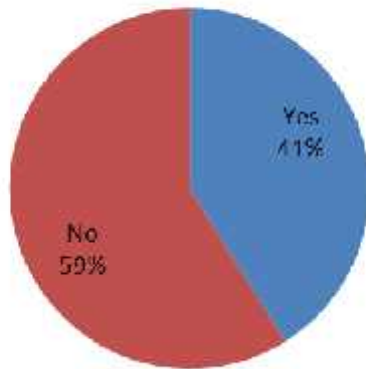
Participation - programs on local FM radios

Yes 41%

No 59%

Yes 36%

No 64%
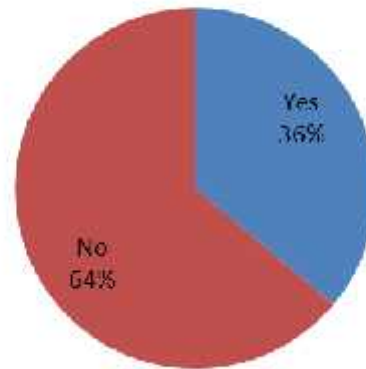
(a)   (b)

Figure 4.13: Respondents present level of e-engagement and e-participation

- Therefore, the researchers set a benchmark for evaluation of the future project outcome/impact of the e-participation project, i.e. the values of 0.41 and 0.36 are marked as starting levels of e-participation within the communities. These values shall be compared with future values to establish if the project has caused any positive outcomes/impact to the communities.

4.1.3.3 Interest and willingness – reflected from the frequency of participation

Researchers investigated the respondents' frequency of participation during the study to determine the common issues of their interests. They used a voluntarily but guided approach to let a respondent speak out the issues of concern where one has ever engaged with office bearers or participated in any form of discussion using ICTs. The present level of participation gives an indication of respondent's interest and willingness to participate in the e-participation project. Moreover, findings show that respondents engaged with duty-bearers mainly in an *informative action* as indicated in figure 4.14. Within the e-participation framework, the present level of informative engagement partially acts as the present indicator of the first level of *e-information* as prescribed by the United Nations Department of Economic & Social Affairs (UNDESA) alluded to at the start of this report.

Figure 4.15 indicates the present respondents level of participation through media (radio or/and television) in conjunction with mobile phones. Within the e-participation framework, the level of participation through media (radio or/and television) in conjunction with mobile phones is taken to the present second level of *e-discussion*.

Consequently, the indicator levels in figure 4.14 and 4.15 acts as the researchers' benchmarks for e-information and e-discussion upon which the outcome/impact of the e-participation (MML) system shall partly be monitored and evaluated.
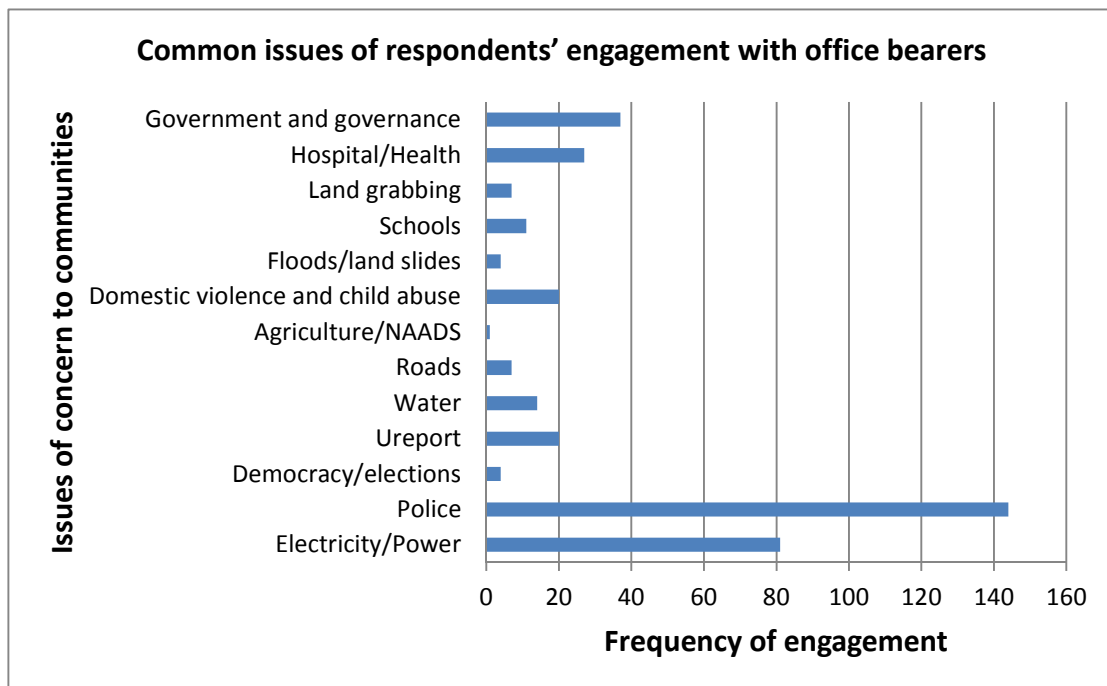
Figure 4.14: Common issues of respondents' engagement with office bearers
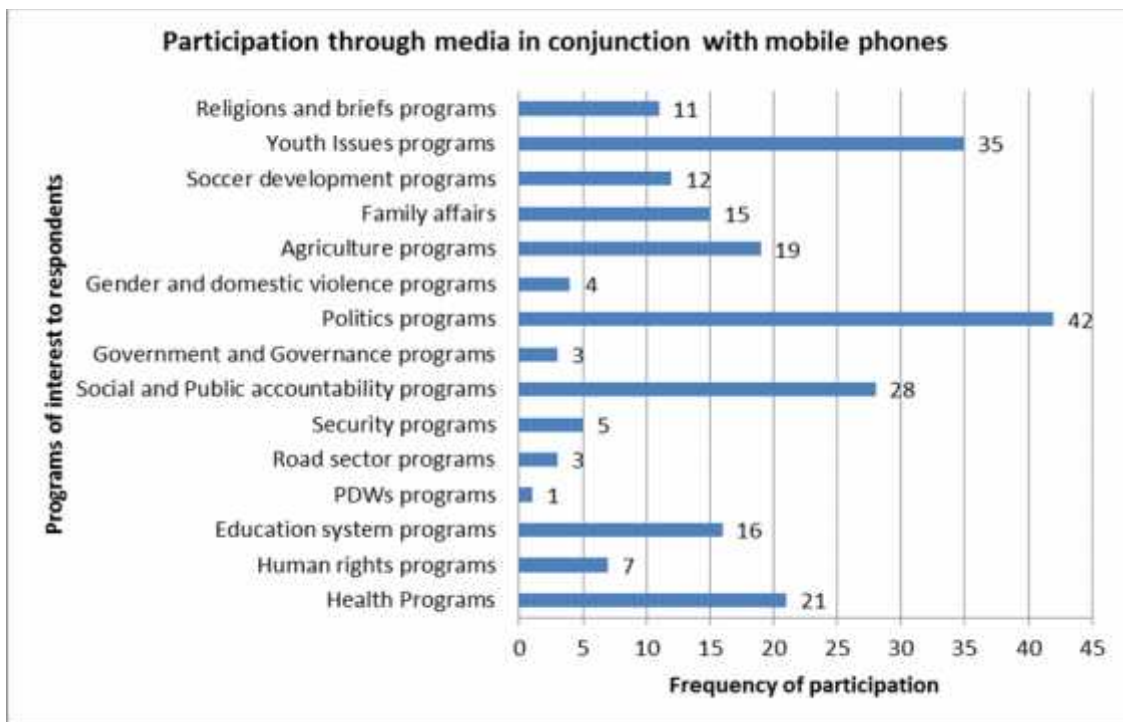
Figure 4.15: Participation through media in conjunction with mobile phones

4.1.4   Internet/e-readiness

Researchers also investigated the communities' readiness of accepting and adapting ICT as a medium of engagement. The process involved rating the respondents' understanding level of

internet/e-applications. Each respondent was asked the level of her/his understanding of the assorted internet tools/e-applications given thought to be a perquisite for efficient utilization of the proposed MML e-Participation System. The scale given below was used in interpreting/scaling the level of the respondent understanding of the internet tool/e-applications.

Scale	Interpretation
Weak	- Rarely use these applications - Have a minimum knowledge about the application - Sometimes do not know / forgot about the application
Average	- Sometimes use the application - Has a limited knowledge about the application - Sometimes can employ / know the application
Good	- Always use the application (Know how to use ICT very well) - Ability to implement application - Have good knowledge about the application
Don't Know	- Never use the application - No knowledge about the application at all

Table 1: Respondents Internet readiness - General Knowledge

General Knowledge	Number of respondents			
	Don't Know	Weak	Average	Good
Internet Browsing	34	53	167	665
Use Search Engine (eg. Google, Yahoo, etc.)	51	50	143	676
e-mail	44	71	134	668
Chatting (eg. using Skype, MSN messenger, Google chat,Yahoo etc.)	74	90	133	626
Online Community (social media)	70	89	189	573
Video Conferencing	183	265	139	330
VoIP Call (Online Calling)	139	200	129	451
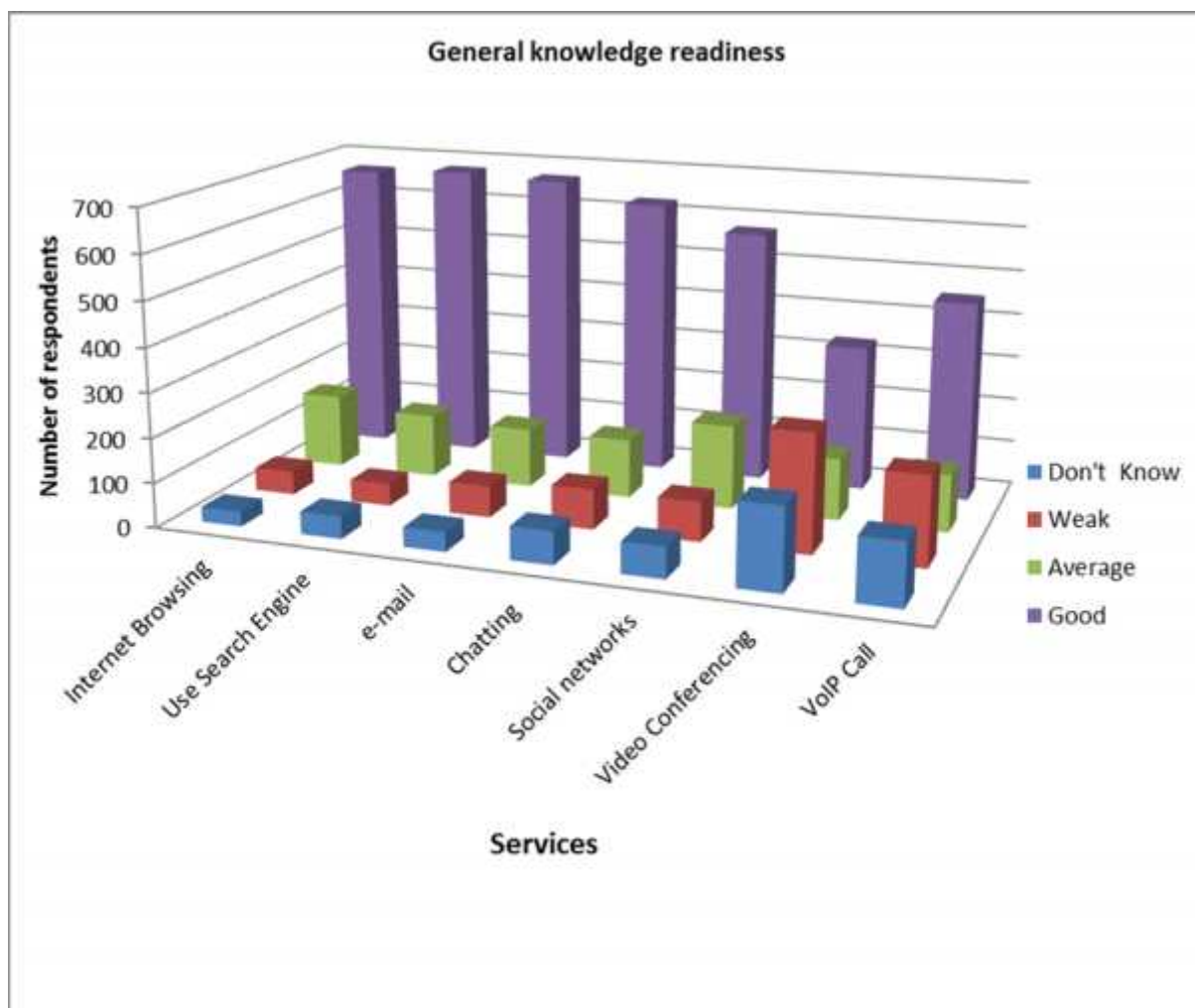
Figure 4.16: Respondents general knowledge of Internet

Table 2: Respondents Internet readiness - Engagement /consultation applications/Tools

Engagement /consultation applications/Tools	Number of respondents			
	Don't Know	Weak	Average	Good
e-Complaints	194	328	168	225
Health Advisory	183	283	177	276
Your banker / loan officer	229	393	141	150
The government officials	169	306	176	266
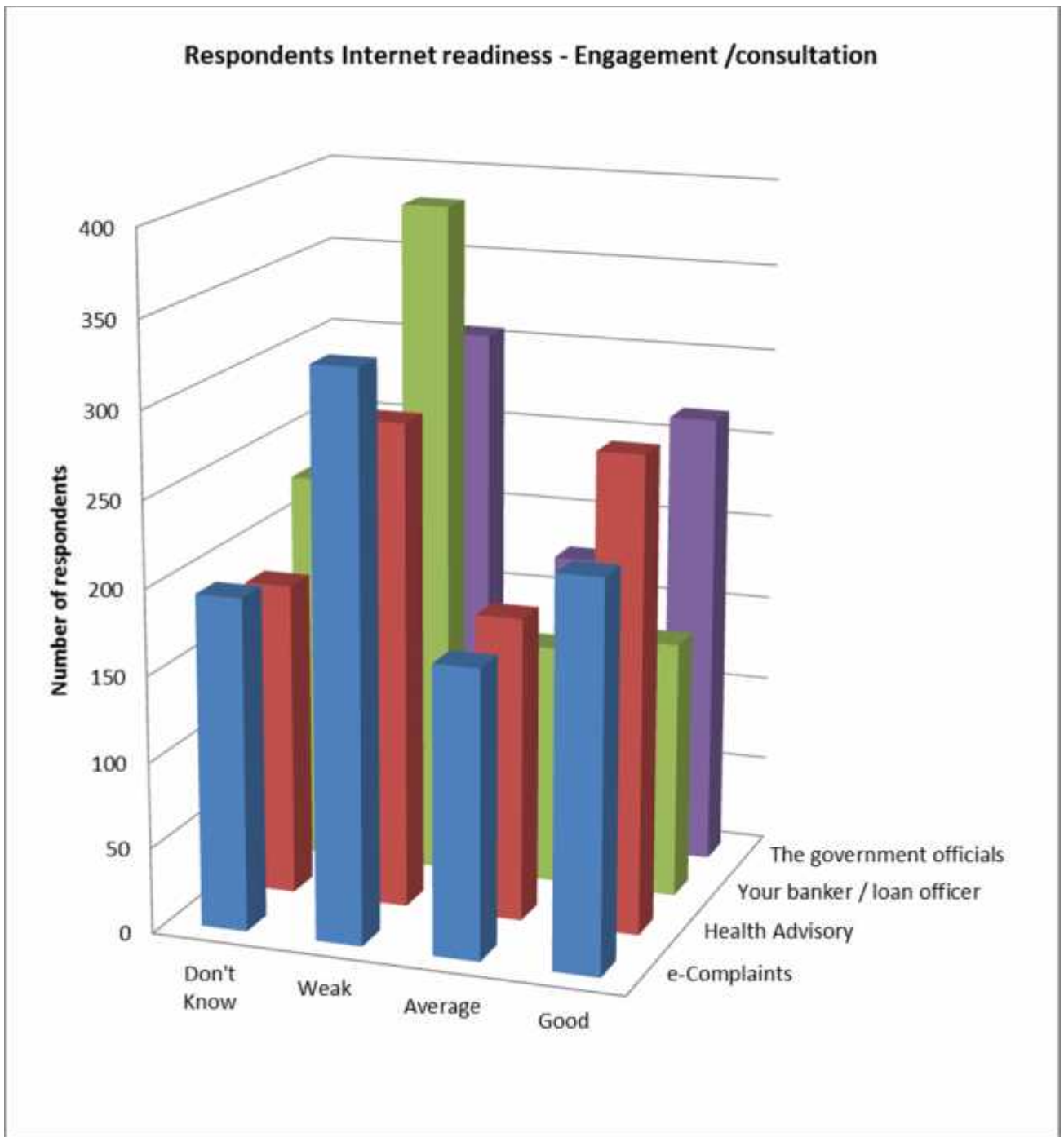
Figure 4.17: Respondents Internet readiness - Engagement /consultation applications/Tools

Respondents Internet readiness - e-information rediness

	Literature Review	Course information	Blog Usage	Religious Information	Medical Information (Health alerts)	Accessing government official documents (reports, bills, Acts)	Accessing newspapers (Civic responsibility)	Develop Blog
Don't Know	146	92	301	69	157	152	117	374
Weak	222	193	300	186	188	213	132	319
Average	178	209	120	174	180	154	134	72
Good	373	420	195	485	388	395	533	134

Figure 4.18: Respondents Internet readiness - e-information readiness

4.2   The critical ICTs tools for the success of e-participation project

This study discusses the stated objective of the study from a holistic point of view. Note only limited to the tools but to the entire critical success factors to of the e-participation project. Consequently, the study classified the critical success factors into three categories. These categories are:

- The real ICTs equipment that should be possessed by stakeholders to participate in the e-participation system project.
- The applications required for the smooth implementation of the e-participation system.

The summation of the above two categories are referred in this study and the literature of e-participation as the ICTs tools or infrastructure. Taking a holistic approach to determine the success factors, this study included a third dimension that includes the human factor.

- The human factor or capital should not be assumed for granted. This factor put in consideration of the required skills, knowledge and the goodwill status of the stakeholders.

4.2.1 Success factor - real required ICTs equipment/hardware

The success factors in respect of the stakeholders ICTs equipment which are derived from the data analysis are presented in figure 4.1. The present order of ICTs access which thereafter determines the possibility of participation in the e-participation project hence contributing to the success factors are as follows:

Table 3: Order of ICTs access

Order of access	ICT equipment
1st	Radio
2nd	Television
3rd	Smartphones
4th	Ordinarily phones (only with GSM capabilities)
5th	Computers
6th	Fixed telephones

The above presented order of the required ICTs equipment is vital for the success of the e-participation project mainly during the pilot phase. However, in the full implementation of the project it is projected that the order of the required equipment shall be as shown below. The assumption is based on the present ownership of the ICTs equipment among the respondents.

Table 4: Order of ownership of the ICTs equipment

Order of access	ICT equipment
1st	Radio
2nd	Smartphones
3rd	Computers
4th	Ordinarily phones (only with GSM capabilities)
5th	Television
6th	Fixed telephones

4.2.2 Success factor - real required software/applications

Success factors:

- Applications that run on both mobile phones and Computers
- Applications that can disseminate information based on the Sort message services (SMS) technology
- Self-triggered applications that can send alter and remainders messages
- Applications that can support text, audio and video type of communication
- Web based applications
- Applications that can leverage the social networks type of designs or include some social networks applications but with some customizations

4.2.3   Success factor - human factor/capital

- Most of the stakeholders need skill upgrade
- Provide basic training to end users
- Include well documented and detailed help
- Provide online tutor

4.3   The communication infrastructure influencing usage of ICT tools

The available communication infrastructure in the study regions is indicated in section 4.4 below. Such infrastructure is sufficient to support any ICT tool/s to be used for any gainful activities to promote good governance and public service delivery in the regions.

Although the communication infrastructure is essential and is available in the regions, researchers' study findings showed that there are more crucial factors that influence usage of the ICT tools than the infrastructure. Main factors influencing the usage can be enumerated as but not limited to following:

- Affordability of the running costs of using the networks. During the study, it was found out that many people can afford one time cost of purchasing the hardware, but fails to maintain the running costs for paying connectivity. Either by volume on usage (commonly called as bundles) or the prepaid monthly fee for connectivity.
- Literacy levels: the majority of the people in communities are not literate enough to exploit the power of ICTs tools to foster personal or national development. They handle ICTs tools for the purpose of social networks and voice calls.
- Mind setting of end users – from traditional methods of doing things to modern ways: Especially this factor was noticed among elderly office bearer, e.g. resorting to drafting communications on paper and later takes the draft to office secretly to type and send as an e-mail, while the office has a full connected computer in his office.
- Available services - envisaged benefits to be achieved/delivered

4.4   A listing of the communication infrastructure in the regions

The table below indicates the type of telecommunication infrastructure (both voice and data) in the selected parts for baseline study (Uganda and Kenya).

General observation on all the regions covered in the study:

- All regions have electricity from the main national grid. A good number of the homesteads had solar panels as alternative electricity supply.
- All regions receive television and radio signals. Hence, dissemination of information through a radio and/television would reach the majority.
- All regions have the basic GSM infrastructure for mobile telephones
-

Table 5: Available telecommunication infrastructure to support e-participation

Country	Region	Service Availability	Telecom/Internet providers in the study regions				
			MTN	AIRTEL	UTL	Safaricom	Orange Care
UGANDA	Western	GSM	✓	✓	✓		
		ADSL			✓		
		ISDN			✓		
		Wimax			✓		
		2G (GPRS & EDGE)	✓	✓	✓		
		3G	✓	✓			
		HSDPA			✓		
		4G					
		Optical fiber	✓	✓	✓		
	South Western	GSM	✓	✓	✓		
		ADSL			✓		
		ISDN			✓		
		Wimax			✓		
		2G (GPRS & EDGE)	✓	✓	✓		
		3G	✓	✓	✓		
		HSDPA			✓		
		4G					
		Optical fiber	✓	✓	✓		
	Northern	GSM	✓	✓	✓		
		ADSL			✓		
		ISDN			✓		
		Wimax			✓		
		2G (GPRS & EDGE)	✓	✓	✓		
		3G	✓	✓	✓		
		HSDPA			✓		
		4G					
		Optical fiber	✓	✓	✓		

Country	Region	Service Availability	Telecom/Internet providers in the study regions				
			MTN	AIRTEL	UTL	Safaricom	Orange Care
CENTRAL KENYA - NAKURU COUNTY	Nakuru East Constituency	GSM		✓		✓	✓
		ADSL				✓	
		ISDN				✓	
		Wimax					
		2G (GPRS & EDGE)		✓		✓	✓
		3G		✓		✓	✓
		HSDPA				✓	
		4G				✓	
		Optical fiber		✓		✓	
	Nakuru West Constituency	GSM		✓		✓	✓
		ADSL				✓	
		ISDN				✓	
		Wimax					
		2G (GPRS & EDGE)		✓		✓	✓
		3G		✓		✓	✓
		HSDPA				✓	
		4G				✓	
		Optical fiber		✓		✓	
	Naivasha Constituency	GSM		✓		✓	✓
		ADSL				✓	
		ISDN				✓	
		Wimax					
		2G (GPRS & EDGE)		✓		✓	✓
		3G		✓		✓	✓
		HSDPA				✓	
		4G				✓	
		Optical fiber		✓		✓	
	Subukia, Constituency	GSM		✓		✓	✓
		ADSL				✓	
		ISDN				✓	
		Wimax					
		2G (GPRS & EDGE)		✓		✓	✓
		3G		✓		✓	✓
		HSDPA				✓	
		4G				✓	

Country	Region	Service Availability	Telecom/Internet providers in the study regions				
			MTN	AIRTEL	UTL	Safaricom	Orange Care
		Optical fiber				✓	
	Kuresoi North Constituency	GSM		✓		✓	✓
		ADSL				✓	
		ISDN				✓	
		Wimax					
		2G (GPRS & EDGE)		✓		✓	✓
		3G		✓		✓	✓
		HSDPA				✓	
		4G				✓	
		Optical fiber				✓	
	Kuresoi South Constituency	GSM		✓		✓	✓
		ADSL				✓	
		ISDN				✓	
		Wimax					
		2G (GPRS & EDGE)		✓		✓	✓
		3G		✓		✓	✓
		HSDPA				✓	
		4G				✓	
		Optical fiber				✓	

4.5 Social demographics influence to project objectives

4.5.1 Social Demographics

The requirement of establishing the social demographic influence to project objectives is discussed basing on the socio-economic and demographic characteristics of the respondents that researchers interacted with in group discussions and on individual one to one interviews. The information hereby presented is from the entire data of all the e-participation selected regions. Also, it is necessary to note that the data was purposively collected from the people in the communities that had traits which could contribute positively to the project implementation.

4.5.1.1 Demographic characteristics

The researchers studied and established the possible positive or negative demographic influence to the implementation of the e-participation project's objectives from the analysis of the demographic data collected from the respondents. The demographic influence under consideration covers, but not limited to, respondents areas of residence, age, sex, relationship status and interests.

4.5.1.1.1 The Locations of residence

The figure 4.19 shows the location of where the respondents live. The distribution was purposively achieved based on the preconditions of ICTs availability in the respective areas and a proof of respondents' access to the basic ICTs equipment required for the project.
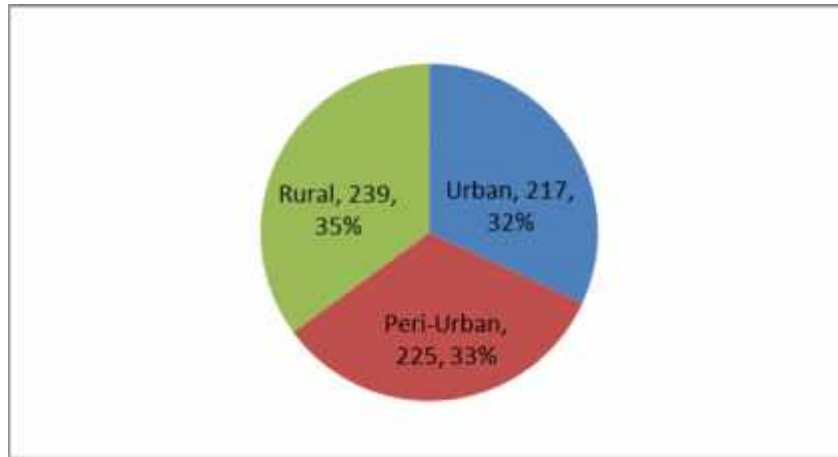
Figure 4.19: Village classification

Influencing factors to project objectives: the rural respondents are more welcoming and embracing the project with a clear vision of how the project is bridging the gap between them and their leaders/office bearers. While the forethought of the urban respondents is the direct monetary gains that come with the project. Consequently, it requires time for sensitizing and developing a mind change among the urban respondents.

Even though there is a monetary urge among the urban and some pri-urban respondents which is a retardation on the project objectives, they performed much better than the rural in respect of social-economic characteristics which were tested through the factors of the (a) level of social networking, (b) ICTs tools in use, and (c) economic capability – expenditure on the Internet based/delivered services. Figure 4.20 is a graph showing internet monthly expenditure/affordability levels of respondents from in their respective areas of residence.
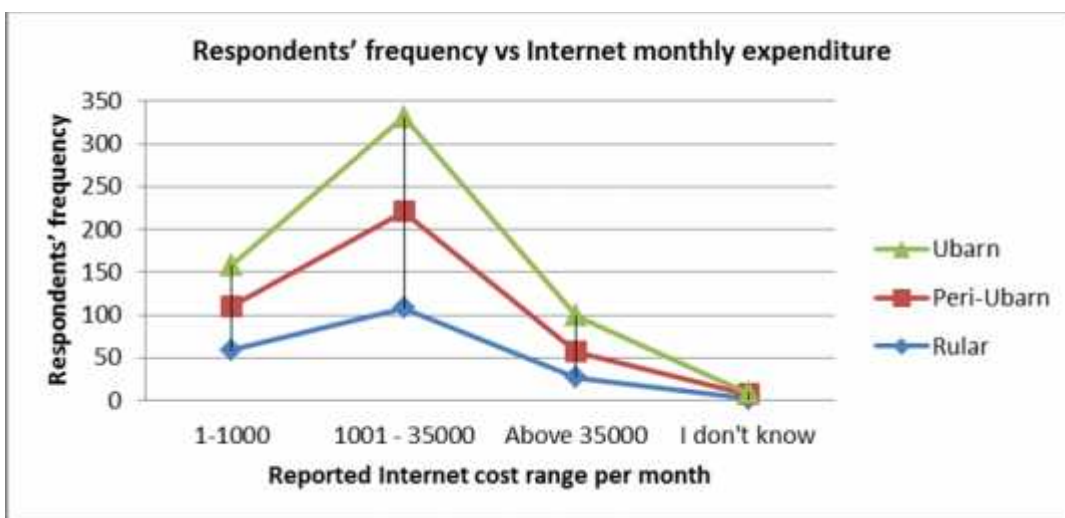
Figure 4.20: Reported ranges of the Internet monthly expenditure

4.5.1.1.2 Gender

The gender report summarized in figure 4.21 shows the percentage of men and women that fulfilled the researchers' purposive sampling.
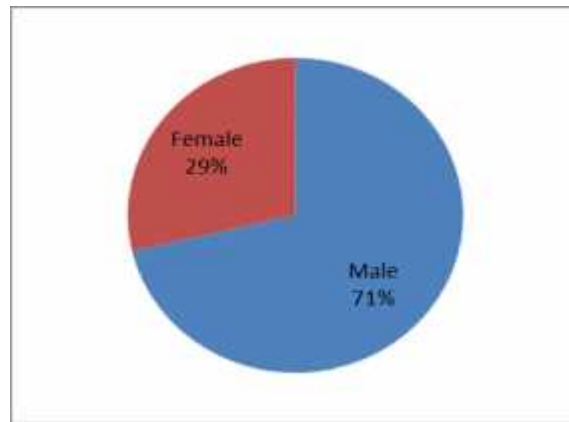
Figure 4.21: Respondents by Gender

The information derived from figure 4.21 is that the ratio of women to men in respect to positive contribution to the success of the e-participation project implementation stands at 1:2.5. Therefore, in any community from the selected regions men's influence to e-participation project supersedes female influence by 42 %.

4.5.1.1.3 Age Group as demographic influence to project objectives

The age group reports the number of respondents that had access and/or possession of the required ICTs tools for the implementation of the e-participation project. Figure 4.21 indicates the respective age groups in respect to the stated information. It should be noted that the age 18-25 had the highest followed by the 26 - 35. In respect to age and ICTs tools access and/or possession as factors on enabling the penetration of the e-participation project to the communities, it obvious that the rage of 18-35 years suits the consideration.
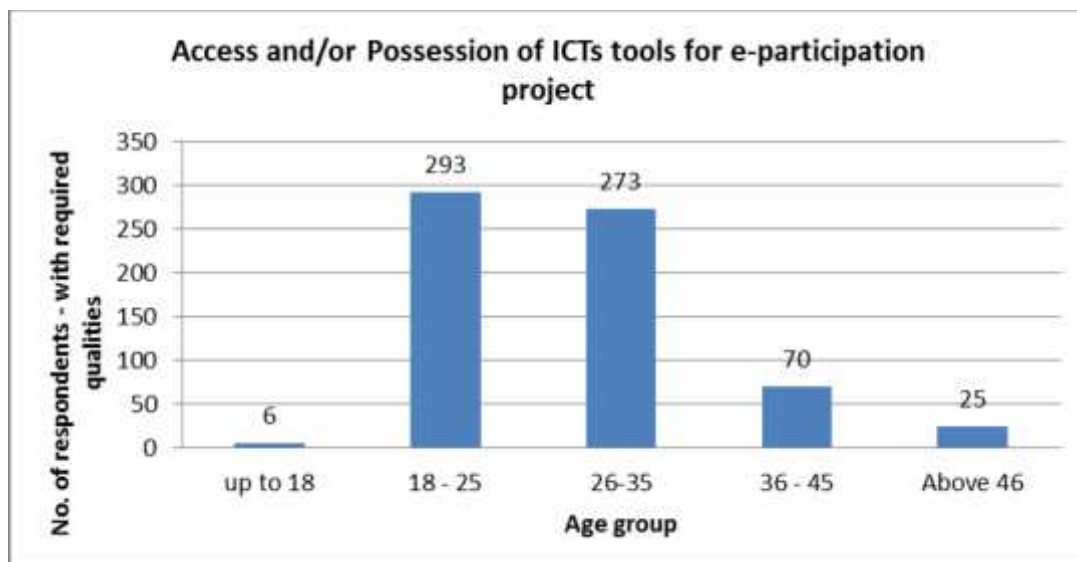
Figure 4.22 Access and /or possession of ICTs tools for e-participation project

In a further analysis that considers age and affordability of the Internet connectivity, indicates that the 26-35 age group as the most influential group to propel the projects objectives.

4.5.1.1.4 Relationship Status

The relationship status shows the respondents' relationship status: married, in a relationship not yet married, single, divorced, etc. Bearing in mind that these respondents had the preliminarily requirements that qualified them to be included in the sampling process, researchers further strived to establish whether being in a relationship will lead to an influence on the e-participation project objectives. Figure 4.23 indicates the respondents' relationship status. The data shows that singles had more willingness ICTs tools to participate in the e-participation than any other types of relationships. In the preceding section (socioeconomic characteristics) we discuss the findings between types of relationships and their respective capabilities of monthly expenditure for Internet connectivity and then we deduce the possible influence of different types of relationships to e-participation project objectives.
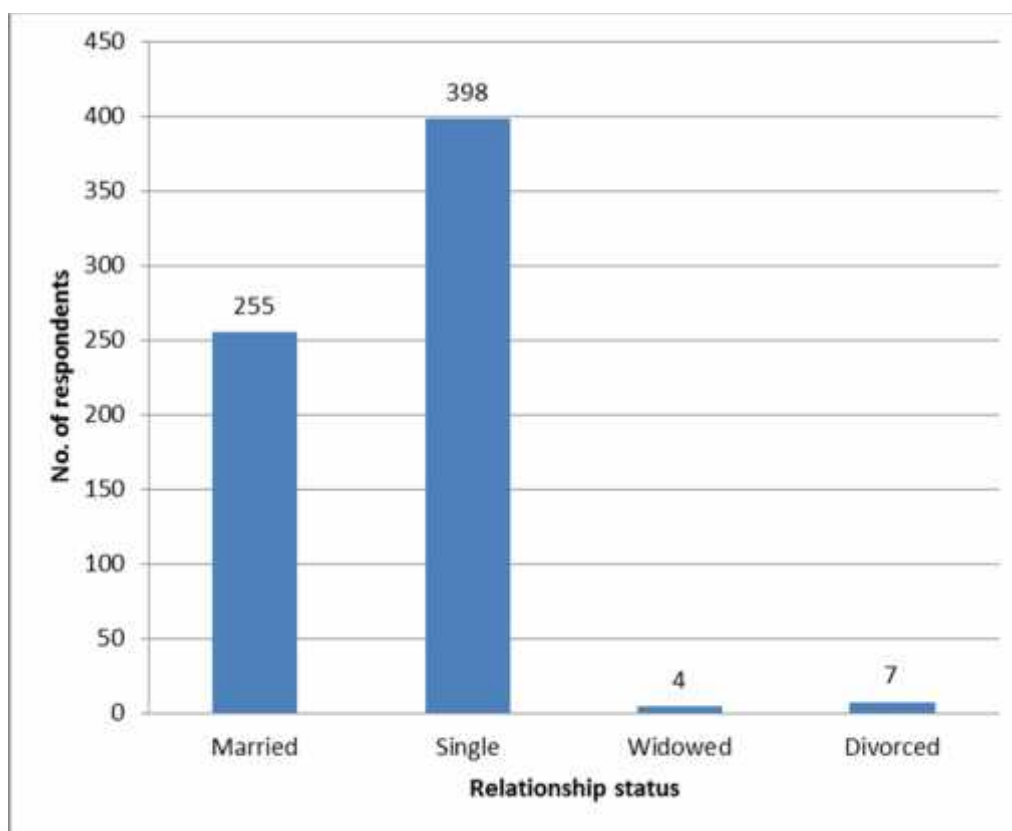
Figure 4.23: Respondents relationships

4.5.1.2 Socioeconomic characteristics

In this section researchers examine the data and discuss the social and economic factors to better understand how the combination of both is likely to influences the e-participation project objectives either positively or negatively. The socio-economic characteristics under consideration are age, gender, relationship type, income levels, education, and the respondent residence area (rural, semi-urban and urban). It was not possible to obtain data on respondents' income levels. However, researchers obtained data on their employment status and expenditure levels in respect to the internet connectivity. Hereafter, researchers deduce the possible influence of the income level characteristics basing on the reflections of the

employability and the internet connectivity expenditure levels of the respondents as presented in the table below.

Table 6: Connectivity by age groups, source of livelihood and expenditure levels

Residence Type	Sex	Number of respondents connected to the Internet by their age group				Source of livelihood				Expenditure Level (UGX)
		18 - 25	26 - 35	36 - 45	>45	Paid employed	Self employed	Student	Unemployed	
Rural	F	9	6	2	1	11	3	4	0	1 - 10,000/=
	M	20	16	3	2	16	17	5	4	
	F	17	8	5	1	13	13	4	2	10,001 - 35,000/=
	M	33	33	9	2	31	37	7	3	
	F	1	1	1	0	2	1	0	0	> 35,000/=
	M	11	12	0	1	9	10	5	1	
	F	0	0	0	0	0	0	0	0	I Don't know
	M	2	0	0	0	1	0	1	0	
Peri-Urban	F	11	6	0	0	5	7	5	0	1 - 10,000/=
	M	18	11	3	2	15	12	6	1	
	F	20	14	3	0	20	12	3	2	10,001 - 35,000/=
	M	26	44	6	0	31	39	4	2	
	F	4	2	1	0	1	5	1	0	> 35,000/=
	M	7	11	2	3	4	17	2	0	
	F	2	0	0	0	1	1	0	0	I Don't know
	M	1	1	1	0	2	1	0	0	
Urban	F	6	2	2	1	7	2	2	0	1 - 10,000/=
	M	9	23	4	1	23	13	1	0	
	F	17	9	0	0	12	5	8	1	10,001 - 35,000/=
	M	28	42	12	2	41	31	12	0	
	F	10	4	2	0	4	8	4	0	> 35,000/=
	M	18	2	4	1	2	11	12	0	
	F	0	0	0	0	0	0	0	0	I Don't know
	M	1	0	1	0	1	0	0	1	

4.5.1.2.1 Residence and expenditure

Figure 4.24 below presents a comparison of respondents' monthly connectivity expenditure classified by residence areas. According to the findings there is no evidence that show any form of superiority among the types of residence on the Internet affordability or use. Based on the researchers' approach used to sample the respondents, the e-participation can effectively be initiated in any type of residence (rural, peri-urban or urban).
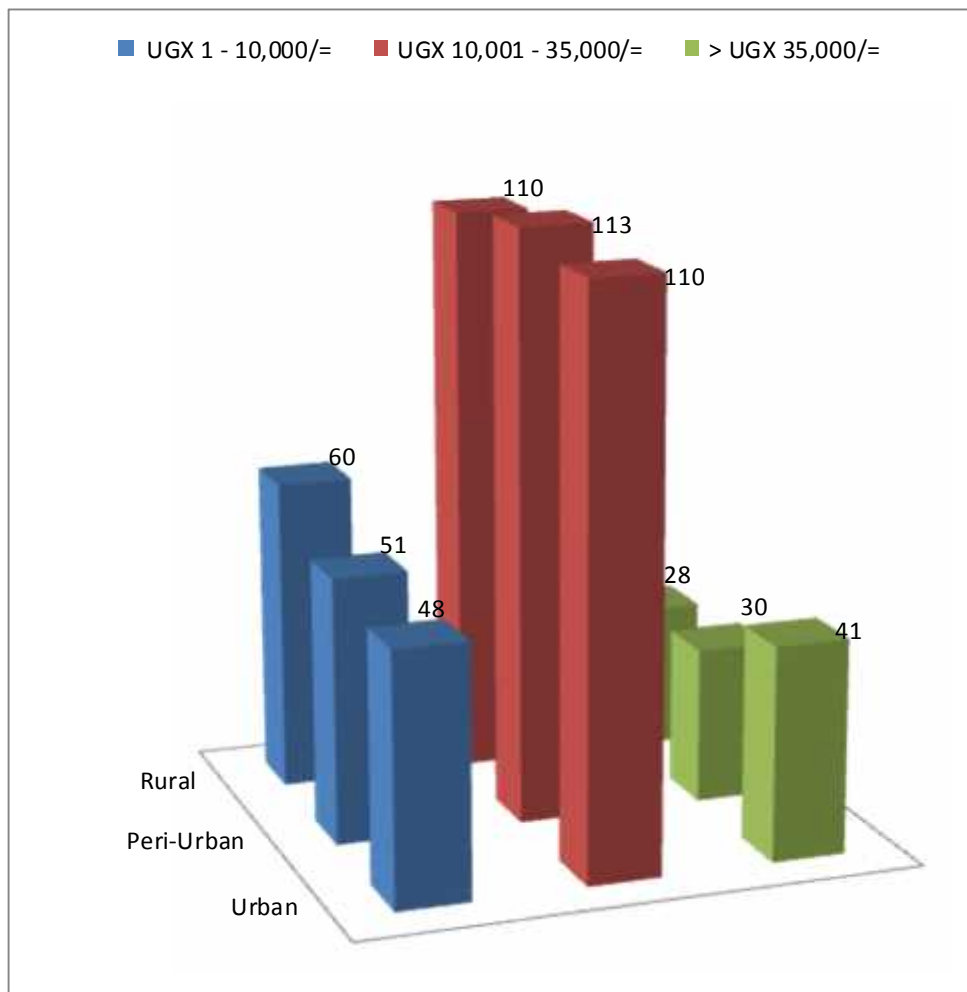
Figure 4.24: Respondents' monthly connectivity expenditure by classification of their residence areas

4.5.1.2.2 Age group and monthly connectivity expenditure

The project implementers should strategically target to recruit people in the age group 18 – 25 years and 26 – 35 years. These are dynamic age groups using the ICT tools and with recommendable level of Internet connectivity monthly expenditure. After all, the same age groups comprise over 75% of total adult population in both countries.
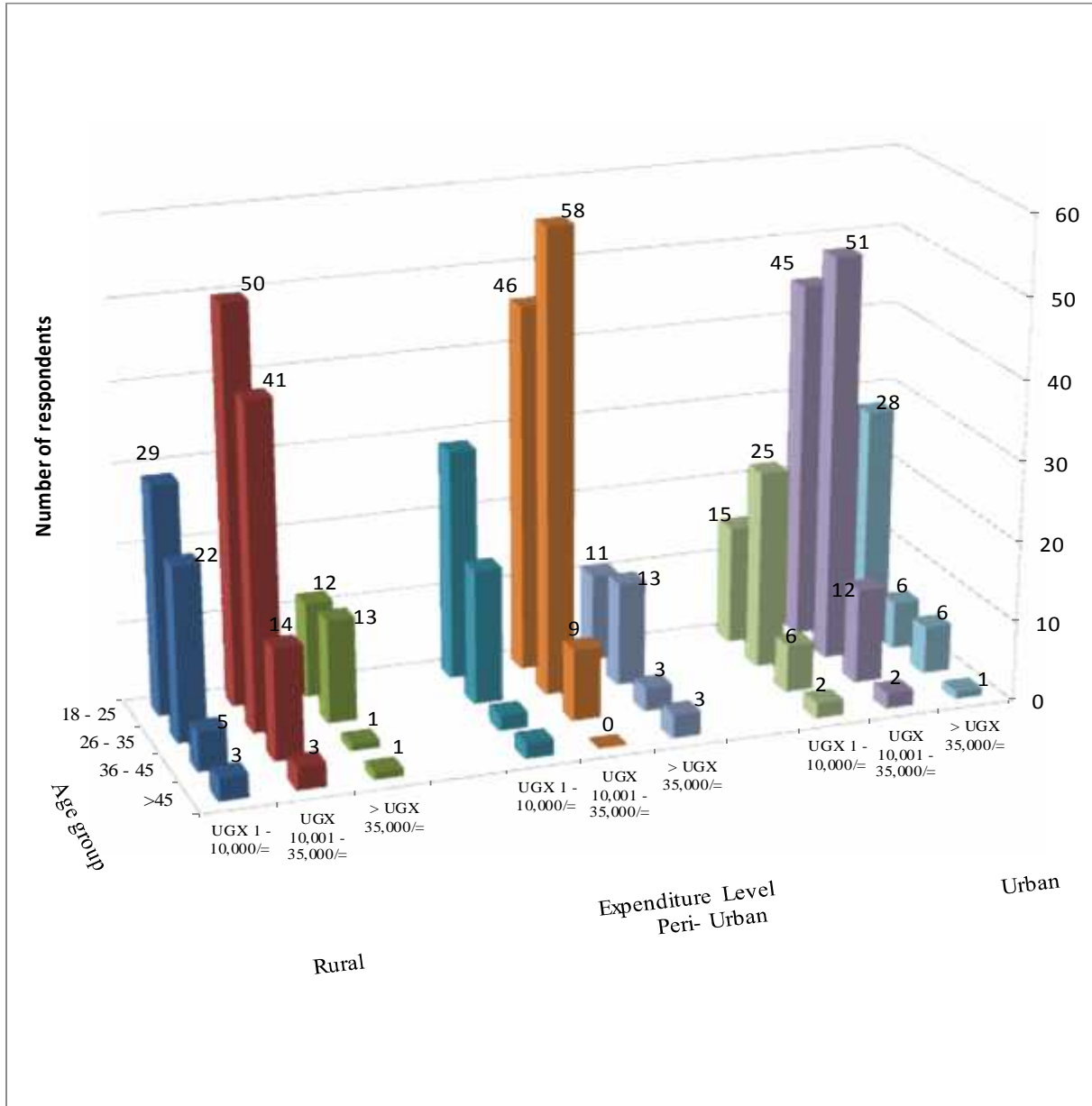
These findings are graphically displayed in figure 4.25 above.

4.5.1.2.3 Expenditure levels by Gender

The prominent observation is the male expenditure levels are higher than female expenditure levels. Also the ratio of connected female to male is almost 1:2 in all types of residences areas (rural, peri-urban, and urban).

These observations give strategic approaches to e-participation project implementers when planning for community workshops and sensitization at the time of launching the MML system to stakeholders.

4.5.1.2.4 Relationship vs Education level and Internet monthly expenditure

The table below shows the reported monthly expenditure levels of respondents in their relationships classification versus their education levels and figure 4.24 is the visual perspective of the data.

Table 7: Respondents in their relationships classification versus their education levels

Relationship	Monthly Expenditure Level	Education Level		
		Primary	Secondary	Tertiary
In a R/ship - not yet married	A. UGX 1 - 10,000/=	0	0	0
	B. UGX 10,001 - 35,000/=	0	2	0
	C. Above UGX 35,000/=	0	0	0
	D. I Don't know	0	0	0
Single	A. UGX 1 - 10,000/=	0	32	67
	B. UGX 10,001 - 35,000/=	0	62	171
	C. Above UGX 35,000/=	1	14	0
	D. I Don't know	0	3	5
Married	A. UGX 1 - 10,000/=	2	21	34
	B. UGX 10,001 - 35,000/=	1	40	88
	C. Above UGX 35,000/=	0	9	33
	D. I Don't know	0	0	1
Divorced	A. UGX 1 - 10,000/=	0	0	1
	B. UGX 10,001 - 35,000/=	0	1	3
	C. Above UGX 35,000/=	0	0	1
	D. I Don't know	0	0	0
Widowed	A. UGX 1 - 10,000/=	0	1	0
	B. UGX 10,001 - 35,000/=	0	2	0
	C. Above UGX 35,000/=	0	0	0
	D. I Don't know	0	0	0

Observation:

- Respondents with low levels of education hardly subscribe for connectivity, regardless of the relationship type.

- Relationships types seem to have no direct correlation with influencing the e-participation

- Respondents with higher levels of education are likely to influence e-participation regardless of relation types.

- The monthly connectivity expenditure hereafter referred to as "affordable price" indicate that 27%, 62% and 10% of the respondents comfortably afford a of range Shs.1 - 1000/=, Shs.10001- 35000/= and above Shs.35,000/= respectively.

Influential target group:

The respondents that form the 62% and 10% affordable price groups are the appropriate target groups in respect to influencing the e-participation project objectives. Therefore, the basic characteristics for consideration can be summarized as (a) high level of education, (b) monthly level of expenditure should be above Shs.10,000/=.
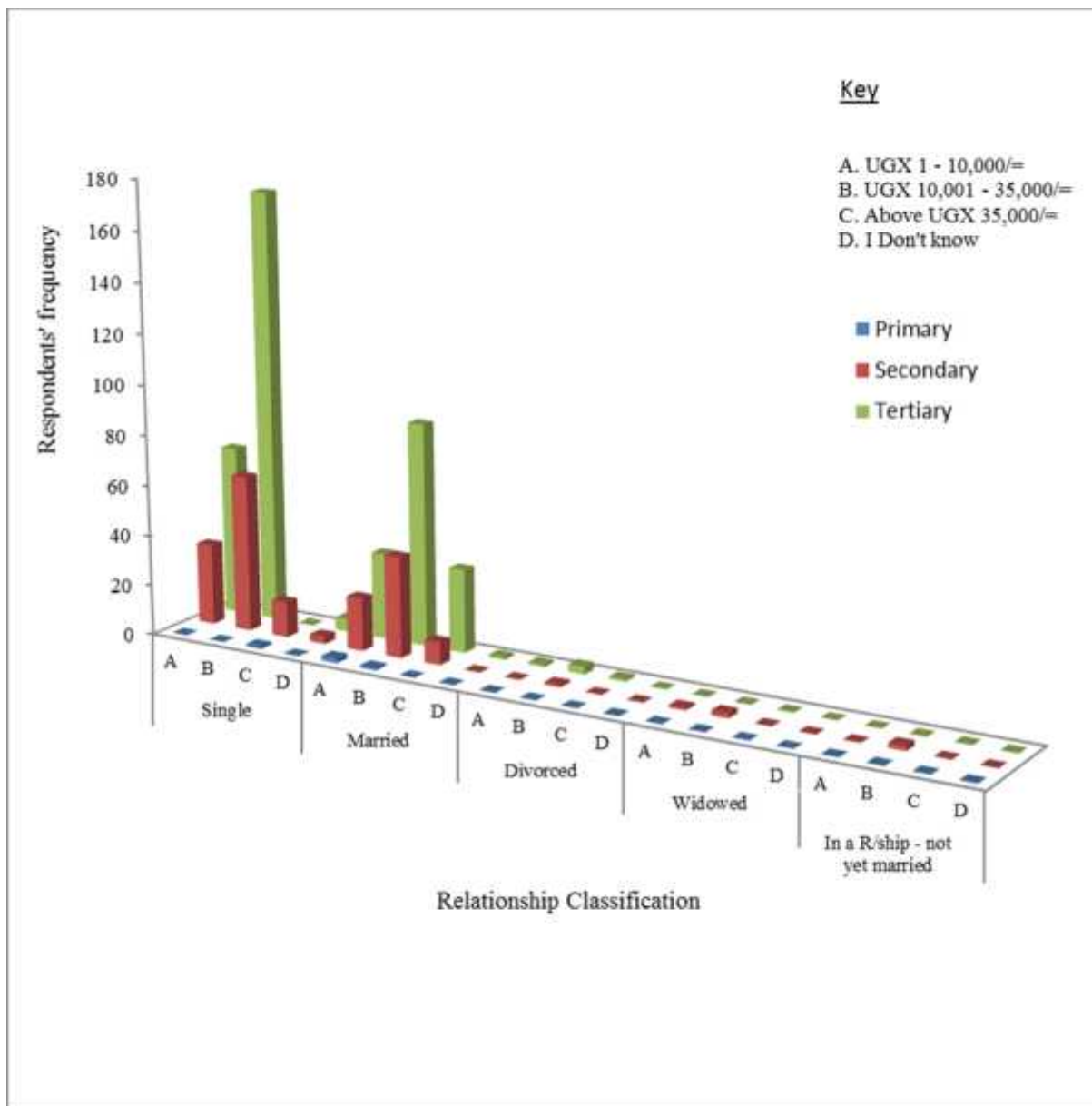
Figure 4.26: Respondents in their relationships classification versus their education levels

4.6 The PEST risks assessment of the project

The political, economic, social and technological (PEST) risks assessment for the e-participation project implementation in the selected pilot sites was analysed from the country levels. Reason being that no region from the study sets special political policies nor has is treated as a special economic zone.

4.6.1 Political

The governments' acknowledgement of the ICT importance is reflected from the established policies and initiatives for integrating ICTs in governments' functions. These initiatives manifest the governments' political willingness, appreciation and potential for enabling the use of ICTs to support information provision and engagement with citizens.

In particular the Uganda government:

- Established a full-fledged ICT Ministry is in place that is responsible for policy formulation and development of e-governance framework.
- Drafted the first national ICT policy in 2003, which was revised in 2012 to cope with the charging technology developments and societies' needs.
- A Rural communications development policy and fund was put in place to cater for provision of infrastructural support to underserved areas through the public/private mix. Uganda now ranks number 72 of 139 countries in terms of the favourable political and regulatory environment which forecasts a promising environment for ICT support and use [22]. This is an important factor for e-participation.
- In August 2016, the government of Uganda started offering free Internet access in some parts of the Kampala city (especially in leisure parks) to enable citizens access.

In particular the Kenya government:

One of the main priorities of the Kenya government is the achievement of an information society and knowledge economy. It is among these priorities that the government is committed to ensuring that ICT services are available throughout the country and will support the universal service availability and the widest access to such services. Also to enable an environment that avails affordable devices to citizens to ensure that they can access services.

Consequently, the government has embarked on updating the national ICT policy to set up a favourable environment to:

- Support the development of fundamental infrastructure; affordable Internet connectivity, availability of broadband connectivity, promotion of number portability, implementation of a national addressing system
- Protect consumer rights, child online protection, enhanced cybersecurity, gambling and augmented/virtual reality best practices
- Put in a framework to facilitate ease of accessing information, encourage uptake of open data practices for both public and private entities holding public information; to avail the information to the public upon request or when reasonable need arises.
- Provide industry players with access to government-owned infrastructure assets, encourage public private partnerships, introduction of more fiscal incentives in addition to being granted intermediary protection from liability of users acts.
- Ensure total inclusion of all people. To enhance access to ICTs by persons with disabilities, to ease access to government information, to promote access of ICT Infrastructure and encourage telecoms to develop services with special attention to Persons with Disabilities/special needs.
- Embrace the multi-stakeholder approach in policy making processes setup by the government.

Please note that researchers already discussed the social, economic and technological factors with effects on the e-participation project in the previous findings stated within this report (pages 19-46).

4.7   Focus groups primary analysis

Focus groups were conducted to find a generalized view of the project from the different social groups. The selected groups included;

- Politicians since their mandate involves continuous engagements with people are also involved in policy formulation and service delivery.
- Women as a gendered category that is margined in decision making and service delivery
- The youth as a group that makes up the biggest percentage in the national population
- People with disabilities face double marginalization, first through their disability and in access to resources and services.
- Citizens involved in farming as a business and other organized economic development groups

4.7.1 General Findings

These are general findings that cut across all the regions in respect of groups' categorisation.

4.7.1.1 The Youth groups

Findings from the group discussions showed that the ***Urban youth*** were most likely to embrace e-participation due to the following reasons;

- Had access to the basic ICT infrastructure and tools. At least each of them possessed two types of phone, the basic and smart phone, implying that they were connected to a network all the time and had access to power sources. Again most had an education background beyond advanced level (A'level/Upper Secondary School qualification), used the internet and utilized the internet and social media platform to communicate with each other.
- This group was politically active and had participated in discussions on good governance, for example accountability and budgeting.
- In terms of affordability, this group had a monthly minimum expenditure of Ug. Shs, 25,000 in airtime and data purchases.
- They were also clear on the information that should be available from the proposed system, the desired forms of online interactivity, for instance they preferred a system that would enable them 'see the person they were talking to' in real time and a platform for exchange of ideas as they felt that the current environment was less accommodative to their aspirations. Also proposed a free SMS service to disseminate pertinent information.

4.7.1.2 Politician groups

This was another group most likely to participate in MML system most especially since they are in the business of politics where interaction with constituents was important but also problematic due to excess demands imposed on them by constituents.

- Internet use was, however, not so widespread and few had email addresses. Those who had internet access also used social media platforms.

- Information interests rotated around reading the news.

- Politicians also regularly participated in both self-sponsored and sponsored radio programs presumably to reach out to a wider audience.

- They too were clear on what information government would provide, e.g. Government programs, Grants, financial releases and legal documents that guided their activities.

- Affordability of access, they possessed the means to spend an average of Ug. Shs. 30,000 on airtime/data.

This group also preferred a system that could use the short messaging system, SMS, to disseminate information as well as linking to Mass media outlets especially radio.

4.7.1.3 Women groups

- Women had access to mobile phones, though this was predominantly ordinary use. Use of this gadget was mainly for voice calls, mobile money and radio.
- Only a handful had access to internet, but those who used internet also used a social media platform.
- Women spent less on airtime/data with the least spending Shs. 5000 and the highest citing shs 18,000 a month.
- Women had a clear view of their information needs from Government and they expected the system to provide information on the following;
  - o Family planning
  - o Women's empowerment
  - o Children, Domestic violence
  - o Hygiene and access to improve health care systems
  - o Access to safe & clean water,
  - o Education of the girl child and improving retention in school
  - o Farming & agribusiness, especially genuine planting materials.
- Women proposed a toll free line to help report matters of concern, eg on domestic violence, irresponsible parenthood, education.
- Generally they preferred a system that would emulate a face to face interaction.

4.7.1.4 People with disabilities (PWDs) group

- Most of the participants possessed ordinary phones or had access to a phone through a family member or a neighbor.
- They had less access to education, and very few would speak English.
- Access to the internet was very minimal, only one participant had accessed through a café and this person also utilized a social media platform.
- They had access to power for charging phone using Solar energy or electricity and the average expenditure on a phone was Shs. 500 which would translate to approximately slightly over Shs. 10,000. Thus in terms of affordability, they had the capacity to maintain connectivity.
- Some of the participants due to disability and education could not read or send an SMS and only those in leadership positions had participated in radio programs.
- The group was also clear on information required from government, including government programs for them and other programs for economic empowerment, legal documents on Disability and legal aid clinics, market prices and statistics on PWDs in their regions.
- The group also pressed for a platform to discuss their issues of concern.

However, the group was mostly dependent on physical contact.

In summary, PWDs were the least likely to actively participate in an electronic system due to several constraints including accessibility to ICT tools and infrastructure, minimum education and use of the basic and low cost communication service, the SMS.

Most participants had the basic ICT communication equipment "the mobile phone" and at least access to more than one network. However, use of SMS as a communication tool would

be a realistic service to build into the MML system since most participants could receive an SMS and read it. Radio was another widespread communication tool both on phone and the physical device.

5 E-PARTICIPATION SYSTEM RECOMMENDATIONS

The recommendations are based on the respondents' views which are possible for the operationalization of the MML system under the e-participation framework. There is a high zeal to uptake the MML system among the communities/citizens and duty-bearers researchers interacted with during the study period. Consequently this calls for a well thought resilient and scalable design of MML system.

5.1 General points of concern from the respondents

These recommendations refer to the entire e-participation project (not necessarily the MML system). They were generated from points of concern, inquiries and requirements from the respondents in group discussions and the interviews of one to one individuals.

5.1.1 Security

The respondents' points of concern on security is summarised into three categories as show below.

5.1.1.1 Information security

The respondents needed to know and be assured that information sent on the system is received by the rightful person / duty-bearer. Note to be blocked by private secretaries or assistant officers – which is a common case in the public offices in both Uganda and Kenya.

5.1.1.2 Personal security/safety

The respondents needed to know and demanded a mechanism within the e-participation system that protects a whistleblower, especially on sensitive matters like corruption, sexual harassment, abuse of office, etc.

5.1.1.3 Misuse/abuse of e-participation system

The respondents needed to know and demanded that the system must step measures that stops any participant from misusing the system to abuse other participants, or any use of vulgar language, and punish any user that disseminates false information.

Recommendation:

In addition to building the technical security measures of the system, the project should implement a mechanism of modulation. While using a robot is a modern approach and more efficient, for prearranged discussion forums/meetings can be modulated by a human being.

5.1.2 E-participation project intervention in connectivity barriers

Monthly subscription, volume/bundle cost and pay per usage were reported as major barriers for the majority citizens from using the Internet.

 Recommendation: the project should plan to establish toll free lines.

5.1.3 ICT Literacy

Throughout the field study, researchers established that majority of the respondents had very limited knowledge of ICTs in particular the proper usage of Internet to foster development.

Recommendation:

The project should partner with local providers of ICT4D in schools and training institutions in the respective regions to provide introductory courses in ICTs in particular the proper usage of the internet to foster development.

5.1.4 E-participation literacy

While the respondents were zealous to the e-participation project objectives, the majority were not in position to pass over the philosophy and concepts of the project effectively to their communities. In addition a few looked/received the project objectives in view of their personal needs but not the community needs or the wellbeing of the society.

Recommendations:

- Curriculum development:

The project should develop a curriculum for e-participation literacy. The curriculum may include, but not limited too; case studies on specific scenarios of e-participation intervention/application in sectors like labour, health, education, environment, social welfare, finance, etc. The case studies should be developed within the legal national frameworks.

- Trainer of trainers' course:

Based on the curriculum the project should conduct trainer of trainers course in each region especially in the pilot phase were the communities are not yet sensitized.

- Online Tutor

The project should develop online tutorial for e-participation system and in particular the MML system.

- MML Documentation

This is a must requirement for the MML systems on the respective platforms. The MML help and system documentation for both the *back end* and *front end* applications must be put in place.

5.2 Features of the MML systems

5.2.1 Composition

The MML system should be composed of the *front* and *back* ends systems. The separation of MML software systems into front and back ends is to simplify the control of the system and the therein information flow. As a rule of thumb, the information/data flow on the system should be regulated and modulated, if need be on some occasions.

The administration of the *back end* platform requires a web-based solution, hence design and development of a responsive multi-layered web-portal.

Integration of a System Analytics tool to monitor system crashes, usage, subscriptions, etc.

5.2.2 Platforms

The MML system (mainly the front end) should run on a cross section of platforms, e.g. platforms that run on handheld equipment, stationed platforms, etc. The design and development should uphold the philosophy of providing a service anywhere anytime and on any platform.

5.2.3 User Interface (UI)

5.2.3.1 Human–computer interaction (HCI)
The front end system design should uphold the Human–computer interaction principles. That is it; the UI should focus more on user centric.

5.2.3.2 Equipment capabilities
- The UI should support run on both graphical and non-graphical devices.
- Low memory usage

5.2.3.3 Human capabilities
- Should require minimal skills or literacy to operate
- Should provide a feature that visually impaired people

5.2.4 Services

5.2.4.1 Store and forward principles

The system should support store and forward features of communication/information dissemination. Some of the target audiences of the system live in areas where the reception of communication signal is very weak or does not exist at all. Consequently mobile users in such place should be able to do the transaction which can be posted at a later time when the user has moved to areas with strong signal.

5.2.4.2 E-participation framework services modules

We recommend the services should be developed and packaged into different modules. These modules should align along the e-participation framework (e-information module, e-discussion module, e-decision module)

5.2.4.2.1 E-information module/application

According to the study, this shall be the heavily used module/application. We recommend that is should be composed of at least two hierarchies (basic services and advanced)

5.2.4.2.1.1 E-information basic services

The application should be in position to;

- Disseminate all formats of information e.g. Sort message services (SMS), e-mails, images, etc.

- Have self-triggered features that can send alter and remainders messages

- Support real time communication in all forms (text, audio and video)

- Leverage the social networks type of designs or include some social networks applications features, e.g. communities with similar interests can form their own groups of information sharing, etc.

5.2.4.2.1.2 E-information advanced module/application

The advanced option of the e-information should be designed to link the end users to information portals in specialised fields of the project interest. Hence the should be;

- A searchable directory of information portals
- Enable users to create their own portal according and be able to sync their information and data to their own equipment
- The information display should be platform & device-agnostic
- Should possess an option for learning habits of the users be able to perform remote data collection. This option keeps the users informed of the new updates in their respected fields of interests.

5.2.4.2.2 E-discussion module/application

The design/developers of the module should bear in mind that the module is to supplement the traditional face to face discussion. Consequently it should possess features that supports real time/online and offline discussions.

5.2.4.2.2.1 Discussion board services

The initiator of the discussion pins the topic to be discussed on board and the system automatically sends alert messages to all registered members of that discussion forum announcing the topic to be discussed and the fixed date and time. Also it announces the panellists of the discussion. Further the system automatically sends consequent reminders as the date and time draws nearer.

5.2.4.2.2.2 Real time/online discussion services

This service should support text, audio/voice and video discussions. Most of the respondents recommended for maintaining the face-to-face feature. Therefore the video support feature in the discussion (i.e. video chatting) is not only a success factor for this module but also to the entire implementation of the e-participation systems project.

5.2.4.2.2.3 Operate Offline support services

The offline (without the Internet connection) feature should enable any eligible member to services leave the discussion on her/his device such the at a later time when connected the system remote collector picks the discussion and delivers it to the discussants in the discussion room

5.2.4.2.2.4 Pre-discussion posts services

The system should support any eligible member or guests to post / upload her/his discussion to the topic's discussion room/board before the discussion time. The system should support any post/upload format (text, audio, and video) of the discussion. Support end users that shall not be available at the planned discussion time, or those end-users that have no Internet airtime or have weak Internet link that cannot support the real time discussion.

5.2.4.2.3 E-decision making services/tools

The respondents highly welcomed the options of co-designing public policy, co-production of service components and delivery modalities. Therefore, the e-decision making tool should enable both the duty-bearers and the citizens to make informed decision among alternative course of action regardless of the factors affecting the decision being qualitative or

quantitative. That is, the tool should guide the participants through the elements of decision making of:

- Formation of an objective function/choice criterion
- Determining the underlying constraints of the choice criteria
- Provide alternative course of action
- Perform forecasting
- Choice of preferred alternatives
- Relevant costs for decision making

5.2.4.3 Archival services

The system should provide archival option of all the transactions of the discussion.

5.3 A priority approach for MML systems development

Researchers recommend a phased approach for MML development. The product in phase one should also be having specific target audiences. Among the target audiences should include the focused group members that interacted with during the study, some individuals that where involved in the survey, and some elected leaders.

Table 8: Proposed phased approach for developing the MML system

Phase I - MML system development				
Time line				
#	**(Start time)**			**End time**
1	System development	Back end design	Core functions development	Integration of archival and storage technologies
		Front design	Stationary platforms - core functions development	Integration and testing of services
			Mobile platforms – core functions development	
2	Services			e-formation service (Sectors for inclusion to be determined by the project team)
3	E-participation curriculum	Start development		
4	Archival and storage			Start development
5	Training of Trainers course			Start Trainers course

Phase II – MML systems development		
6	Service	Start development of e-discussion
7	Training of Trainers course	Start Trainers course

Phase III – MML systems development		
8	Service	Start development of e-decision making
9	Training of Trainers course	Start Trainers course

5.4   Features of the core/engine for MML system

The designers of the core/engine for MML systems should bear in mind that e-participation automatically mean handling group deliberations. Consequently the core should be designed and developed basing on group decision analytic methodology/ies (GDAM) that provide an effective and valuable means of articulating and structuring deliberations within public participation. We recommend a GDAM that:

- Gather the group together in a facilitated discussion of the issues

- Seek to agree on group probabilities and utilities without formally eliciting individual ones: i.e. seek to elicit the group values directly without any intermediate step for the individual members.

- Develops a group analysis and explore the areas of disagreement via sensitivity and robustness analysis.

- Seek to reach a decision by consensus, i.e. at the forethought, it assumes that the group want to co-operate and reach consensus. Otherwise, a new process engineered basing on the theories of bargaining and negotiations is invoked under which the group interacts and discusses   a series of solutions

- The bargaining and negotiation based process, strives to converge to a point on the Pareto boundary. A Pareto point signifies acceptable position among the discussants.

5.5   Basic components of the MML from a technical point of view

- A decision analytic component: this is the heart of the MML that embodies most of features in the core. Developers can leapfrog on the general systems like DPL and @Risk [23], [24]
- Elicitation interface: Most the users are naïve to decision science approach. The interface handles the complexity of the decision analytic component in the background and enables end users to code their views in a nature language but in a guided manner.
- Locking/management component – a point that is exhaustively discussed and already achieved acceptable level of sensitivity (whether in the forefront or in the system background), should be locked by the management component to avoid repetition or endless discussion without any improvement.
- A trail component/module - a module that enables the interested stakeholders to have a look or track how the participants discussions led to the final conclusion/s. This module interprets the quantitative output of the analysis into qualitative format that enables any tracker into understanding of the factors that led to the final conclusion/s
- Online MML tutor and manuals – this component should aim at a wide variety end users

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