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INFORMATION TECHNOLOGY AND HUMANITARIAN EMERGENCY RESPONSE MANAGEMENT IN WFP UGANDA: A BEHAVIORAL PERSPECTIVE

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Abstract

As an emergency response system cannot be mentioned without support from Information and Communication Technologies (ICT), this study evaluated the contribution of IT in emergency response management in WFP Uganda, IT literacy among staff, the demographic characteristics, relationship and infrastructure in terms of ease use and benefits. A questionnaire with open-ended questions was used to collect data from staffs. This thesis describes the usage and level of IT literacy among staffs in emergency response management in WFP, as being one of the big four international humanitarian agency. Staffs trust COMPAS and its ability to track information in order to respond and save communities in need, while time aspect and information sharing remains a key element to the efficiency of operations. There is also a need for training to improve the use and interagency cooperation to utilize the available information and communications technologies more effectively in order to enhance rapid response capacity as well as facilitate the professionalization of global IT standards within the humanitarian community and its advancement.

1.0 Introduction

The growing industry of ICT worldwide and the strong policy endorsement in the use of ICT in development as well as lesson learned from recent humanitarian emergencies, have increased the use of ICT during emergency situation such as disaster (Smith, 2009). Emergency response is a term for a series of appropriate actions and precautions in the event of a disaster whether man made or natural. No matter the type of catastrophe, proper emergency response can protect family members and save lives, emergency response is also based on the needs of the affected population, (Jessica and Bronwyn, 2003). According to the Inter-Governmental Committee (IGC) emergencies are defined as urgent situations in which there is clear evidence that an event has occurred which causes human suffering or loss of livestock and which the government concerned has not the means to remedy and it is a demonstrably abnormal event which produces dislocation in the life of a community on an exceptional scale these may include: sudden natural disasters, slow-onset emergencies and political crises that usually involve population displacement (Samkange and Crawford, 2005). Information and communications technology (ICT) refers to the range of technologies that allow the gathering, exchange, retrieval, processing, analysis and transmission of information. The rise of ICT as a tool for general interaction is evident from the wide acceptance of the Internet as a platform for communication and knowledge sharing, and from the pervasive adoption of mobile communications all around the world. (EdgardoYu, 2010).

The United Nations (UN) recognized the need to emphasize the significant use of ICT in achieving Humanitarian Goals and have created Emergency Telecommunications Cluster (ETC) which is one of the clusters established by the Inter-Agency Standing Committee (IASC) as part of Humanitarian Reform. WFP always dispatches ICT equipment first to set communication in the disaster zone before any other service is delivered to affected community, bringing ICT to the fore front in solving humanitarian crisis hence calling for evaluation ICT significances in emergency operation in Uganda.

1.1 Background of the Study

The introduction and use of information communication technology today has brought profound changes in the functioning of organizations. These changes have also enabled enhancement of speed, quality and amount of information processed, disseminated, utilized and allowed greater control and coordination across different department or section of the organization. Ten years ago few aid workers were thinking about how information and communications technology would change how relief operations were carried out; technology was the preserve of experts discussing technical issues within a relatively small community of practice. The global spread of mobile technology and web access has brought those discussions into the spotlight, as technologies previously used only by experts is now in the hands of the general public. The effects of this have already been felt in the private sector, and they will increasingly change the way in which the humanitarian sector does business (Paul, 2011).

It's claimed that ICT helps reduce the cost of operations and the time required to complete them. Collecting standardized data in the field and entering this data into a comprehensive information system improves data evaluation and decision support by using powerful statistical and geographical tools at the regional and country level. This provides a framework for information sharing not just within the Humanitarian community but with others as well (John, 2001)
With the onset of the Information Age there has been a transformation of many fields and humanitarian crisis response management is no exception. Advances in technology have improved the affordability, mobility, and reliability of

communication while offering connectivity to a large global network of expertise and resources. The technology is not, however, a cure-all. There is a danger that enthusiasm for new methods and tools to push technology "to the edge" for technology's sake will feed into skepticism among many of those who have practiced humanitarian response in the same way for decades. (*Gisli, et. Al, 2010)*

Coordination among humanitarian relief organizations is an immensely difficult and complex task. One of the main challenges to humanitarian information management remains the creation of a spirit of sharing that promotes free flow of information and builds trust and commitment among stakeholders. The development in technology has brought about significant progress in humanitarian information management and exchange, though organizations are still challenged by Emergency relief preparation and response (Saab, et al, 2008). Timely and accurate information is critical to disaster relief and solutions to availability go beyond issues of standardization. Effectively collecting, compiling, analyzing, and disseminating timely and relevant information is one of the primary challenges for humanitarian information management and exchange activities.

The faster organizations can exchange good quality critical humanitarian information, the more effective the disaster response becomes. Yet, identifying and compiling information for humanitarian assistance is not easy and can be very time consuming. Usually, humanitarian information comes from a multitude of different sources and is often constantly changing. It is often incomplete or contradictory. In some cases, there is an overload of information, and in other cases, there are complete gaps in what is known. The issue of availability of accurate and timely information for disaster response arises and need more clarification. (Saab et al, 2008).

WFP's ICT division has developed an autonomous system to respond to emergency situations. The system is comprised of satellite and radio networks supported by independent back-up power supply systems, including generators and solar panels. This means that ICT staffs are on ground before any other team or service to the affected community. Non Governmental Organizations (NGO) partners may benefit from WFP's ICT system if funding is available. For the Positioning as 'Global Partners for Emergency Communications', Vodafone Foundation (VF) and the United Nations Foundation (UNF) in 2008 become key members of the WFP's select group of Global Humanitarian Partners, through a combined $6.1 million 3-year commitment to increase the effectiveness of the information and communications technology (ICT) response to humanitarian emergencies around the world.

When disasters strike, people need food, shelter, blankets, and medicine. But without an effective communications network, supplies are left undelivered, and relief workers are unable to do their jobs, communication is essential to save lives. Local communications are at best primitive or at worst unpredictable. Only when communication systems are in place can aid workers effectively manage the movement, delivery and monitoring of critical food/ medical or other assistance while ensuring their own safety at the same time. WFP ICT rapid response teams are dispatched to emergencies with the equipment necessary to get communications up and running within 48 hours. In between crises, the crews travel to WFP's operations, providing the necessary technical support and continuous upgrading of the ICT network.

Despite ICT's remarkable contributions some staff and supervisors of world food program (WFP) embrace the use the emergence response software (COMPAS) with laxity, believe the system is sophisticated to learn and use and has relatively more load than none user. Such behavioral orientations significantly contribute to the general inefficiencies of WFP and its operations. Since WFP deals with emergence cases (life saving cases) irresponsibility, carelessness and other related orientations may probably cost people's lives; thus a need to investigate into such behaviors. Therefore, the researchers wanted to evaluate the contributions technology can be adjusted in emergence response management in WFP in Uganda. The study was guided by specific objectives as to: i) examine the existing IT infrastructure in terms of performance expectancy, effort expectancy, facilitating conditions and social influence; and ii) examine processes of social influence that affect individual behavior in terms of compliance, identification and internalization, using the Unified Theory on Acceptance and Usage of Technology (UTAUT) model (Vakentesh, et.al, 2003) and Kelman (2005) psychosocial influence model.

2.0 Literature Review

The ICT revolution has created the opportunity to develop tools to manage a wider range of data more systematically, applying statistical techniques to predict and analyze emergencies and conflicts. While such systems continue to develop, they are only the starting point. It is still unclear what role ICT can play in responding to emergency and preventing conflict, but the best examples can be found in the ways in which improved communications technology can build bridges between groups in conflict. This can be at the diplomatic level, but also at the community level, where social reconciliation may play a role at least as important as that of diplomatic initiatives. Examples of this can be found in the work of organizations such as War Torn Societies Project International, which promotes links between communities using media, such as video exchanges, providing communities in conflict with a better understanding of each other, a vital step towards peace (Stauffacher, Drake , Currion & Steinberger, 2005).

ICT provides competitive advantage which is a fundamental requirement for an organization if it is to survive in the long term and in reality few organizations achieve competitive advantage and sustain it. ICT is perceived as a means for providing more efficient processes that may lead to lower cost in operations and services delivery. The significance of ICT is increasingly being acknowledged as strategy and new technologies that has progressively penetrate the core business of humanitarian organizations. Since ICT has becomes a complex reality, there is a need for it to be simplified so that it becomes more useful and adoptable to all stakeholders. ICT simplicity generates a smarter, faster, more efficient

and better environment for organizations to speed up their innovation and efficiency. Simplifying ICT as a means for organizations and Agencies' competitive advantage is a gateway to innovation (Ozceylan, et al 2008).

The introduction of new and advanced technologies greatly enhance the service of Information Technology and Telecommunications for humanitarian assistance in all sectors from preparedness and prevention to response and the continuum from relief to development. Inter-operability of all elements of the telecommunications structures used by the various partners in such work is however of prime importance and has a key role in the process towards the full application of new and advanced technologies in humanitarian assistance. This includes facilitation of the use of the public networks by common standards for priority calls (Zimmermann, 2003).

Information and communications technologies (ICTs) cuts across a variety of technologies and other information processing technologies and systems; telecommunications technologies and infrastructure (fixed line, wireless, satellite based and mobile infrastructure); and communication network technologies and infrastructure (including local and wide area communications and computer networks for voice, data and video). (Clement, 2010) have been employed. Other technologies that forms part of ICTs include: broadcasting networks and technologies including radio and TV networks; production-based technologies including those used in computer-integrated manufacturing and production systems and operations and the Internet as a globally-based delivery platform, incorporating elements of computers, telecommunications, communications technologies and networks and other multimedia development and delivery technologies to form an integrated multimedia transmission and communication delivery infrastructure and platform with a global reach.

Communication channels provide the decision-makers at each level with exactly the type and amount of information which corresponds to the scope of their decisions. In practice, the capacity of the communications channels has a tendency to become a decisive factor for effectiveness of the system, and may negatively affect decisions made at the higher levels, through lack of information, or by encouraging micro-management by providing excessive amounts of details and non-consolidated data. A good example is faxing only locally relevant logistics data from the event site to the procurement section at country offices or headquarters. This service needs to know, what quantities of goods can be accepted, stored and handled within in a given period, but is not concerned with the means used to implement these tasks locally.

Humanitarian Emergency Responses Management

According to Williams, Batho and Russell (2000) the aim of a disaster response is to restore normality as quickly as possible, with the initial stage of emergency response being both critical and immensely stressful. The extent of prior warning, and the ways in which this may allow avoidance or controlling actions to be taken are seen to be vital. More than simply vehicles for personal communication, Facebook, Twitter, and other social media tools are also proving to be vital components for timely and effective responses to natural and man- made disasters. From flood and earthquake relief to supplying essential supplies and support to refugees during military conflicts, traditional humanitarian organizations like the Red Cross and the UN Office of Coordination of Humanitarian Affairs are beginning to use social media to map their responses in times of need. "We spoke with one of the world's leaders in the field", (Gisli Olafsson 2011).

The complexity of ICT has led to formation of global partnership for emergency communication and launched by WFP hence creating a groundbreaking "ICT humanitarian emergency platform" in support of the entire community operating in emergency (i.e. UN agencies) and NGOs and increasing efficiency and coordination of emergency communications by optimizing and standardizing ICT solutions in emergencies, expanding the pool of trained ICT experts, establishing a network of stand-by partners ready for deployment, and enabling immediate dispatch of ICT emergency responders. And as a result WFP ICT constantly seeks for opportunities to create strategic alliances with the private sector to open new avenues to improve ICT emergency preparedness and response in humanitarian operations.

ICT is crucial in forecasting and building resilient communities better able to respond to humanitarian emergency, when disaster strikes ICTs help to coordinate complex relief mission. ICTs are also critical tools in peace keeping operation including logistics; it can help address the root cause of violent conflicts by promoting access to knowledge, mutual understanding an essential factor in conflict prevention and post conflict reconciliation. ICTs also offers ways to reveal human right abuses, promotes transparent governance and give people living under repressive regime access to uncensored information and an outlet to air their grievances and appeal for help and to improve well being of individuals and communities at risk.

Technology and Disaster Management

GIS technology in particular has made an impact, providing map products that are more up-to-date, thematically relevant and more widely disseminated than ever before, helping to guide interventions more effectively and the best example is the Information Management System for Mine Action (IMSMA) system, provided by the Geneva Centre for Humanitarian Demining, which develops and disseminates data on issues related to mine action. GIS has spread rapidly, with actors such as the Joint Research Centre of the European Commission. On the other hand NGOs, such as the UK based Map Action, specialize in satellite earth imaging matched with locally deployed teams to create real-time maps of disaster areas, work to improve the use of geographic information. (Stauffacher, Drake, Currion & Steinberger , 2005). Significantly, information technology has simultaneously become a major target and a necessary weapon in conflict /crisis. The interrelatedness and progressive integration of civil and military information technology both accentuates the dual-use problem and increases the vulnerability of the civil society.

ICT helps in disseminating information on hazardous areas to the civilian population, aid workers and international peace support forces more easily; Information is a vital component of mine action. IMSMA enabled to rapidly collate and analyze an enormous amount of data. This in turn helped us to plan and prioritize clearance effort, and assisted with the integration of other activities such as mine awareness education. Throughout the entire mine action Programme, IMSMA was constantly used to manage the ongoing operational activities, and without it, the task would have been much more difficult. (John, 2001) ICTs can play a key role in facilitating trust relationships. The principles of Open Source Information – seen in the development of the Tarîqa information system by the EU – offer a new way of dealing with information that can avoid the traditional problems of classification and declassification. (Stauffacher, Drake, Currion & Steinberger, 2005).

It is also important that data is collected and managed throughout an emergency. This will not only increase financial and end-user accountability, but will also be essential if lessons are to be learned for future responses. This may include the creation of a central library or database to store hazard risk information and disaster statistics. The maintenance and updating of such a service is essential. Clear systems for financial data tracking and management should also be developed and tested in advance. Information management should be a routine activity and should begin in the preparedness phase and continue through the early recovery period. Where possible data is collected, it should also be made publicly accessible. This data will be essential in the evaluation of preparedness systems after a hazard event and in promoting ongoing learning to enhance systems to develop. (UN/ISDR & UN/OCHA, 2008).

ICT equipment: PCs, PDAs[i], servers, mainframes, network databases and software are used for food security analysis, including statistics, modeling and mapping. In particular geographic information systems (GIS) can help to establish cross-sectoral communication - by providing powerful tools for storage and analysis of statistical data, and integrating databases of different sources in the same format, structure and map projection. Using Communication infrastructure relevant information can be distributed via the Internet and other communication channels to communities, and can be presented on web portals and interactive maps. In countries subject to recurrent food security crises, the UN World Food Programme (WFP) conducts a comprehensive food security and vulnerability analysis (CFSVA), providing a complete picture of the food security situation in each country and this has been possible with the help of ICT (Aranzazu, et.al 2009).

ICTs can further be used to improve the supply chain of food products and thereby enhance food security. Manufacturers, as well as humanitarian agencies, can make use of ICTs to boost food output and monitor inventories. Tracking of food supplies and inventories has been improved with the use of Commodity Movement processing and Analysis Systems (COMPAS) and radio frequency identification (RFID) tags. An RFID tag is an electronic device made up of a chip and antenna. It allows the identification and tracking of shipments (including food products) using radio-frequency communication, However it is largely limited to some developed countries. (Aranzazu, et.al 2009). There are several ways in which information and communication technologies can address this problem at the local and global level. ICTs are used by many international organizations for mapping and monitoring world food supplies, early warning systems, and to respond when disasters strike. In this area, ITU's work on telecommunication and radio communication standards is essential to the functioning of the humanitarian community.

Furthermore the Humanitarian Emergency Platform website has been developed to support IT and telecommunications specialists operating in humanitarian emergencies. This platform is a unique communication and collaboration tool that can help the entire humanitarian community in exchanging knowledge and creating a live network of expertise. In major emergencies that require a joint response by several UN agencies, it's essential to ensure coordination to have a system in place which allows telecommunication services to be set up quickly and efficiently. The Emergency Telecommunications Cluster (ETC) groups together with UN agencies and other humanitarian partners with relevant expertise collaborate in order to achieve the task. Because of its extensive experience in emergencies, WFP leads the Cluster. ICTs can be used to facilitate a number of aspects of the socio-economic development process in both developing and developed countries and some of the areas where the deployment and utilization of ICTs can have a significant impact on the developmental process of nations include but not limited to humanitarian assistance and other socio-economic aspects.

The deployment and exploitation of ICTs to facilitate administration and service delivery has the potential for improving administrative and service delivery efficiency (Aranzazu, et.al 2009). This can be done by enhancing and improving government responsiveness to citizens, reducing administrative, operational and transaction costs of governments administrative activities; service delivery functions and operations through the reduction of operating inefficiencies; exaggerated spending and unnecessary excessive paperwork, improving productivity within the government machinery and institutions. The cumulative impact of all these on the overall developmental process of a given nation can be significant.

ICTs can play a major role in the extension of services to the rural populations. Services like health, education, social services and various types of government services can be made available to rural peoples through the deployment and exploitation of various ICT programs and improve the delivery of public services through computerization of schemes and the potential impact of ICT on development can be enormous, particularly in terms of improved health, hygiene, nutrition and education. Clement (2010) asserts that through ICT it's now possible to improve access to limited educational resources in a larger population. It is also possible to provide high quality education through the use of ICT at an affordable cost to a wider population than it used be hence increasing the level of literacy. There is increasing evidence that access to ICTs can have a direct impact on raising living standards and improving the quality of life of the poor.

3.0 Methodology

The study employed both Qualitative and Quantitative approaches but inclined more towards quantitative paradigm. A survey design was used in selected samples of WFP. This study considered eight WFP Sub offices, two Central Delivery Points (CDPs) and Country office, 18 COMPAS staff, 7 ICT staffs and 30 other field workers in logistics department of WFP, Who have served WFP Uganda for more than two years, they had a chance to fill the questionnaires because they have participated in some or most emergency operations; employing both scientific and non scientific sampling techniques-simple random and purposive respectively, findings showed that performance expectancy was rated satisfactory (mean=3.16); It emerged that staff rated COMPAS very satisfactory (mean=3.29) and this is attributed to the system upgrade (COMPASv2) hence Full WINGS compatibility, Unique commodity tracking and information network worldwide, Communication with other WFP systems. Ability to monitor the performance of Partners, Ability to process transport invoices and avoid unneeded delays, Readiness for the annual reporting exercise (SPR), and Transparency, integrity and accountability to Donors, partners and beneficiaries, Access to food-aid information at all level of organization, Ability to report and monitor Key Performance Indicators (KPI) all along the food supply chain, Availability of food aid information for better planning and decision-making. (COMPAS rollout may 2004 on WFP).Results further show staff rated resources, knowledge, and support to use COMPAS satisfactory while compatibility with other applications apart from excel unsatisfactory (2.33) with overall rating satisfactory (2.98) hence agreeing with Venkatesh et al. (2003) that facilitating condition is necessary for system implementation, as far as COMPAS is concerned favorable condition are need to have staffs produce result to support decision making. Results showed a higher level of COMPAS use since staff rated it satisfactory (mean=2.91) and gives its urgency and need in the operation, making the system relevant in order to have information shared to save life, however information sharing was the challenge sighted by Gianmarco, Franco, Michael, Hermann and Erwin, 2012 in the study on Humanitarian logistics as essential element of disaster management and most of the staff agreed to that since the Information System is for WFP only. Results also show staff rated system very satisfaction (mean=3.28) confirming that the system matches with the staff's perceived value and organizational underlying values and are committed to its use. Results further showed that staff rated the system as satisfactory referring to COMPAS as a great tool for use in accomplishing their tasks and also agree being proud of using and owning it. Hence agreeing with Kelman (2005) that an individual will accepts influence to use the system because s/he wants to establish a satisfying self defining relationship with others. Here the system was rated unsatisfactory (mean=2.07) implying staffs will not use the system hoping to achieve a favorable reaction from another person or group. Staff member are willing to use COMPAS without extra reward hence staff are committed to it use because of underlying organizational value hence disagreeing with Kelman's explanation that an individual will agrees to the induced behavior because he expects to gain a rewards or avoiding punishments. Staff rated using COMPAS as satisfactory (mean=2.90) showing its helpful tool for both organization and staffs in getting the tasks done and in having information shared among staff though located far from each other.

Table 1: Summary of Variables

Construct	**Mean**	**Interpretation**	**Ranks**
Performance Expectancy	3.16	Satisfactory	2
Effort Expectancy	3.29	Very satisfactory	1
Social Influence	2.74	Satisfactory	6
Facilitating Conditions	2.98	Satisfactory	3
Behavioral Intention	2.90	Satisfactory	4
Attitude toward Using COMPAS	2.90	Satisfactory	4
Model Mean	**3.00**	**Satisfactory**	

Through UTAUT model the overall rating for COMPAS is satisfactory (3.00) showing how important ICT is in WFP Logistics operations and emergency response management

Table 2: Overall Model Mean (Kelman)

Construct	**Mean**	**Interpretation**	**Ranks**
Internalization	3.28	Very satisfactory	1
Identification	2.84	Satisfactory	2
Compliance	2.07	Unsatisfactory	3
Model Mean	**2.73**	**Satisfactory**	

Through Kelman's model COMPAS was also rated satisfactory (mean=2.73) showing how social influence affect ICT use.

There was a significant relationship between ICT Usage and individual behavior. This position was as a result of the computed sig value (0.005) being less than the critical sig values (0.05); implying that the computed statistic (-0.87) was large enough to reject the null hypothesis. More so, r-value is close to the threshold value of 1 which signals a strong negative relationship. This further suggests that the more ICT usage increases, the more individual behavior is affected negatively and vice versa. There was also a significant difference in opinion between field staff and administrators. This position was as a result of the computed sig value (0.006) being less than the critical sig values (0.05); implying that the computed statistic (7.43) was large enough to reject the null hypothesis. This proposition is affirmed by the difference in means. Much as the field staff seems to judge the system as fair (2.21) the administrators suggest it is satisfactory (3.25).

4. Discussion

Performance Expectancy was significantly correlated with attitude toward COMPAS use with value of 0.44 indicating a positive moderate linear relationship according Ratner, B. CRC Press, Taylor & Francis, 2012 interpretation and a satisfactory rating of 3.16 from analysis of staffs' responses suggesting that staffs performance would increase with the continued use of the system, increase financial and end-user accountability providing powerful tools for storage and analysis of statistical data, and integrating databases of different sources in the same format as agreed by Aranzazu, et.al 2009. Effort expectancy had a significant weak liner relationship with attitude toward using COMPAS, (-0.16) showing the two subject increase inversely and but since the system was rated very satisfactory (3.29) show that the system is a great tool for both staff and WFP logistics operation, logistics and warehouse staffs' activities are almost all integrated into the system enabling offices to share information regardless of location hence agreeing with Gianmarco, Franco, Michael, Hermann and Erwin, 2012, in their study on humanitarian logistics.

Social Influence construct had also significant weak liner relationship with attitude toward using COMPAS, (-0.18) though overall mean rating was satisfactory (2.74) support from WFP logistics was tremendously recognized as a greater contributor to the systems COMPAS while people thought to be influential and important were rated unsatisfactory implying their influence does not contribute to system use however concern is that the two question sound verge and need to be rephrased to become more meaningful and specific to respondents and this is agreed by Amanda, (2003). Facilitating Condition construct significantly correlated with attitude toward COMPAS use with -0.8 indicating a strong negative linear relationship via a firm linear rule. The overall mean for this construct was rated satisfactory (2.98) implying sufficient resources available for COMPAS use but question about compatibility was rated unsatisfactory (2.33) indicating an obstacle that may need improvement to allow staffs use COMPAS comfortably with other applications however it has also matched well with Stauffacher, Drake, Currion & Steinberger, 2005 finding that ICTs can play a key role in facilitating trust relationships in their development of the Tarîqa information system by the EU offering a new way of dealing with information that can avoid the traditional problems of classification and declassification. The overall mean rating for this construct was satisfactory (2.90) showing high intension to use COMPAS during emergence response management by staffs, this is confirmed by moderate positive linear relationship of 0.4 via a fuzzy-firm linear rule. Confirming COMPAS in a vital tool for logistics operations in tracking commodity movement and accountability hence agreeing with Gisli Olafsson 2011's assertion that ICT has become increasingly useful in emergency response management.

5. Conclusions and Recommendations

According to the findings IT/COMPAS plays great roles which include but not limited to: Ability to monitor the performance of Partners, Ability to process transport invoices and avoid unneeded delays, Readiness for the annual reporting exercise (SPR), and Transparency, integrity and accountability to Donors, partners and beneficiaries, Access to food-aid information at all level of organization, Ability to report and monitor Key Performance Indicators (KPI) all along the food supply chain, Availability of food aid information for better planning and decision-making and ability to see the type of commodity requested, dispatched, received/ delivered, lost and cost incurred, however, COMPAS need to adjusted in order to be compatible with other applications that are used by staffs and all staffs need to have COMPAS training in order to be well equipped for the operations. This study can be further be investigated looking at WFP as whole not only Uganda since IT is used globally and emergencies occurs globally, the interagency relationship in emergency through IT can also be examined further, More future researchers can also have a basis to peer more insight on the role of ICT at an advanced level and prove further the finding basing on the two theories used given that IT is advancing every day. Need to have constant refresher training for staff.

References

Alexander, S. Tatiana L., Mikhail P., Nikolai S. & Anna K., (2007) "Disaster response based on production network management tasks", Management Research News, Vol. 30 Iss: 11, pp.829 – 842

Bagozzi, R.P. (2007), "The legacy of the technology acceptance model and a proposal for a paradigm shift.", *Journal of the Association for Information Systems* 8(4): 244–254

Chuttur, M.Y. (2009), *Overview of the Technology Acceptance Model: Origins, Developments and Future Directions*, Indiana University, USA, Sprouts: Working Papers on Information Systems, http://sprouts.aisnet.org/9-37

Gianmarco, B. Franco O., Michael B., Hermann S. & Erwin H., (2012) "Securing disaster supply chains with cryptography enhanced RFID", Disaster Prevention and Management, Vol. 21 Iss: 1, pp.51 - 70

Koichi, S & Glenn F. (2011), Chapter 6 Innovative Approaches in Disaster Education, in Rajib Shaw, Koichi Shiwaku, Yukiko Takeuchi (ed.) *Disaster Education (Community, Environment and Disaster Risk Management , Volume 7)*, Emerald Group Publishing Limited, pp.115-136

Jérôme, C & Gilles P. (2010) "Investigating humanitarian logistics issues: from operations management to strategic action", Journal of Manufacturing Technology Management, Vol. 21 Iss: 3, pp.320 - 340

Richard, O& Richard G. (2006) "Humanitarian aid: an agile supply chain?", Supply Chain Management: An International Journal, Vol. 11 Iss: 2, pp.115 - 120

Peter, H. T & Stephen J. P. (2010) "Transforming humanitarian logistics: the journey to supply network management", International Journal of Physical Distribution & Logistics Management, Vol. 40 Iss: 8/9, pp.609 - 622

Alan, C & Jens N. (2009) "Volatility, unpredictability and asymmetry: An organising framework for humanitarian logistics operations?", Management Research News, Vol. 32 Iss: 11, pp.1024 – 1037.

Gyöngyi, K & Karen S. (2009) "Identifying challenges in humanitarian logistics", International Journal of Physical Distribution & Logistics Management, Vol. 39 Iss: 6, pp.506 - 528

Alan, C & Jens N., (2009) "Volatility, unpredictability and asymmetry: An organising framework for humanitarian logistics operations?", Management Research News, Vol. 32 Iss: 11, pp.1024 – 1037.

Gyöngyi, K & Karen S., (2009) "Identifying challenges in humanitarian logistics", International Journal of Physical Distribution & Logistics Management, Vol. 39 Iss: 6, pp.506 - 528

Sebastiaan, J.H. R, Hans V. & Sirp J. D, (2007) "Co-ordinating humanitarian operations in peace support missions", Disaster Prevention and Management, Vol. 16 Iss: 1, pp.56 - 69

Sabine, F. Schulz & Alexander B., (2010) "Horizontal cooperation in disaster relief logistics: benefits and impediments", International Journal of Physical Distribution & Logistics Management, Vol. 40 Iss: 8/9, pp.636 – 656.