USE OF DIGITAL TELEVISION CONTENT IN NURTURING INNOVATION IN KENYA: A STUDY OF NAIROBI'S MEDIA PRODUCERS AND ENGINEERING JUA KALI ARTISANS

BY

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DECLARATION

Declaration by the Candidate:

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ABSTRACT

The Nairobi engineering Jua Kali artisans struggle with finding information for innovation in the digital television platform. Information is a resource. It has value and it lets people do things that they could not do otherwise. It is apparent that knowledge is not distributed equally throughout society. People who are in financial poverty, such as Jua kali engineering artisans are also often information poor. An unexpected and undesired possibility is that mass communication content produced by media producers might actually have the effect of increasing the difference or gap in knowledge between members of different social classes (Severin and Tankard, 2001).Therefore the researcher sought to find out how digital television innovation content can be of use to nurture innovation among engineering Jua Kali artisans. The study objectives were: - To determine how engineering content shown in the Kenya digital platform inspires creativity for innovation among Jua Kali artisans. Further, to examine the challenges in place to produce edutainment content for engineering Jua Kali artisan; To assess whether digital television innovation content can be easily accessed by engineering Jua Kali artisans. The study took on a mixed approach involving qualitative and quantitative designs. It also employed a multiple case study method. A total sample size of 65 respondents was selected: 53 Jua Kali artisans were sampled for the quantitative aspect of the study through multistage sampling. An additional 5 Jua Kali artisan were sampled through snowballing and lastly7 media producers were purposively sampled for the interview process, which is the qualitative aspect of the study. The analysis of data was an interactive process along themes created from both quantitative and qualitative data. The findings showed that the majority (0ver 75%) of Jua Kali artisans had access to digital television platform gadgets. However Jua kali artisans (70.2%) found it difficult to locate work related content for from digital television platform. Media producers reported that there was low funding, poor policy structures and a rigid media industry inflexible to the audience needs. It is hoped that this finding will sensitize the digital television platform practitioners in Kenya and the rest of Africa on adopting strategies and developing policies that can encourage the production of innovative content for Jua Kali artisans.

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ABBREVIATIONS AND ACRONYMS

ICT-	Information and communications technology(s)
PSB-	Public Service Broadcasts
BBC-	British Broadcasting Corporation
EPG-	Electronic Program Guide
RSS-	Really Simple Syndication
IPTV-	Internet Protocol Television
ISPS-	The International Ship and Port Facility Security
DTT-	Discrete Trial Training
UGC-	User Generated Content
TVN-	Television New Zealand
GDP-	Gross Domestic Product
DiTV-	Digital Interactive Television
HDTV-	High-Definition Television
VoD-	Video on Demand

OPERATIONAL DEFINITION OF TERMS

The following terms are defined as used in this research:

Innovation: This refers to the engineering Jua Kali artisans gaining new insights, ideas, concepts, developments and modifications to apply to existing inventions from the Television digital platform.

Television: A system for transmitting visual images and sound that are reproduced on screens, chiefly used to broadcast programs for entertainment, information and education

Digital Television: Refers to the transmission of television signals using digital rather than conventional analog methods

Jua Kali engineering artisans: Refers to the informal sector comprised of artisans in mechanical engineering, who is working under the hot sun because of a lack of premises

Engineering: In this study, engineering will be limited to a branch of engineering concerned primarily with the industrial application of mechanical engineering and with the production of tools, machinery, and their products

Media: Communication channels through which news, entertainment and Education data or promotional messages are disseminated. Media includes all broadcasting and narrowcasting mediums such: as newspapers, magazines, TV, Radio, billboards, direct mail, telephone, fax and internet

Digital media: Electronic media that work on digital codes (digitized content, text, graphics, audio, and video) that can be transmitted over the internet

or computer networks. All data generated in a computer are digital. Any type of information stored in the computer, including data voice and video.

Public Service Broadcast: Public service broadcasting refers to TV programs that are broadcast for the public benefit rather than for purely commercial purposes. These programs include local news coverage, arts programs and religious broadcasts.

Digital Television Platform: The concept of using up to date television technology which varies and could range from the use of the internet through computers, mobile phones, digital set boxes, DVDs and Smart televisions. All these have the possibility of producing and allowing access to all forms of content in high digital definition.

Nurturing: The process of cultivation, promotion and encouragement in the culture of creating innovation through the use of the digital television platforms.

CHAPTER ONE

Overview

1.1 Introduction to the study

To innovate is to think differently, it is creating new things, ideas, concepts, developments, improvements and ways of doing things to obtain strategic advantages (Ali, Ullah, & Khan, 2007). However, innovation cannot occur in the absence of acquiring knowledge on existing inventions (Khan, Ullah, & Murah, 2009). The Jua Kali artisans or blue collar workers in Kenya are considered to be the key product innovators in the informal sector, so sufficient knowledge acquisition is a key prerequisite for their survival.

Innovation Information is a resource. It has value and it lets people do things that they could not do otherwise. It is apparent that knowledge is not distributed equally throughout society. People who are in financial poverty, such as Jua kali engineering artisans are also often information poor. An unexpected and undesired possibility is that mass communication might actually have the effect of increasing the difference or gap in knowledge between members of different social classes Severin & Tankerd (2001). This study focuses on engineering blue collar artisans who work under the hot sun is also known as Jua Kali engineering artisans. Jua Kali artisans are affected by issues of knowledge accessibility. Most of them are from a low economic background and are unable to innovate.

An outline by Kerrin (2009) brings to the fore, that an intense involvement in domain specific knowledge is a pre- requisite for innovation. Domain –relevant knowledge reflects how much an individual knows about a given area. The knowledge does not need to be highly complex or detailed and it can be broad (Kerrin 2009). It is therefore in order to suggest that the digital television platform can create a media system that Jua Kali artisans can learn from and acquire domain relevant knowledge, useful for innovation.

It is also likely that when one looks at the Kenyan Jua Kali artisans, one sees people with a lot of potential. One may wonder loudly why they seem not to make much headway even as they try their hands on various products. They appear to be doing things the same old way, sometimes in ways that have been tried elsewhere in the developed world and failed. Wangare (2015) suggests that the reason could be that Jua Kali artisans apply reverse engineering and trial and error as the primary knowledge creation activities in the sector. Perhaps this is why they don't seem to make much headway in innovation. Many other Kenyans share this outlook. An example is Micheni (2007) who observes that most Jua Kali artisans live in Nairobi area and they trek to their sheds to tackle what has become routine Jobs. Lack of novelty has derailed the promising Jua Kali industry.

Again Ndemo (2014) mentions that the sector of Jua Kali is characterized by poor infrastructure, lack of financial resources, poor production capacity, low levels of health and safety standards, low awareness of environmental issues, little or scarce information that is essential for technology transfer and dependence on large industries for the supply of raw materials. Subsequently, it would be essential to emphasize that the informal

contacts with these Jua Kali artisans bring to the fore, a lack of innovation information, and inability to access information that would make their products and services better.

It is noticeable that innovation information on past strides in existence is not easily and readily available to the Jua Kali artisans in Kenya, especially through the media. This is as expressed by Kibe (2016) who conducted a study on knowledge sharing techniques amongst Jua Kali artisans in Kenya. The researcher found that most of the Jua Kali artisans use mentoring as a way of sharing knowledge. These knowledge sharing techniques were hampered by a language barrier largely because trainees and trainers mostly communicate in their vernacular (Kibe, 2016). This could mean that if digital television platform would be adopted, it would be a necessary tool, because they can apply vernacular as a mode of communication in knowledge sharing.

Additionally, one expects that innovation information will be in a medium or form that Jua Kali artisans can comfortably consume however this is not the case. The relevant, yet scanty Innovation information out there in the media on past endeavors is in areas other than what the Kenyan Jua Kali engineering artisans are engaged in. This is as depicted by Wangare (2015) who conducted a study on knowledge management in the informal sector. A review of Kenya's Jua Kali industry, Wangare (2015) concludes that there are informal knowledge management practices among the Jua Kali. Results suggested that Jua Kali mediums for information included exhibitions, workshops and seminars that typify channels through which new ideas are disseminated to Jua Kali artisans. Knowledge sharing is characterized by drawing sketches and modeling, while Knowledge preservation is largely defined by photography. Knowledge retention and protection were however found to be uncharacteristic of the Jua Kali sector (Wangare,

2015). It is evident that low media usage in knowledge management could be a factor that affects Jua Kali artisan's ability to access relevant information for innovation. If the media was used accurately, It could change how Jua Kali artisans retain and protect knowledge. The researcher therefore feels that Jua Kali artisans would be at the high end of innovation, if content on past prosperous and failed endeavors was available to them in the form they can easily understand and preferably through a medium of choice.

Media producers will be pivotal in this study in explaining how the digital television platform can be adopted as the media of choice among Jua Kali artisans. UNESCO (2016), has regarded the media as part of a useful tool in meeting the sustainable development goal of using platforms, such as the media, that offer a forum for accessing creative and innovative productions for development, especially for populations like the Jua Kali artisans.

UNESCO, (2016) cites that media producers are pivotal in understanding the issues of content production and distribution. The producers assist in promoting understanding between populations. Further media producers are also decision makers who could be broadcasters in developing countries public or commercial broadcast companies that rarely purchase the broadcasting rights of the content made locally.

Additionally UNESCO is sensitizing the decision makers and the public at large about the importance of local content in the promotion of cultural diversity and facilitating alternative communication channels and showcasing local productions at the local and international level (UNESCO, 2016). Therefore, in this research, media producers will

be pivotal in explaining how content could be availed to engineering Jua Kali artisans, who are seen as potential local innovators that encourage the countries' development.

1.2 Background of the Study

In the world over various examples can be cited of the great innovations that were developed, operated but failed. However, this knowledge was never shared through the appropriate medium. The sharing of this knowledge on innovations could lead to great innovation cultures. For instance Westcott, (2013) explains that in the US, the Concorde, which was seen as the fastest aircraft, after its 1969 maiden flight, was considered an engineering marvel admired by NASA. It was the envy of airlines around the world and was heralded as the dawn of a new age in supersonic passenger air travel. Unfortunately, just 20 of these air crafts were ever built and the high running costs saw a trip on the Concorde become a luxury flight rather than routine transport which ultimately led to its eventual collapse (Westcott, 2013). It can be cited that minimal information has been shared on the inventions of the Concorde with the public through different digital media. If the information was shared via the digital television platform, on how and why the innovation failed or how the invention could have been improved, it would enhance innovation to those in the formal and informal aeronautic engineering industries.

Additionally, the Microwave oven is just but another innovation that was supposed to sound the death strike to the traditional oven. Utilizing microwave radiation to heat water inside the food, it was able to cook food inside out, therefore faster and efficient. However, the inability to put metal objects inside microwave ovens and their tendency to

heat crockery more than the food as well as their association with unhealthy ready meals, meant they only ever become an addition to the oven rather than a replacement (Food Matters, 2013). This too should have been made known through the digital television platform and would have contributed to innovation in the field of electrical and mechanical engineering.

A further illustration of the need for sharing information on innovation using television, digital platform can be demonstrated. A key example is the high rise buildings which began springing up in cities around the United Kingdom to replace the buildings destroyed by the Ariel bombardment during the blitz. These high rise buildings provided cheaply and easily assembled housing which allowed large numbers of people from the crumbling tenement blocks to be given homes. They were seen as bold social experiments and were welcomed for their innovative design and spectacular views. Soon everyone would be living in high rise utopia. However, council budgets for maintenance and poor building materials saw these dreams turn sour and they have now become a symbol of 1970s ugliness and poverty (Salter, 2014). If this information was aired on the digital television platform, then constructors would pay attention to the dangers of such inventions and perhaps the countries formal and informal architectural engineers would innovate on this product.

Currently, high rise buildings are ranked among the least desirable places to live in the UK (Gray, 2009). On the other hand, In Kenya they are seen as fashionable due to economy of space and other resources (Mbuthia, 2010). Yet the public are not informed

through the digital television platform on the dangers of high rise buildings. Many constructors continue to build such designs due to scanty knowledge on their demerits. Such information should be provided freely through the digital television platforms.

In Kenya many product and service innovations have been successful and others unsuccessful, however, little has been shared through the media on the countries' innovation strides. A case in point is that of Maurice Tito Gachamba from Nyeri county who made an aircraft in 1968 and went ahead to fly it. Gachamba used an 850 cc scooter engine and scrap metal to build the fixed wing plane and he managed to fly from the airstrip and crossed over the Kenya police college in kiganjo (Weru, 2015). Even with such remarkable success Kenyans do not have access to his innovative ideas via the media. Various other individuals, especially in the Jua Kali industry have tried to accomplish what Gachamba did, but it has been in vain. Their biggest stumbling block has been a lack of access to information which could be availed through the digital television platforms.

Again in Kenya in the town of Eldoret a man made a tractor from two motorcycle engines. He was the marvel of the village because he had just built a tractor with twin motorcycle engines. His success story was featured on KTN news channel (Kilonzo, 2016). However, his invention was not given much air play on the Kenyan digital television platforms, so that other innovators can better the innovation.

There are inventions in our modern day that have been improved through the use of digital television media. For instance, the advent of broadcasting culinary arts and

sciences has brought growth in the hotel industry. This has been shown by shows such as Master Chef, Hell's kitchen and Top Chef. Goodman and Johnston (2015) explain that food celebrities on TV are now viewed as trusted friends whose advice is invaluable. For instance, Jamie advises you on cooking a healthy, inexpensive dinner. While Michael provides a set of rules, one of such says eating anything your grandmother wouldn't recognize as food is not good for you. As for Nigella (he/she) confides in you about her love for chocolate. Gordon simply tells you straight about how you take out meal is crap and is killing your kids. Hugh urges you to buy, cook and eat more sustainable fish. Guy is more laid-back giving you a tip about the best hamburgers or BBQ you can find in Main Street USA (Goodman and Johnston, 2015).

Fans of food celebrities frequently refer to them using their first name and take their product recommendations and lifestyle advice very seriously. People buy their books and watch their shows as well as look for their counsel when they are making daily food choices (Goodman and Johnston, 2015). Such a culture on television enhances favorable competition in creating globally acknowledged cuisines. This contribution is boosting tourism economies and bettering the individual's quality of life through knowledge on nutrition and food science via digital television content.

Today motor and sports enthusiasts are able to watch shows on motor engineering. A show such as Top gear, which is published on British Broadcasting Corporation (BBC) and Motor World and is also broadcast in Deutsche Welle (DW) is educating the masses on new technologies and inventions in motoring. The education has created a catalyst of

motoring engineering enthusiast whose innovations are improvements on existing concepts in engineering (Williams, 2015). It encourages motor buyers to buy fuel efficient vehicles that are fast and gas emission friendly.

In sports, the media have shown great promise and promoted the ‘do it yourself’ culture in giving information to athletes on how to better their performance. Kenyan world javelin champion Julius Yego challenged the world when he equipped himself with skills and techniques in javelin throwing through digital television channel You Tube and the internet and won himself a gold medal in Beijing (Bonsteel, 2015).

Shows on housing and construction design are also educating the masses on the latest architectural designs. This is creating an influence and changing the face of how modern houses are built. Shows such as fine living in the digital platform are positively impacting peoples’ creativity as a result, they now dream and draw designs that are fashionable and stylish-(Harrington, 2015).

Digital technologies have had a monumental impact on music culture and the music industry. Indeed, the advances made over the last 10 years were perhaps the most revolutionary of any since the advent of recorded sound more than a century ago (Gluck, & Sinnreich, 2005). The primary change is that, for the first time in history, music can be produced, distributed and consumed all on the same platform. This again is through the personal computer which is again part of the digital television platform (Gluck &

Sinnreich, 2005). It therefore goes without saying that the digital television platform will no doubt greatly influence innovation in the Jua Kali industry if embraced.

1.3 Statement of Problem

The main problem that prompted this study can be expressed under three titles: contextual, Academic and Social. The Contextual Problem seeks to refer to the difficulties that are related in the local context, the day to day experience of Jua Kali and media producers as main respondents in this study. Subsequently, the academic problem seeks to outline how scholars have interrogated the issues of innovation and filling information gaps through the media and it states methodological advances as well as deficiencies in their previous researches on this topic of study. Lastly the social problem outlines how the issue of innovation and information sharing through media has affected the world at large and the possible solutions that lay ahead.

1.3.1 Contextual Problem

From the aforementioned, it is very clear that television as a medium if well utilized can be a very effective tool for knowledge dissemination (Severin & Tankerd, 2001). Despite this huge potential, media producers and Jua Kali audiences in Kenya are yet to consider how the Kenyan digital television platform can be used interactively to inform for increased innovation. Kibe, (2016) conducted a study on knowledge sharing techniques amongst Jua Kali artisans in Kenya. Primary data were collected through interviews using self-administered questionnaires which were distributed among Jua Kali artisans.

Additional information on Jua Kali was collected from the relevant document analysis. The findings indicated that Jua Kali artisans use mentoring as a way of sharing knowledge. These knowledge sharing techniques are hampered by language barriers. This is because some of the mentors or trainees are largely illiterate and can only communicate in their vernacular (Kibe, 2016).

Again Wangare (2015) conducted a study on knowledge management in the informal sector. A review of Kenya's Jua Kali industry. The research was based on a survey focused on four knowledge management practices identified from the literature reviewed. It was found that Jua Kali artisans heavily relied on exhibitions, workshops and seminars for information, these are rare in the frequency they occur. Results underscored reverse engineering and trial and error as the primary knowledge creation activities in the sector, again Knowledge application was characterized by drawing sketches and modeling. While Knowledge preservation was largely defined by photography. Knowledge retention and protection were however found to be uncommon in the Jua Kali sector. It is from this background that the researcher concludes that, many engineering Jua Kali artisans end up vandalizing innovations in engineering while trying to make them work better. They have a limited understanding of how they can consult from the digital television platform, which can assist them to acquire knowledge on building efficiency on existing innovations.

Media producers on the other hand are still in the process of understanding how to access and use the different functions of the digital television platform. This is as depicted by

UNESCO (2016), which is sensitizing media producers through different funding processes on issues of understanding the digital television platform as an alternative to offering information for innovation in order to encourage local and international development.

1.3.2 Academic problem

In light of the academic problem, studies have been conducted in Kenya in the areas of knowledge management in the informal sector concerning Jua Kali artisans. For instance, Wangare (2015) Kibe (2016) & Buhejii, et.al (2015) have studied about Knowledge management in the informal sector and have reviewed the Jua Kali industry. The methods applied were survey and document analysis. However, they did not cover the issue of knowledge management under the use of the digital television platform. Again, they did not study the case of engineering Jua Kali artisan and their use of the digital television platform for innovation. To the best of the researcher's knowledge, the issue of nurturing innovation through the digital television platform is yet to be covered.

Nazari (2009) conducted a study on the impact of television on rural development. The purpose was to evaluate the role of television as an educational tool to the enhancement of farmers' knowledge. Using 161 farmers as randomized subjects, a pretest posttest design was conducted among them, as they worked and resided in the province of Kohgiluyeh van Buyer Ahmad, Iran.

After determining educational goals of the study, a questionnaire was prepared as a pre and post-test. Based on educational contents, one television program was produced on

fighting, agricultural pests and the correct use of pesticides. Participants' responded to the pretest before the program was aired and a posttest after the program was aired. The findings of the study showed a significant knowledge enhancement, which proved the effective role of television to improve awareness of practices among farmers (Nazari, 2009). From the findings of Nazari (2009), it is appropriate to state that television was seen to enhance knowledge for enhanced innovation. However Nazari (2009) did not focus on the digital television platform and did not focus on the role of media producers. Neither did he apply a mixed method approach that used a case study as a method. Again, most researches on the digital television platform were not concentrated on the Kenyan context rather they have a western background. To the best of the researcher's knowledge little has been done on the use of the digital television platform among engineering Jua Kali artisans in Nairobi. In light of this the researcher sought to establish how the Kenyan digital television platform could be used to nurture innovation among Jua Kali artisans using mixed approaches.

Corrie-Metcalf (2005) also conducted a study on the appeal of reality television from the uses and gratifications perspective. Using a qualitative method of in-depth interviews on 20 people, it was found out that television is a form of diversion, emotional release, a means of self-exploration and a learning tool. Moreover, reality television could be incorporated into the viewer's routines because it demanded little concentration. To the best of my knowledge, there are no investigations done on the use of the digital television platform to nurture innovation among Jua Kali artisans in Kenya especially using mixed methods. This study will therefore focus on using a mixed methods approach in

establishing how digital television platform could be used to enhance knowledge for innovation.

1.3.3 Social Problem

Accordingly, innovations and technology management has become an inevitable issue. Today, most of the innovations are limited to developed countries like USA, Japan and Europe, while developing countries lag behind in the fields of innovation and technology management. Since innovations and technology environments are by nature problematic, in developing nations a myriads of challenges face them. These include: poor business models, political instability and governance conditions, low education levels, poor access to usable knowledge, lack of world class research universities, an underdeveloped and mediocre physical infrastructure as well as lack of solid technology based on training human resources (Ali, Ullah, & Khan, 2007). In addition to all these; lies the most challenging factor, that of people having access to information that can aid in creating innovations.

Ndemo (2014) cites a UNEP Round Table discussion on knowledge sharing, It showed that SMEs in developing countries, including Kenya, are reluctant to change, often fearing that new technologies could put them out of business. Since many of these enterprises fall within several clusters scattered throughout the country, the impact of reluctance to change can be concentrated, with major implications for local economies. It also makes it difficult to disseminate information where there are no clear channels, such as industry organizations.

A recent brief survey done also by Ndemo (2014) in Mukuru Kwa Reuben, Kariobangi Light Industries, Dagoretti, Shauri Moyo and Outer Ring-Umoja, shows that nothing has changed since the Unep study. This was because, an earlier proposal to help the Shauri Moyo Jua Kali sector automate and produce more products for greater productivity and increased exports was vehemently opposed even by the artisans themselves. There was fear that such changes would put most of them out of jobs. Unknown to them was the fact that Chinese products are far cheaper, and have found their way into local supermarkets and would soon put most of the Jua Kali artisans out of work. This is the result of the minimalist thinking and failure to create industry associations where information can be disseminated.

1.3 Purpose of Study

The purpose of the thesis was to establish the use of the Digital Television Platform in nurturing innovation for Nairobi's Jua Kali artisans in the field of engineering. It is hoped that this study will spur the digital platform to design programs which will then nurture and initiate innovation among existing and upcoming Jua Kali artisans.

1.5 Research objectives

This research was guided by the following research objectives

i. To establish how engineering content shown in the Kenya digital platform inspires creativity for innovation among engineering Jua Kali artisans
ii. To examine the challenges in place to produce edutainment content for engineering Jua Kali niche groups in the engineering fields

iii. To assess whether innovative digital television content can be accessed by engineering Jua Kali artisans

1.7 Assumptions of the Study

Assumptions in this study are expectations that are somewhat out of the researcher's control, but if they disappear the study would become irrelevant. Leedy and Ormrod (2010) posited, "Assumptions are so basic that, without them, the research problem itself could not exist" (p. The assumptions stated below are probably true, as will be demonstrated in various areas of this research. The following assumptions are made about the proposed study:-

i. That the Kenyan digital television platform has structure and some programs that target engineering Jua Kali Artisans.
ii. That the engineering Jua Kali artisans have a need for knowledge of their industry
iii. That the Kenyan digital television platform provides information and other resources needed to gain knowledge on their operations regarding Jua Kali Sector
iv. That the Kenyan digital television platform employees will value and encourage a well-structured information system for innovation in the Jua Kali Engineering sector niche.

1.8 Scope of Study

In this section the researcher has presented the parameters under which the study operated. The scope has demonstrated how the problem fitted within the parameters. The

parameters under discussion were along the lines of the content scope which are the topics that the study covered. The contextual scope is the settings of the respondents in the study, while the methodological scope entails the limits of this study approaches and the geographical scope describes the locale.

1.8.1 Content Scope

This study focused on evaluating the type of content shown on the digital television platform and whether it inspires creativity in innovations. It focused on exploring the efforts that are in place to produce entertaining yet educative content for Jua Kali niche groups and how these efforts can be improved. Further, it sought to establish whether the content shown is interesting enough to capture and captivate Jua Kali workers in their niche market of engineering. Also, it evaluated the digital platform innovative content's accessibility to the Jua Kali artisans.

1.8.2 Contextual Scope

This study looked into the use of the internet, smart televisions, DVDs, mobile phones and how various other ICTs have been incorporated to bring about the airing of programs that foster innovation. It focused on understanding how information can be made more accessible to a niche audience such as the engineering Jua Kali artisan. Lastly, it laid emphasis on the prevailing challenges that hamper the use of the digital platform in getting innovative ideas in engineering.

1.8.3 Methodological Scope

The philosophical world view that this research took is the pragmatism. Robson (2002) and Creswell (2007) agree that the pragmatic world view of research is feasible because the fundamental values of the current quantitative and qualitative researchers are actually highly compatible and include the beliefs on the value of inquiry, the value of theory on the facts and that reality is multiple, complex constructed as well as stratified and that any particular set of data is explicable by more than a single theory.

1.8.4 Geographic Scope

This research took place in Kenya's capital city Nairobi, which is also a County. It focused on gathering data from engineering Jua Kali artisans and media producers who lie in various constituencies in Nairobi. Data was also obtained from media content producers and providers. Nairobi County gives easy access of digital television platform facilities to the engineering Jua Kali Artisan.

1.9 Justification for Study

The media industry in the rest of the world, Africa and in Kenya is ever changing. Recently most countries in Africa moved from the analogue to the digital platform. However, this change was considered a knee jerk reaction by many countries including Kenya. There was little research conducted to assist in the process of how Kenya will adopt to the media change (Fairweather, 2015). This research will therefore contribute in filling a gap in research in the area of the use of digital television platforms in Kenya and in Africa.

Furthermore, most studies in media have been carried out on how television could have negative impact on populations. Again, many television researches have also focused on motivation for television usage. However, few studies have been carried out in the area of the digital television platform and how digital television platform content can increase knowledge for innovation. Therefore, this research will fill the gap on how digital television can be a positive influence in society through engineering industry innovation.

In addition, most researches conducted in the area of digital television use are western based. Few are conducted in Africa. This study will therefore fill a gap because it will depict the African context of the digital television platform. Additionally, from the literature reviewed, most researches are carried out using purely qualitative or quantitative approaches. This research is different because it chooses the mixed methods approaches.

It is hoped that the research findings are useful in enhancing knowledge access by Jua Kali workers in engineering fields through the Kenyan digital television platform, and the media producers will be encouraged to produce and broadcast useful information in Jua Kali artisanship. In addition, it was also hoped that this research will provide insights for the digital television platform that will lead to enhanced creativity among the artisans. As a result, the engineering Jua Kali artisans are likely to produce goods that have a strategic advantage in the market.

Moreover, Nairobi to be precise is a metropolitan city which is regularly fed by a rural, urban migration which seeks to tap into development and employment opportunities for a better life. Therefore, this study has enhanced the digital platform provision of ideas on innovation and involvement in Juakali as a means of livelihood through innovation. Furthermore, the study of the Kenyan digital television platform and Juakali Artisan Innovation is new to Kenya as a country and also to the African continent. It is also hoped that it will add to the body of knowledge, advocating for the use of the digital television platform globally as a means of creating knowledge and innovation in the industrial sector. Conclusively, the study would be necessary in encouraging media owners, content producers and the programming industry to make use of the digital platform in promoting innovations through reality television content in the area of engineering.

1.10 Limitations of the Study

In this section the limitations as matters and occurrences that arose in the study are discussed. These are issues which were out of the researcher's control. The discussion will be guided along content, context, and methodological limitations.

1.10.1 Content Limitations

This research neither looked at changing medium terrains in ownership nor policy implications that enable the media environments. It also did not focus on whether the goals of innovation behind the digital migration are realized with respect to policy as well as demographics and viewership practices or mannerisms. Rather, it delimited these

limitations by conducting related literature review that gave insight on some issues raised but not focused on.

1.10.2 Methodological Limitations

This study was not explicitly guided by the following world views. First, it was not positivist in respect to knowledge only gaining respect if it was empirical (Robson, 2002) nor was it explicitly relativist, which would mean that knowledge was based on mainly the human conscious experiences (Creswell, 2007). Equally, it was not explicitly guided by the post positivist where the belief is that the theories, hypotheses, background knowledge and values of the researcher can influence what is observed. Additionally, the research was not explicitly observed using feminist and other emancipatory approaches also known as critical approaches, neither was the research be guided by realism that upholds the rule of experimentation (Robson 2002). Instead, this research was guided from a pragmatic world view which considers the idea that truth is “what works” and therefore both qualitative and quantitative methods are feasible.

Indeed, the delimitation came from taking a pragmatist world view which sought to join the two sides of the constructivist and positivist debates. This study carried out a sequential triangulation approach. The researcher collected both qualitative and quantitative data sequentially and then compared the two databases to determine if there is a convergence, differences or some combination. Some authors refer to this comparison as confirmation, disconfirmation or cross validation (Creswell, 2009; Greene, Caracelli, & Graham, 1989; Morgan, 1998; Steckler, Mcleroy, Goodman, Bird

&McCormick, 1992). This model generally used separate quantitative and qualitative methods as a means to offset the weakness inherent within one method with the strengths of the other (or conversely, the strengths of one add to the strengths of the other) (Creswell 2009).

1.10.3 Contextual Limitations

The researcher conducted a survey of the Jua Kali artisans in Nairobi. He administered questionnaires to Jua Kali artisans who were not conversant with the English language due to illiteracy. However, the researcher delimited this in the data collection tool by carrying out semi structured interviews which allowed in-depth responses and they were carried out in Kiswahili which is considered a lingua Franca to most speakers' irrespective of illiteracy. The other limitation was in ensuring that interviews were administered to media personnel even in their busy schedules. This study ensured that reasonable time schedules were designed to guarantee ease in working with the interviewees.

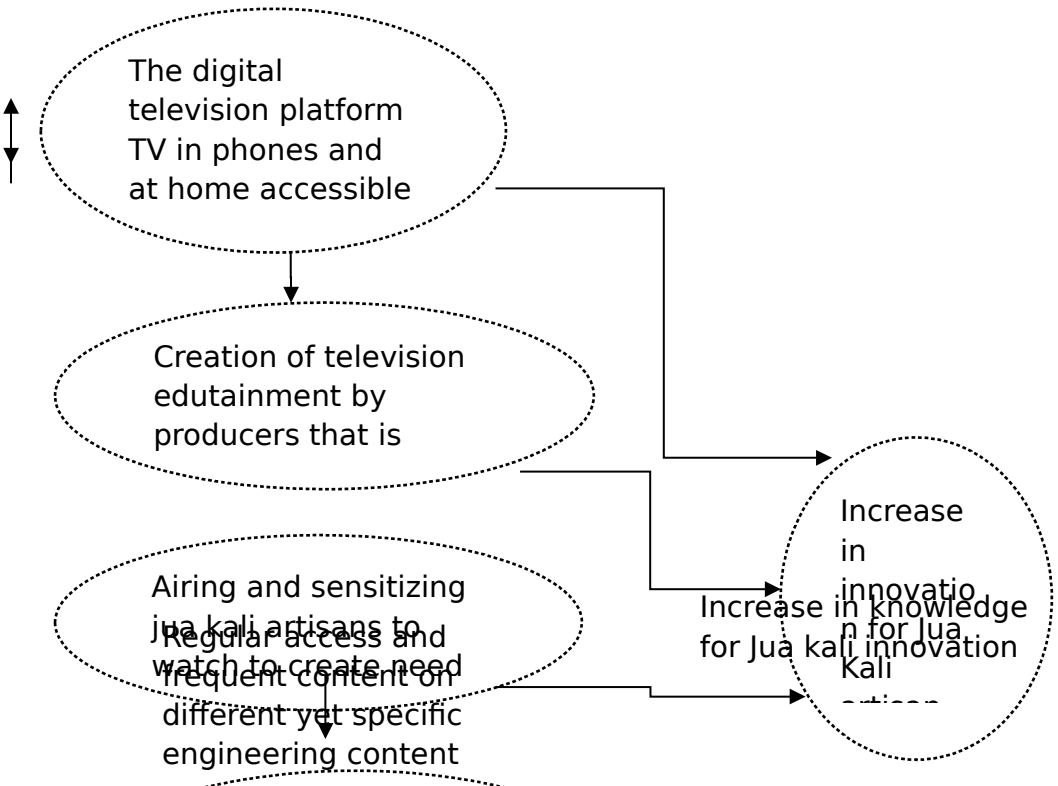
Additionally, the study was only limited to the Kenyan context and to be specific, it was carried out only in one county; Nairobi. This limitation was delimited by conducting a literature review from different parts of the world. Furthermore, Nairobi is cosmopolitan therefore has a workforce representative of all people from the different parts of the country. Hence, this led to a sample that is representative of the population in the country. In a way the sampling techniques made the findings representative of the whole population. This ensured appropriate representation and present valid results. The sample

population results will thus be generalizable to other urban areas not included in this study. As a result other cities are likely to get crucial lessons from the findings drawn from the study.

1.11 Theoretical Framework

Kombo and Tromp (2006) describe a theoretical framework as a collection of interlinked ideas that are based on theories. Researchers use the theoretical framework to show the connection between concepts (Mugenda & Mugenda, 2003). For this study communication theory were used to provide a theoretical framework for evaluating the use of the Kenya digital platforms in nurturing innovation for Nairobi's Jua Kali workers in the field of engineering. The theories are Uses and gratification theory and media dependency theory. The two are reviewed in the next chapter

1.11 Conceptual Framework



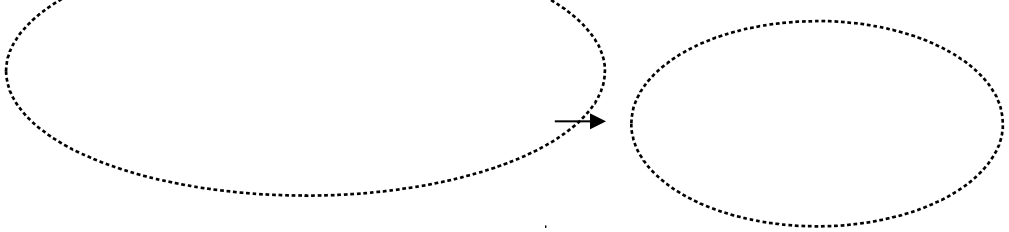


Figure 1.1: Is a conceptual framework on encouraging innovations through the digital television platform. Adapted from the uses and gratifications perspective (Bulmer & Kuter 1974)

The model encourages the use of the digital Kenyan television platform in creating educative, entertaining content for the engineering Jua Kali artisans. It encourages an expansion of the industry to suit specific niches of people with diverse needs. The platform will therefore lead to tailoring content for individual; group needs to hence encourage personalization of content. As Jua Kali workers continue to be exposed to more information about their trades through television, they are likely to feel encouraged to continue relying upon this media platform for their source of knowledge. Once reliance is established, a habit of watching is formed through encouraging the availability and frequency of showing the content which bears engineering knowledge. This aspect of knowledge acquisition is likely to offer a contribution to engineering Jua Kali work on building on innovations.

1.12 Summary

In this chapter the background of the study is provided. The chapter has also focused on contextual and historical use of Television in nurturing innovation. The aim of the study is discussed as an analysis of the use of digital television in nurturing innovation. In this section the statement of the problem, the research objective and research questions are also discussed, as well as the scope, limitations, justification and significance of the study. The next chapter reviews the literature on the use of digital television platform in nurturing innovation among Nairobi's Jua Kali engineering artisans thus placing the present research within the context of related studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains a review of relevant literature on the key concepts underlying the study, with a view to establish the gaps existing in the literature on the use of digital television platform in nurturing innovation in Kenya. It begins by first situating the use of the digital television platform within the field of communication studies. The review covers the use of the digital television platform in general and narrows down to the concept of innovation. Relevant communication theories are also reviewed. Then the next section reviews the literature on relevant previous research and then identifies the gap in the literature the study sought to contribute to. The last section discusses the rationale of the study based on the reviewed literature. To start with, let me briefly discuss the digital television platform in the context of communication studies.

2.2 Situating digital television platforms and innovation in the field of communication studies

Communication Studies is an interdisciplinary field that cuts across different subject areas depending on what one intends to focus on. The discipline encompasses a range of categories, some of which are intertwined (Seiler and Beall, 2002; Richard, 2003; Taylor, 2005; Rayudu, 2011; Rubin, Rubin, Haridakis and Piele (2010). Rubin et al. (2010) and Wambaria (2014) identifies ten major content categories. These categories are:

i. Communication and technology, which concern mediated communication, use of technologies such as computers, cell phones, MP3 players and digital video cameras. Scholars examine their impact and how people use the technologies to enhance, complement or substitute face-to-face communication.

ii. Group communication covers communication in groups of three or more people

iii. Health communication includes communication of all aspects of illness and wellness, communication campaigns, etc.

iv. Instructional communication focuses on the use of technology in the classroom. Student-student, teacher –student and classroom management

v. Intercultural and international communication include how people from different cultures communicate

vi. Interpersonal communication covers people and their interactions. Verbal and nonverbal messages

vii. Language and symbolic codes cover verbal and nonverbal communication codes

viii. Mass communication focuses on communication from a source or organization to many people via mediated channels such as television, radio or newspapers

ix. Organizational communication is concerned with the processing and use of messages between and within organizations

x. Public communication covers communication in public settings.

Referring to the ten disciplines in communication studies listed above, this study may fall within three categories that are communication and technology, instructional communication and mass communication, other scholars for example Jungbong Choi

(2002) refers to digital television platforms as one of the domains of mass communication. The study's aim as stated in Chapter One is to explore the use of digital television platform in nurturing innovation among engineering Jua Kali audiences. The specific focus is on how Jua Kali artisans use digital TV to cultivate innovation, which is one of the categories that fall in communication studies discipline. It is through the use of digital television that Jua Kali artisans will use television for learning purposes which is likely to nature innovation. So with this interrelationship this research falls under three categories, communication and technology, instructional communication and mass communication. To begin with, here is the definition of communication.

2.2.1 Digital Television and innovation as part of Communication

Communication is intertwined with all human life (Little John & Foss, 2008). It shapes personal, professional and social lives and people spend more time communicating than doing anything else (Wood, 2004). Literature review reveals various definitions of the concept of communication. It is necessary therefore to clarify what is meant by communication. According to Rayudu (2011),

> The word communication is derived from the Latin word communis, which means common. In its application, it means a common ground of understanding. It is a process of exchange of facts, ideas, and opinions and as a means that individuals or organizations share meaning and understanding with another p. 11

There are many different definitions of communication. The definition of communication depends on whether one visualizes it as a process, system, interactional, transactional, intentional or unintentional (Seiler and Beall, 2002).

Wood (2004) defines communication as:

> A systemic process in which individuals interact with and through symbols to create and interpret meaning. Communication as a process means it is ongoing and always in motion systematic means it involves a group of interrelated parts that affect one another. Finally, meaning is created in the process of communication (pp. 9-10).

Taylor (2005) explains that communication may be defined as giving, receiving or exchanging information, opinions or ideas by writing, speech or visual means, so that the message communicated is completely understood by the recipients. Seiler and Beall (2002) see communication as a simultaneous sharing and creating meaning through human symbolic action (p. 6). Another definition is by Richard (2003), who explains:

> Communication makes connections. The connections are made between one person, and another, or between one group of people, and another. Sometimes the connection is immediate, and other times delayed. What flows through the connection are ideas, beliefs, opinions and pieces of information that are the material and the content of communication (p. 6).

The above definition by Richards (2003) means that, communication occurs when people make connections. However, being able to speak to someone doesn't mean that we can get across what we want to say. For communication to occur a person has to learn how to use it to the best of her or his ability. In the context of this study, connecting the Jua Kali artisans to the different components offered by the digital Television facilities will not, therefore, imply that the Jua Kali artisans are effectively using them or they understand the content offered by the system. Communication is more meaningful, when programs are offered in simplified language or in languages that the artisans can understand.

This study will seek to find out whether Jua Kali and media producers are using the digital television platform to nurture innovation. It will do so by analyzing the use of digital television in innovation. Although to some extent parts of the definitions given

above may apply, this study will adopt Wood's (2004) definitively. This is because the use of digital television in innovation is a systemic process in which specific objectives are to be achieved. It involves a group of interrelated parts that affect one another, such as the Jua Kali, the media producers, the available market for the contents, availability of content, interest in the content shown and type of digital television terrain in Kenya.

The process of communication through digital television is also a process that is ongoing and is always in motion. The communication process is in stages (Taylor, 2005; Robbins and Judge, 2007). Robbins and Judge (2007), explain the stages as follows:

> The sender initiates a message by encoding a thought. The message is the actual physical product or the content of the sender's encoding. The channel is the medium through which the message travels. It is selected by the sender. The receiver is the object to whom the message is directed. But before the message can be received, the symbols in it must be translated into a form that can be understood by the receiver. This step is the decoding of the message. Noise represents communication barriers that distort the clarity of the message. Examples of possible noise sources include perceptual problems, information overload, semantic differences, or cultural differences. The final link in the communication process is feedback to check on how successful the message has been delivered as intended (pp. 369-370).

All the above elements may influence how Mobile phones, TV and computers are used among engineering Jua Kali artisans. For example, some of the issues referred to as noise or communication barriers such as perception may influence utilization of digital television. These and other issues are discussed later in this thesis. The next section discusses this channel of communication in the context of this study.

2.2.2 Digital Television as a Communication Channel.

Communication channels such as print media or broadcast (electronic) media are mediums through which messages are transmitted to its intended audience. In other

words, the medium the sender chooses to transmit the message is called the communication channel (Wambaria, 2014). Various communication channels can be used to transfer information for learning and educative purposes among Jua Kali artisans such as print, radio, TV, computers and CDs and DVDs some of which are the focus of this study.

The medium of communication the Jua Kali will use for learning and innovation forms an important element in the communication process. Marshall McLuhan coined the phrase; the “medium is the message” (McLuhan, 1964). This meant that the form of the medium embeds itself in the message. It creates a symbiotic relationship by which the medium influences how the message is perceived; creating subtle change over time. It also implies that learning should be provided in a variety of mediums. This means that the type of channel used can determine whether Jua Kali artisans will use it or not depending on the subject content and objectives they intend to achieve. This idea is supported by Taylor (2005) who writes the channel that is chosen to send a message is very important.

> The channel chosen can also influence the message and how it is interpreted by the recipient. Factors to consider in the selection of the channel are the cost, confidentiality, safety and security, influence, urgency, distance, time of day, resources. Use of electronic channels is preferable when speed is, important, time zones differ and when one is physically separated from your audience (p. 9).

The selection and use of communication media by organizations to improve effectiveness has been a point of interest to many scholars (McLuhan1964; Taylor, 2005; D‟Urso and Rains, 2008). The media richness theory by Daft and Lengel (1984), (cited in D‟Urso and Rains 2008), placed communication channels on a richness continuum. According to the theory, face-to-face communication was identified as the richest channel while

telephone second- richest channel. The computer was considered as the leanest channels. A study carried out by Men (2014), confirmed that, transformational leaders most often use information, rich channels, such as face-to-face communication and telephone, to communicate with employees (p. 276).

However, later studies on the channel expansion theory stated that an individual's relevant experience is central and it influences perceptions of a channel's richness (Carlson and Zmud, 1999 (cited in D‟Urso and Rains 2008). This means that the Jua Kalis' relevant experience may influence their perception of channel richness. Consequently, this may determine whether they will use it or not. Again, it is likely that Jua Kali artisans may not have the knowledge of information regarding channel richness. Therefore, with the right content on digital television that suite the Jua Kali artisans, it is possible that they will view the use of this medium to be more useful.

2.2.3 Situating Digital Television in Learning and Innovation

In chapter one, a brief discussion of how digital television can aid in learning and innovation was presented. The concept of learning through digital television falls in the area of communication called technology in communication specifically mass communication.

Today, instructional Communication has developed into an area of inquiry where two distinct areas of study have come up. These areas of study are: communication education that focuses on teaching communication subjects and instructional communication (where this study belongs) that deals with how to use communication regardless of the

academic discipline. However, these two areas overlap (Wambaria, 2014). According to Morreale et al., (2014) communication and instructional communication cut across disciplines and cultures. They state: The increased national focus on communication, education has come at the same time as an increase in international attention. Disciplinary associations are internationalizing and communication associations are forming in the world over.

Studies carried out indicate that employees use a variety of technologies under mass communication in different organizations such as electronic mail, audio and video conferencing. A qualitative study conducted by Miller (2009) on employees' use of various technologies reaffirms that electronic mail, audio and video conferencing, Internet and World Wide Web (WWW), wireless networks and Instant Messaging are widely used (Miller, 2009; D"Urso and Pierce 2009). Additionally, Durso and Pierce (2009) found out that out of 25 different communication technologies, the most commonly used were email at 85% and Internet at 84.7%.

Durso and Pierce (2009) further found out that of the 322 respondents one person had not used any of the 25 communication technologies, whereas another indicated using 22 of the 25 communication technologies. On the level of use, 99 respondents were low communication technology users, 128 were moderate and 93 heavy users. Moreover, the study found a positive relationship between gender and education on the usage of electronic communication media. In terms of gender, more men were heavy and moderate users compared to women, while in terms of education, those with an increased level of education, particularly a bachelor degree or higher, were moderate and heavy

users (D‟Urso and Pierce, 2009). In another study, Men (2014) established that the most commonly used media channel to communicate with employees about new decisions, policies, events and changes was the email.

Digital channels such as video conferencing and internal social media (e.g., Blogs) were the least commonly used. Other studies indicate similar results such that, search and email remain the two major activities s among adult Internet users, at 92%. The Pew Internet Centre (2011) is such a study. It reported that about 6 in 10 online adults engage in search and email activities in a typical day. It can be argued that most research has been done in white collar settings and minimal research has been conducted on the use of different communication technologies in the blue collar environments. Therefore, this study will be suitable in filling the gap in the area of the use of digital television platform in nurturing innovation.

According to Bouwman, Hoof, Lidwien and Dijk (2005) the use of any ICT application begins when the members of the organization start applying it in their daily operations. They argue that the adoption of an innovation is primarily an individual affair. It is upon individual Jua Kali artisans to adopt technological innovations that can aid in their work. However, Rogers (2003) position is that the adoption process is a collective responsibility. This means that for people in an organization to embrace new technologies there must be support from the management or from government. It means then, the Kenyan government or different bodies such as those of media producers would abide by

creating infrastructure that assists in supporting the Jua Kali artisans in their daily activities.

Most of the studies carried out on the use of digital television focus on the developed countries and a few Asian countries and not developing countries like Kenya. In addition, most studies concentrate on the use of computers at the expense of the other forms of media such as digital television in informal organizations. Consequently, this research sought to find out from individual engineering Jua Kali artisans, whether they utilized the digital television platform and if it offered them innovative ideas in their work of artisanship. It also focused on harnessing possible solutions from media practitioners who understand the dynamics of providing content that can be useful to Jua Kali artisans.

2.3 Reviews of Relevant Theories on the Use of Digital Television Platforms in Nurturing Innovation

This study is guided by Uses, gratifications and dependency theories which arise from a line of work that focuses on the interdependent relationships among the media system, the larger social system and media audiences. Together, these theories predict that audiences rely on media to gratify specific needs and in the process, develop certain dependencies on the media (Foss & Littlejohn, 2009).

Actually, the more an individual depends on a specific medium to fulfill needs, the more important that the media will become to that person. This then can lead to different

patterns of media exposure and use which will bring more cognition, affective and behavioral effects of media use.

2.3.0 Uses and Gratifications

Uses gratifications and dependency theories arise from a line of work that focuses on interdependent relationships among the media system, the larger social system and media audiences. Audiences rely on media to gratify specific needs and in the process, develop certain dependencies on the media. The more an individual depends on specific medium to fulfill needs, the more important that medium will become to that person. This can, in turn, lead to different patterns of media exposure and use. Ultimately, this can lead to cognitive, affective and behavioral effects of media use (Foss & Littlejohn, 2009)

This process of relying on media can be examined from either a macro or a micro-level approach. A micro-level approach looks specifically at the role of media in the life of an individual, examining how people use and depend on media to meet specific goals or needs. From a micro perspective, a person will become more dependent on the specific media that will satisfy just a few needs. These increased dependencies, lead to an increased influence of the media in our lives. For example, a technologically savvy and media literate individual knows that he or she can find information from the newspaper, radio, the internet, television or a variety of other sources. However, someone who might not be technically savvy might see the only option as turning on the television and the evening news. Therefore, this person becomes heavily dependent on television for news and information gathering (Foss & Littlejohn, 2009).

A macro level approach to dependency involves examining the interdependence between audiences, the media system and the larger social system. Foss and Littlejohn (2009) identify that the media system, social institutions and the audiences exist in a state of mutual interdependence. Each has goals they must accomplish and resource to offer the other. For example, the media offer information dissemination for the larger social system, entertainment and information for the mass audience. However, these effects occur because the media operate in a give and take relationship with the larger social system and the media audiences.

Given the increasing complexity of the work in this era of globalization, audiences need the media to help them make sense and to understand the world around them (Foss & Littlejohn, 2009). Elihu Katz, Jay Blumler and Michael Gurevitch (1970) explained that uses and gratification theory turned attention away from media sources and message effects to audience uses of media content. Building on this original idea, Philip Palmgewn used the work of Karl Rosengren and others to explain more clearly what goes on in this process. He borrowed martin Fishbein's expectancy value theory of beliefs and attitudes as the basis for this expanded explanation.

The expectancy-value formula determines the gratifications that will be sought by a media user. This is done by summing his or her beliefs about what media can provide weighted by one's evaluations of those beliefs. For example, a user believes that car magazine has many great photos of cars (belief) and good photos are enjoyable (evaluation) that such magazines give useful information about best buys (belief) and

knowing what cars to buy is pertinent (evaluation) that users will probably seek to gratify needs and goals related to cars by consuming these magazines.

Other variables identified by Palm Green that enter into one's media consumption behavior that influence gratification are culture, social institutions, media opportunities, circumstances, personal traits, needs, beliefs and values. In turn, one's beliefs about what media can provide are influenced by the gratifications one experiences by using those media (Foss & Littlejohn, 2009). Framed by Elihu Katz, Jay Blumler and Michael Gurevitch in the 1970s, uses and gratifications.

Theory turned attention away from media sources and message effects to audience uses of media content. Building on this original idea, Philip Palmgreen used the work of Karl Rosengren and others to explain more clearly what goes on in this process. He borrowed Martin Fishbein's expectancy value theory of beliefs and attitudes as the basis for this expanded explanation, which he first published in 1984 (Foss & Littlejohn 2009).

The expectancy-value formula determines the gratifications that will be sought by a media user by summing his or her beliefs about what media can provide weighted by one's evaluations of those beliefs (Foss & Littlejohn 2009). Therefore, if Jua Kali artisans feel that his/her needs will be fulfilled by a particular medium (they believe) he /she is more likely to use the media more because of the gratification it gives and because it continuously goes on to meet the expectations of the beliefs they have. Palmgreen, however, did identify other variables that enter into one's media consumption behavior.

In its most complex form, the theory predicts that media-consumption gratifications are influenced by culture, social institutions, media opportunities, circumstances, personal traits, needs, beliefs and values. In turn, one's beliefs about what media can provide are influenced by the gratifications one experiences by using those media (Foss & Littlejohn, 2009).

2.3.1 Dependency Theory

By itself, uses and gratifications theory grants limited effects to the media, suggesting instead that individuals have much control over what they consume. However, in the process of using media, consumers may develop certain dependencies that allow media greater power than the uses and gratifications theory originally imagined. Such dependencies lead to cognitive, affective and behavioral outcomes. Sandra Ball-Rokeach and Melvin DeFleur originally recognized this in the 1970s, about the same time that uses and gratifications came to the forefront taking a broader, system view. Ball-Rokeach and DeFleur showed that audiences, media and the larger social system work together (Foss & Littlejohn, (2009).

There are a number of things that can increase or decrease depending on a particular medium, including the individual's needs and motives, social conditions outside the individual's control and life attributes. For example, individuals who have a high need to be oriented to what is happening tend to watch more television and expose themselves to more media. Therefore, there will be greater dependencies on television for these people than for those with a low need for orientation. Additionally, reliance on media is greater

in times of social instability. This can create greater dependencies, especially for those who see television as their only outlet for news. And finally, the circumstances in an individual's life, such as health, mobility, life satisfaction, income, loneliness and education can lead to different patterns of media use and differences in dependencies. Functional alternatives are also important in dependency theory (Foss & Littlejohn, 2009).

A functional alternative is a medium that can essentially act as an alternative for another form of media. For example, if an individual wants to find out what shows are playing at the local movie theater, he or she might look in the newspaper. Another alternative will be the Internet or call the theater itself. Therefore, the Internet and the telephone become functional alternatives for the newspaper. The number of functional alternatives an individual has will decrease dependence on any one particular medium. Individuals become more dependent on available media if their access to media alternatives is limited. An educated person with a computer and Internet access will have a variety of functional alternatives other than television for news gathering and entertainment (Foss & Littlejohn, 2009).

However, an illiterate person without Internet access might only have the use of a television to satisfy these needs. This will lead to greater dependence on that medium for this person. Media researchers have become interested in dependency theory because dependencies lead to different patterns of exposure. An individual who has exposed himself or herself to news from a variety of media is likely to be better informed, more

knowledgeable and have a better, more in-depth understanding of world events than someone who relies solely on television news for information gathering. Additionally, a person with a high dependency on television for entertainment and escape will watch much more television than those with many other functional alternatives. Those with greater dependencies will display more of the harmful effects associated with increased exposure to television in general (Foss & Littlejohn, 2009).

2.4 Understanding Jua Kali Artisans

In Kenya, the term “Jua Kali” was coined during the 1980s to refer to the informal sector. The informal sector comprised of artisans such as car workers, metal workers, vegetable sellers, street venders, masonries and carpenters who are working under the hot sun because of a lack of premises. Gradually, the informal sector was understood to mean anybody in self-employment and in 1988 the government set up the Jua Kali Development program in Kenya to cater for people who could not be absorbed into formal employment (King, 1997).

In Amenya (2007), the “Jua Kali sector” (Kenyan informal sector) operates on a small scale, locally and at a subsistence level. It is made up of home- based enterprises which afford few employees who operate for a shorter period and their work site has poor access to water and electricity. Products made are mostly sold outside the establishments where the entrepreneurs work or live.

Another key characteristic of the sector is that it is large and dynamic. Ouma (2010) avows that the informal economy can hardly be ignored in Kenya as 61 percent of the 14 million labor force work is non- agricultural employment while 35 percent of urban and 59 percent of rural households respectively are involved in small businesses. Despite the lack of proper definition, the urban informal sector accounts for a big part of urban employment.

Chalhoub (2012) explains that the activities of the Kenyan informal sector can be characterized by ease entry, the use of indigenous resources, family owned, small scale operation, skill acquisition outside the formal sector and the unregulated competitive markets. No formal education is required to find employment in the informal sector. However, the problem has always been their limited ability to innovate due to knowledge gaps.

Knowledge acquisition being a major prerequisite in innovation can be facilitated by the use of ICTs. The government has gone ahead to open up data villages to empower the public with knowledge that encourages innovation and development. There are still structural problems blocking this process of becoming a success. Manyozo (2006) says that when community groups are more closely involved in communication, it helps them take ownership of the initiatives of development rather than seeing themselves as beneficiaries of development. In addition, communication tools such as videos, newspapers, posters, radio and the internet would aid in the process of community development.

The mass media in particular has led to an increase in the knowledge level and an increased output in the education system in recent decades. It seems the main reason for the popularity of television lies in its simplicity to the audiences. Since people naturally choose the easiest way to learn, such simplicity can be found in television education programs (Nazari, 2009). It is in airing topical educational programs that people can find access to audiovisual materials that give information in the fields of engineering, agriculture, nutrition, medicine and science from the digital television platform.

From the foregoing, it would appear that content broadcast through television can be of great use in filling up the gaps of information useful to Jua Kali workers (blue collar workers). It can also be stated that the use of television can be seen as a form of diversion, emotional release, a means of self-exploration and a learning tool (Corrie-Metcalf, 2005). It is against this background that the researcher seeks to find out the role played by the Kenya digital television platform in nurturing innovation.

2.5 Understanding Digital Television

In this section, the researcher reviewed literature on the concept of digital television. From a technical standpoint, digital television is nothing more than a new broadcast technology that transmits and receives radio waves in digital codes. Yet the prefix digital vs analogue offers profound instability to the conventional identity of TV by ushering in more channels, better quality, increased interactivity and storage/retrieval of data and information (Choi 2002). This means that anybody, including local media producers who might be amateur video artisans can produce content that is of better quality and this content can be shared in ways that foster interactivity and again the digital system encourages retrieval of data and information that could nurture innovation.

Beyond the comprehensive restructuring of broadcast television (programming, services, revenue sources, ownership structures and outside partnerships), the most significant social implication is that it paves way for the full integration of television with telecommunication technologies such as telephone, cable computer and satellite (Choi

2002). The issue of digital compatibility between broadcasting and telecommunications, coupled with the multifunctional versatility intrinsic to digital TV, presents a future that is highly complex and uncertain in terms of social uses and practices set around digital TV. It is this initial stage of inserting technologies into social circuits that gives rise to a high intensity “war of embedding”. By the war of embedding, (Choi 2002) means different intentions, challenges and experiments sought by various social constituencies to pin down the meaning and uses of a new technology (Choi 2002). This implies that Jua Kali artisans can come up with their own meaning of the digital television concept. That perhaps digital television is seen as a medium that can encourage the viewership of content that encourages innovative ideas.

In this regard, this study is about understanding the meanings and uses of the digital television platform among Jua Kali and media producers who are active users and how it could be useful for both of these groups. The term digital refers to a form of encoding in which the waveform of a signal is represented as a series of digits, which are then encoded as a sequence of binary “0s” and “1s,” or as “ONs” and “OFFs.” The term “digital TV” has many possible meanings. It can mean HDTV (High Definition Television) but HDTV involves many factors, such as an increase in the number of scanlines (to about 1,000), a widescreen display, non-interlaced scanning with less flicker, and compression of the digital signal to conserve bandwidth when transmitted (Gerbarg, 2009).

Digital TV can also mean multicasting in which a number of predictable (but digitized) TV signals are sent in the space of a single channel. The multiple signals (usually about

four) can be time-displaced versions of the same program, multiple different programs or different camera shots of the same program (Gerbarg, 2009). This is in the case of Kenya's digital set box platform. The world of television has changed so much since the late 1980s, when HDTV was hatched. Today, is a time when most people in the United States obtain their television over cable, when satellite dishes are appearing on the roofs of homes around the country, when almost everyone has a DVD player, smart TVs along with high-speed Internet access: this is a new world of television. There will always be a few consumers for whom over-the-air, free broadcasting is their only source of television (Gerbarg, 2009).

The Internet can be used to access digital TV – what is sometimes called Internet TV. The term digital TV has also been used to mean some form of interactive television. The many different meanings of digital TV can be confusing to consumers. The definitions are also different for different segments of the television industry, depending on the advocacy of the segment at the present time. This only compounds the confusion as we wait for the dust to settle. Whatever digital TV might be, consumers watch television because of program content –not picture quality (Gerbarg, 2009). In this case, therefore, audiences will watch television, because it offers content that they find necessary to watch and interact with.

Digital television services not only provide promise for interactive services, but also for long tail business models in terms of tailor made content. As the share of culture in total linear television programming is diminishing owing to the supremacy of audience rating

concerns, digital television services could act as an alternative gateway to deliver culture to a wide audience (Evens MarezHauttekeete & Biltereyst, 2010). Digital television is likely to be of use because it will create a tailor made content and provide alternative means of viewership.

Quail (2012) proposes those portable screens, mobile viewing and on-demand; in-control screen cultures have created a number of challenges and opportunities for the television industry and audiences. Some debaters have gone so far as to proclaim that new viewing platforms signal the death of TV, as public discourse is underlined by the assumption that televisions' digital migration allows viewers ultimate control, rendering traditional television irrelevant or redundant.

A recent article in *The Guardian UK* headlines reads, "TV is dead. Long Live the Internet" (2011), making futurist claims seem a reality. In a similarly titled article, *wired* magazine states, "The TV is dead. Long Live the TV" (Borland, 2007). Further, in the opening paragraph, a CBS producer, Kim Moses, states, "traditional TV won't be here in seven to 10 years… It's changing so fast that I don't know if it's even going to be that long" (para. 5). These highly visible, widely read popular sources help create the public notion that TV is quite obviously being pushed aside by online environments.

This discourse is sometimes replayed by television studies done by scholars like Kompare (2010) who suggest that "television exists primarily as a *metaphor*" (p. 80). Here, academics and journalists, as well as product developers and marketers, have been

probing the relationships between and the power involved in technological change and changes in film and television viewing practices. Undeniably, and predictably, new technologies impact industry and audiences, (re) opening a wide range of debates about costs, control, desire, culture, and strategic directions. Long-standing debates in media studies regarding both new technologies and impact on previous industries (in, Bettig & Hall, 2003) have been held.

Still, most crucial debates regarding tensions between the active audience (via the critical cultural studies tradition), technological determinism (of the Toronto School and beyond), uses and gratifications and diffusion of innovation (in, Yang & Chan-Olmstead, 2009) as well as industrial/institutional power have been advanced by scholars like Dallas Smythes (1977) on the notion of the audience commodity resurface (see, Meehan 2005, 2007). Indeed, there are different forms of digital television which depend on the different standards of television. To begin with an understanding of the standards of television will be outlined.

2.6 Studies on Television use in Nurturing Innovation in Selected Parts of the world

The researcher gained some insights on the use of digital platforms in particular areas of Africa and the efforts already in place to enhance the use of media in gaining knowledge. There is no doubt that information and communication technologies have influenced educational circumstances more than any other category (Asnafi, 2008).

Nazari (2009) conducted a study on the impact of television on rural development. The purpose was to evaluate the role of television as an educational tool to the enhancement of farmers' knowledge. Using 161 farmers as randomized subjects, a pretest posttest design was conducted among them, as they worked and resided in the province of Kohgiluyeh van Buyer Ahmad, Iran.

After determining educational goals of the study, a questionnaire was prepared as a pre and post-test. Based on educational contents, one television program was produced on fighting, agricultural pests and the correct use of pesticides. Participants' responded to the pretest before the program was aired and a posttest after the program was aired. The findings of the study showed a significant knowledge enhancement, which proved the effective role of television to improve awareness of practices among farmers (Nazari, 2009).

Corrie-Metcalf (2005) also conducted a study on the appeal of reality television from the uses and gratifications perspective. Using a qualitative method of in-depth interviews on 20 people, it was found out that television is a form of diversion, emotional release, a means of self-exploration and a learning tool. Moreover, reality television could be incorporated into the viewer's routines because it demanded little concentration. To the best of knowledge inquired so far, there are no investigations done on the use of the digital television platform used to nurture innovation among Jua Kali artisans, yet it is likely that the two industries of television and blue collar artisans might have significant

relationships. In light of this the researcher sought to establish how the Kenyan digital television platform is used in nature innovation among Jua Kali artisans.

Many researchers and educators have tested the knowledge levels to understand content by farmers and other clients toward the delivery of educational information (Gamon et al., 1992; Caldwell and Richardson, 1995; Laughlin and Schmidt, 1995; Trede and Whitaker, 1998; Suvedi et al., 1999; Akar-Vural, 2010; Fayola, 2010). The outcomes of their studies indicate that different media and methods are used by extension educators to communicate new and emerging technologies to farmers.

Transferring to new findings and technologies to rural farmers remains a promising strategy for increasing agricultural productivity. The new idea must reach farmers' farms and homes through effective mass media channels, so that they can adopt new technologies and put them into use (Ekoja, 2003). Using the mass media has led to an increase in the knowledge level and the output of information system in recent decades. It seems the main reason for the popularity of television lies in its simplicity for the audiences. Since people choose the easiest way to learn the simplest way can be found in television educational programs (Buren, 2000).

Aroyoko, (2003) states that the information sources in different topics of agriculture for the farmers are: radio and television, the propagation publication, daily from newspapers, agriculture exhibitions, practical education and consultation services. According to Jenkins’ research (2003) in Northern California, newsletters are the most important information source in the agricultural sector. Among the media, utilizing scientific

conferences, computer and other new media are the least preferred as few farmers use them.

Arokoyo (2003) also showed that video, radio and television are the major sources of information for the farmers in 932 Afr. J. Agric. Res. Nigeria. That print media also have a specific situation in transferring agricultural information as well. Among the mass media, regarding informal education, radio and television have a specific situation. Due to the vast use, the media are among the best educational and cultural instruments. The success of agricultural development programs in developing countries largely depends on the nature and extent of use of mass media in mobilization of people for development.

The planners in developing countries realize that the development of agriculture could be hastened by the effective use of mass media (Salleh, 2010). Radio and television has been acclaimed to be the most effective media for diffusing the scientific knowledge to the masses. In a country like Iran, where literacy levels in rural areas are low, the choice of communication media is of vital importance. In this regard, the television and radio are significant, as they transfer modern agricultural technology to literate and illiterate farmers alike, even in the interior areas, within a short time (Nazari & Hasbullah, 2008).

Based on their educational requirements, different countries can take advantage of radio and television in terms of informal education. On the other hand, the lack of specific research in this field, as well as the obligation and commitment of Iran to the World Session of Information Society (WSIS, 2005), which aims at applying information and

communication technology in all parts and areas including villages and agricultural affairs, makes conducting this study inevitable.

Television is acknowledged as the most important medium for communicating with the rural populations of developing countries (FAO, 2001). The purpose the study was to determine the effect of television on the enhancement of farmers' agricultural knowledge and it attempted to investigate the impact of television on promoting farmers' knowledge; so that in future programming, a more appropriate situation for agriculture development is specified to public media.

Gunter, Nicholas, Huntington and Williams (2003) also conducted a study on digital interactive television in the UK. They studied the health platform of the future. They present a research that was designed to explore the early take up of pilot digital interactive television (DiTV) health information service (Living Health) by cable television subscribers in Birmingham, UK. Log data indicated real time viewing behavior of subscribers to the cable network on which the digital health service was carried.

A survey of users delivered a return sample of 723 subscribers. Log data indicated an initial surge in use that subsided and stabilized at a lower level. Over one third of cable network subscribers visited the digital health TV site at least once during a 20 week pilot period. The most popularly visited pages concerned sex related information (Gunter, Nicholas, Huntington and Williams, 2003). In the user survey, just less than one in four respondents had reportedly used the DiTV (digital interactive television service). The

user profile was oriented towards older men and young adult women. Over eight in ten users found the service easy to use and understand. Over half of the users consulted the service in connection with a GP visit. Some evidence emerged that use of DiTV might substitute for consulting a doctor among some users (Gunter, Nicholas, Huntington and Williams, 2003).

In the UK, Gisela Stuart, the (then) Parliamentary member under the Secretary of State for Health, announced in June 2000 that the department of health would fund a series of pilot projects exploring possible health applications of digital interactive television (DiTV). The aim of these projects was to provide patients with easy and fast access at home to health advice and information (Gunter, Nicholas, Huntington and Williams, 2003).

This launch of NHS Digital, a development under the NHS Direct initiative, represented a further stage in the Government's commitment to provide faster and more easily accessible information about health, illness and the NHS, so that people are better able to care for themselves and their families. While the internet has also far been the primary conduit for the provision of "online" health information, the need to reach demographic groups in society who have not yet signed up to cyber space, another older technology has entered the frame. Television is the most ubiquitous mass medium and has evolved technologically in recent years to the point where it may become an alternative interactive medium to the PC based internet.

The 1997 white paper, the *New NHS (Department* of Health, 1997) identified the internet and digital television as key media through which public access to the NHS could be improved. It was envisaged that new interactive communication media could empower patients to take more care of their own health as well as improving efficiency of health provision in the UK. In this exciting new world of modern interactive communication technology, digital television has been regarded as having greater potential than the internet because television is already a well-established medium. Nearly every household in the UK has at least one TV set and despite the relative success of supermarket online shopping, more people feel comfortable using TV than the internet. Fewer people are likely to be excluded from a service that is available via television than from one that can only be accessed via a computer. More people may be persuaded to engage with interactive information services with the more familiar TV remote control than with a PC mouse (Gunter, Nicholas, Huntington and Williams, 2003).

The department of health contracted four consortia to experiment with a variety of interactive services through which registered users can access large banks of health information via their TV sets. Users were able to navigate this online health encyclopedia using a standard digital TV remote control of the kind typically issued to new digital satellite, cable or broadband subscribers. In addition to largely text based information services, the pilots included a number of transactional services. These allowed view users to make appointments with their doctor or with specialized health services, volunteer their own services to community health support groups maintain online medical records or obtain a live video link to an online NHS nurse, who appears on their TV screen, while

talking to them over the telephone. Conclusively, if the digital television media are used in different areas such health medicine, entertainment, education and farming it will yield great benefits. That is why this study seeks ways within the same parameters to look at how it can be used for engineering.

A study was also conducted by Aphunu and Atoma (2011) on the extent of use of ICTs by fish farmers in the Isoko Agricultural Zone of Delta State, Nigeria. The zone comprises two Local government areas (LGA) namely, Isoko South and Isoko North and with a population of over 294,991 people (National Population Commission, 2006). The dependent variable in the study was “Extent of ICT use” by fish farmers. Extent of use was defined as the actual activity where ICT was used by the respondents.

To determine the extent of ICT usage, twenty one activity areas (believed to enhance and boost fish production) were identified and respondents were asked to indicate which of the activities they had used. For any activity where a respondent used ICT, a score of one was given.

The total score for activity area where ICT was employed was expressed as a percentage of the total number of respondents involved. The majority (95%) of the respondents had access to radio and telephone (fixed and GSM) while 93.3% of them had access to television. Respondents’ access to internet, computer based communication devices, etc. was low. This result tallies with the findings of Owen (2008) in his USAID ICT4D program report where he asserted that over 50% of the world population have access to, or uses a mobile phone and only 5% of the world’s population have access to or uses broadband Internet.

The result implies that conventional ICTs (radio, television and telephones) still remain the most accessible ICTs in the study area. This showed that the telephone (mean=2. 75), television (mean=2. 70) and radio (mean=2. 63) were the most frequently used ICT facilities among fish farmers. The results agree with the findings of Arokoyo, (2003) that radio and television remained the major ICTs used for extension service delivery especially in the rural areas. Similarly, Adejo and Haruna, (2009) stated that these classes of ICTs facilities are ideal for rural areas, cheaper to set up, easy to use and filling vital needs.

The findings of this study show that fish farmers' access to ICTs in the study area is still mostly conventional, since majority of them depend on the media (radio and television) and the telephones (GSM) for their agricultural information needs, contacts and inquiries, report preparation and information search. However, lack of enabling government policies on ICTs, relative low level of fish production, maintenance problems and rural poverty pose serious constraints to ICTs use by fish farmers. It is being recommended that a positive policy change by government towards promoting ICTs education and the provision of infrastructures to consolidate. Farmers' training is done, to enhance concerted use of ICTs facilities by fish farmers in their profession. Computer education should be made available to the rural farmers, with emphasis on extension organization. This will help build the capacity of fish farmers and extension officers in the use of ICTs in the study.

Conclusively, Africa is still lagging behind in ICT and ICT use in Africa. A sober conversation about how far we are will ensure that this study builds solutions to consider from a realistic point of view what different communities use or find easier to access. Conclusively, this student chooses to admit that African populations have already started to see the need to use various technologies to build innovation. The idea will be to seek ways of sensitization on media usage for innovation among Jua Kali artisans.

2.7 Perspectives on digital television use among public service broadcasters in selected parts of in the world.

In the digital and online environment the public service ethos has evolved and expanded, with the 'holy trinity' of Public service broadcast goals devised by the BBC's first Director General Lord Reith – 'to inform, educate and entertain' – complemented with the addition of 'connect' (Born, 2004: 486).

Digital media online potentially serves two broad purposes for PSBs: extending the scope for production through both supplementary and dedicated online content and offering new kinds of relationships with the audience. Contributing to a 'digital commons' (Murdock, 2004) the always-on interface of PSBs' portal websites offer junctions where diverse audiences and/or user groups are exposed to a wide range of ideas, services and communities. Comprehensive public portals or junction sites such as these, facilitate the servicing of specific minority audience needs while also cross-promoting general public interest content, ameliorating fragmentation, a key dilemma for the postmodern public sphere.

Having interrogated the possibilities of the interactive mode as a new audience interface, Fiona Martin of ABC online observed that in a networked interactive environment, through both selective response and discursive interaction, users can render themselves visible and to some extent less mysterious, to the institution and to each other. ABC online provides broadcasters greater insight into the lived and imagined worlds of its listeners and viewers and the potential to engage with them as user/citizens rather than just audiences. (2002: 48).

Anticipating marketing advantages, Paul Vincent, then Manager of SBS Online, envisaged the hybrid-funded, multicultural broadcaster moving into ‘an era of the broadband piloting of programs and program concepts’, facilitating the targeting of particular audience demographics. To Vincent, user-generated content tells us a lot about what the audience is interested in, because they will create the kind of content that they are interested in. So the talent, the direction the program takes, is all going to be researched and developed online, which is totally the bottom-up version of audience feedback. Once we have upgraded all our video, broadband video capability, it’s only a small step then to piloting programs in a sort of closed user-groups online. Once you get to know your audience and their preferences deeply enough, you can choose a large focus group; statistically balanced, amongst your online membership and you can pilot things much more carefully than you can with the very expensive tools – that of national focus group discussions – that are around at the moment. (Interview with the Author, 2006).

In the UK, The BBC's long-standing media access project, *Video Nation*, offers an example of how the interactive mode now better serves diverse audiences. Building on the ideas of the Mass Observation project of the 1930s, *Video Nation* began as a television access series in 1993 with 10,000 shorts made and 1300 screened in its first decade. As a site for public conversation where voices from society's margins can be heard, *Video Nation*, now a hybrid TV/internet project, offers on-demand access to both participants and user/viewers through the always-on availability of the internet (Debrett, 2009).

Complementing and extending this access, the occasional screening of participants' stories on television, in the form of short series or thematic compilations serves to keep mainstream viewers aware of these minority voices (BBC, 2007b). Also previously mentioned, *Lost Generation* is another hybrid TV/internet project initiated by Channel 4 in collaboration with the Imperial War Museum signals, a different dimension to the concept of the digital commons. Inviting Britons to contribute the stories of ancestors killed in the First World War, through their letters and memorabilia, the project offers a site in which recent history can be brought to life in a personalized form. Offering guides to genealogy, tracing commonwealth ancestors and using war records, *Lost Generation* assists living relatives to fill in the missing gaps in the lives of their ancestors. The site simultaneously alerts the public at large to the role of public institutions, such as the Imperial War Museum, in documenting and archiving the nations' past (Debrett, 2009).

Public broadcasters' management of projects such as *Lost Generation* and *Video Nation* that involve user-generated content, signals a shift from professionally produced programming to content that is primarily characterized by its interactivity and diverse authorship. Another example of an online innovation serving diversity is SBS's *World Tales*, a multicultural and multi-platform project that invited young animators to adapt traditional folktales from around the world, as recounted by SBS Radio listeners. Viewable online in both English and the language of origin, the animated folktales, which were 5–6 minutes in duration, was also used as TV interstitials (Georgie McClean, interview with the author, 2006).

As professional communicators, public broadcasters can play a mediating role, something the ABC's Head of Television, Kim Dalton, sees as central to their new functions in the digital era, bringing cohesiveness to the eclectic mix of online content through the application of PSB values:

> I think again user-generated content and the connecting potential that this media has, and the potential for the ABC to see part of what it does as actually building communities and engaging with audiences, rather than just delivering content and allowing audiences to engage amongst themselves, to facilitate that engagement. At the same time you have to come back to the fundamentals that, in my view underpin our editorial policy framework and the actual values of the ABC as a public broadcaster, and you have to apply those values and apply those editorial polices (interview with the author, 2007).

Such values are also arguably evident in the huge amounts of background material PSB websites carry for television and radio programming, canvassing a wide range of social issues in a manner quite different from the distinctly promotional flavor of the websites of commercial television, where third party tie-ins predominate. Making program

transcripts available online, for example, provides viewers with a means of verifying what was broadcast, validating public trust, while also encouraging user feedback and participation.

Noting the volume and status of background content now online, David Liroff, Chief Technology Officer at WGBH Educational, quotes the executive producer of the weekly public affairs documentary series, *Frontline*, who described the broadcast program as 'the executive summary of material that the producer had assembled' for the program (interview with the author, 2006).

Despite the perennial struggle for funding – government appropriations have regularly been well below 20 percent (PBS, 2007) –American public television is an institution with ready access to some exceptional expertise, particularly at WGBH in Boston, the system's biggest production center, which can draw on nearby Harvard and MIT. Working in the field of educational production, Howard Cutler, Executive Producer with WGBH Interactive, regards the internet as the primary platform for educational content on the basis of the depth of interactivity compared to digital television. It's very important for the person to be able to pause, take a different route, comeback and not lose the continuity of the experience. So that first dimension was time.

Fortuitously, a much cheaper production platform, the internet is also offering American public television new opportunities to innovate and expand in the delivery of educational content and locally centered programming, the two distinguishing strengths of America's public television system (Richard Winefield, interview with the author, 2006). However, despite cross-platform delivery, continued dependence on corporate sponsorship is likely

to continue to frustrate those wanting a more provocative news and current affairs service of public television.

Conclusively, digital television platforms can nurture innovation by offering content on demand by audiences. They can create interactivity among the audiences and also among the media producers. The digital television platforms also bring an audience conscious culture in producing tailor made content for the audiences. This encourages the idea of finding a system that can be adopted by Kenya's local public service broadcasters or finding a system that can be adopted by the producers who are part of the digital television platform.

2.8 Television Viewing and Electronic Media Audience Motivation and Differences in the world.

Various scholars have looked into why audiences are motivated to view television. It would be crucial to understand what would motivate audiences such as Jua Kali artisans to view television and perhaps what would interest them Research that moved beyond the mere classification of motives for watching television to identifying complex instrumental and ritualistic viewing orientations required a clear conceptualization and operationalization of motivation. Rubin was at the forefront of this methodological development. A. M. Rubin's (1983) Television Viewing Motives Scale was a major advancement for audience motivation research. The scale's development was spurred by Greenberg's (1974, 1975) studies, which identified various reasons why British children watched television (habit, learning, arousal, companionship, relaxation, to forget and to pass the time).

In the United States, A. M. Rubin (1977, 1979) replicated Greenberg's findings while refining and adapting the scale. Versions of Rubin's instrument have been used to measure viewer motivation of adolescents, college students and adults (Finn, 1992; Finn & Gorr, 1988). Some of the effects explored by Rubin and his colleagues include political socialization (A. M. Rubin, 1978), cultivation effects (Kim & Rubin, 1997), medium satisfaction (Perse & Rubin, 1988), utility (Papacharissi &Rubin, 2000; Rubin & Bantz, 1987), chronic loneliness (Perse & Rubin, 1990), parasocial interaction (Rubin, Perse, & Powell, 1985), popular music preferences (Rubin et al., 2001), third-person effects and fear of terrorism (Rubin, Haridakis, Hullman, et al., 2003). Specifically, attitudes such as news affinity, perceived news realism and informational viewing motivations predicted para social interaction with newscasters (Rubin et al., 1985) and exciting entertainment, motivation predicted parasocial interaction with soap opera characters (Kim & Rubin, 1997). Cultivation effects were related to instrumental soap opera viewing (Perse, 1986) and third-person perception bias (Haridakis& Rubin, 2005) and were enhanced by facilitating activity such as selective perception and involvement (Kim & Rubin, 1997). These could amount to various reasons Jua Kali artisans would be motivated to watch television. It is likely that Jua Kali artisans, watch tv due to chronic loneliness…. And the most important reason linked to this study is informational viewing motivations. It is also likely that Jua Kali artisans are Watching for exciting entertainment (Kim & Rubin, 1997; Perse& Rubin, 1988) and escapist relaxation (Perse & Rubin, 1988) predicted satisfaction with soap operas. Watching the news to pass the time was related to chronic loneliness (Perse& Rubin, 1990). Watching violent television programs for

entertainment reasons predicted viewer aggression, whereas watching such programming for purposes of social interaction was a negative predictor (e.g., Haridakis, 2002; Haridakis& Rubin, 2003).

2.9 Creating Quality and Bring in Diversity and Innovation through Digital Television

The researcher sought to understand how diversity can be catered for by offering specific content that is tailor made for the audience's needs. Debret (2009), has analyzed that the implementation of quality and bringing in diversity and innovation is enormously advantaged by the intrinsic traits of digital media which are: it is interactive, can be personalized, searchable, shareable, mobile and available on-demand this is evident in the growing popularity of UGC and social networking. This means that Jua Kali artisans are more likely to find content that will create interactivity. Content that can create some form of interaction between the producers of the content of the show or the broadcasters and the viewers who are Jua Kali artisans. Again, the content can be seen as searchable, sharable and available everywhere, regardless of place because of mobile internet content that is easily accessible. The concept will allow Jua Kali artisans to access on demand content. This is the content that can be accessed at any time as one wishes. It therefore gives a chance to access any form of innovation content.

Debret (2009) gives various examples of how mainstream television broadcasters can offer digital television. Stating that in the UK Channel 4 offers examples of quality as diversity in two television series that also launched a cross-platform media projects

(Adam Gee, interview with the author, 2006). The *Lost Generation integrates* a television series – *The Somme* – with a participatory online project whereby viewers' personal contributions about relatives who fought in the First World War produce an interactive public archive, which connects public media with other public institutions such as libraries and museums (Debrett, 2009). This means that Jua Kali artisans could access content that is in different formats such as live stream, dvd, live broadcast. If the content is innovative in nature, then the participatory online project will allow Jua Kali engineer viewers to contribute their personal contributions about the machines or concepts that they are trying to build.

The second project was launched with *Medicine Men* – four-part television series in which 'two young British doctors immerse themselves in radically different cultures in four of the most extreme places on earth' – which gave rise to Medicine Chest, a website that aims to provide a 'repository of traditional remedies and folk wisdom in the area of health and healing', drawing on the content of the TV series, while also hosting 'conversations about these areas and drawing together a range of perspectives' (Channel 4, 2008). It is also seen that the goodness of the project named above as medicine chest would mean that Jua Kali artisans view the concept of digital television as having the ability to provide a source of innovative content of tv series linked to the issues that they face as innovators in an ever changing world of innovation.

Reflecting what Graham Murdock (2004) has termed the 'digital commons' a metaphorical reference to the shared public space of medieval village life that invokes the

value of retaining public domain, online networking such as this fosters stronger community connection and serves civic education in ways previously unknown. One of the most groundbreaking new developments at the BBC, the Creative Archive Project is an online venture that will open up much of the BBC's past programming for non-commercial public use and re-editing as 'mash-ups', a move Murdock deems 'the most important innovation in public service provision since its original foundation', for its 'stimulus to vernacular creativity' (2004: 17). Murdock 2004 also offers a different perspective that in production, it is easy to create a short combination of clips that can be seen as inexpensive and can be shared on free platforms such as YouTube. This then mean that Media producers may not need to create new content at times, but can always re-make existing educating videos in different yet interesting formats. It also means that Jua Kali artisans have the ability of accessing this program free of charge.

Debret (2009) also adds that similarly, the internet also offers a site for trying out new concepts for relatively low cost. Precursors to YouTube and MySpace, Channel 4's online documentary channel, FourDocs (online documentary channel) and the BBC's Video Nation project pioneered social networking and UGC, yet demonstrate a clarity of purpose, richness of content and cohesiveness rarely found on commercial sites. Digital media technologies, thus mean far more to PSBs than multiple channels and flexible delivery, they offer potential for renewed legitimacy by engaging and connecting communities in new ways. Therefore, audiences like Jua Kali artisans are able to access content in all the low cost platforms such as YouTube and my space. Digital technologies therefore mean that media producers can give flexible delivery of content to the Jua Kali audiences. In the digital and online environment the public service ethos has evolved and

expanded, with the ‘holy trinity’ of PSB goals devised by the BBC’s first Director General Lord Reith – ‘to inform, educate and entertain’ – complemented with the addition of ‘connect’ (Born, 2004: 486).

Digital media online potentially serves two broad purposes for PSBs: extending the scope for production through both supplementary and dedicated online content and offering new kinds of relationships with the audience. Contributing to a ‘digital commons’ (Murdock, 2004) the always-on interface of PSBs’ portal websites offer junctions where diverse audiences and/or user groups are exposed to a wide range of ideas, services and communities. Comprehensive public portals or junction sites such as these, facilitate the servicing of specific minority audience needs while also cross-promoting general public interest content, ameliorating fragmentation, a key dilemma for the postmodern public sphere.

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Conclusively, digital television platforms can nurture innovation by offering content on demand by audiences. They can create interactivity among the audiences and also among the media producers. The digital television platforms also bring an audience conscious culture in producing tailor made content for the audiences. This encourages the idea of finding a system that can be adopted by Kenya's local public service broadcasters or finding a system that can be adopted by the producers who are part of the digital television platform.

2.10 Reality Television as interesting content for Jua Kali artisans

Information needs to be packaged in captivating ways and one of them that could ensure gratification is by creating content that encourages interactivity and the fostering of interest In this section, the researcher tried to identify ways in which content can be made interesting, with a real depiction of settings that shows ways of problem solving in the work place. Through reality television, content is seen as realistic, it allows for certain relationships between the viewer and the audiences and ensures that learning is taking place in a creative, interesting and educational way.

Dyer (2010) conducted a study on reality television using para-social relationship theory and economic theory to define the success of network reality programming. This dual theoretical approach attempted to explain the success of reality television since the early 2000s. Both qualitative and quantitative components were used to try and understand the growth of reality television. Two focus groups were conducted with a total of 18-35 audience participants. The information collected suggested that viewers of reality

television formed para-social relationships. It appeared that female viewers were more likely to form para-social relationships than male viewers. This concept may be used by Jua Kali artisans who are likely to form para social relations with people they can relate to; those who are solving real life problems in workshops through digital television.

Dyer (2010) argues that since the beginning of the 21st century, reality TV had begun to monopolize both cable and broadcast primetime television programming schedules. In this context, reality TV is defined as a show without “actors” in which the general public has access to becoming a contestant on the program. While technically any type of live, unscripted, or non-fiction program is reality TV, this examination excludes news and talk show type programs and focus on competitive and entertainment reality TV programs. What those in the television business can understand is that reality TV is the most profitable form of television programming because it has lower production costs and often brings in more viewers and more advertising revenue than scripted programs (Hirschorn, 2007). It is therefore possible to say that local Kenyan broadcasting stations can find it more profitable to adopt such genres for niche audiences such as the Jua Kali artisans because of low production costs that can bring in more viewers and niche advertisers.

Reality TV programs have attempted to bring important personal and cultural issues to the forefront that are otherwise not commonly given attention in mainstream media. Specifically, Dyer’s (2010) research looks at different subgenres of the wide genre that is reality TV using a sample of shows such as *The Biggest Loser* from NBC, *American Idol*

on Fox, *Survivor* from CBS, and the *Bachelor/Bachelorette* franchise on ABC. By breaking down the genre and looking at how people are consuming reality TV, it opens the doors to understand more closely the relationship that viewers have with these programs and why they choose to watch. To fully understand reality TV as a new cultural trend, one must analyze the successes it has seen along with the criticism.

By using both Para-social relationship theory and general economic theory, Dyers (2010) thesis gains a dual-theoretical exploration towards finding the reasoning behind the rise in viewership of reality TV. Television and production executives seek to maximize profit while audiences seek to form relationships with those whom they watch on TV. Reality TV straddles a line between both of these theoretical concepts, which in turn allows them to work in support of one another.

Dyer (2010) explains that from the headlines to ratings, reality TV programming has been rising exponentially and is met with disgust as well as praise. Throughout the history of television, reality TV is re-defining itself as a new genre. Television networks are making incredible amounts of money for advertising during reality TV programs (Baker, 2008). Also, money is being saved during pre-production and production due to the considerably lower production costs of a reality television program (Hirschorn, 2007).

It is easier to understand why the networks are producing reality TV, Programming has become much more interactive for viewers because they can literally become a part of the show by being contestants on a reality TV show, or they are often able to watch the program and vote on the fate of other contestants on the show. Viewers must also

remember that the participation in these shows is seemingly voluntary, thus challenging the fact that participation in these programs could be exploited. However, while participation is voluntary, programs have a motive behind the casting of reality TV programs. In efforts to gain the largest and most diverse demographic, casting is methodical. “Most TV shows want us to see ourselves on screen” (Berman, 1987, p. 103) so in order to appeal to the masses, conscious efforts are made to have many different types of people within a show so that viewers can find someone with whom they may closely relate with. Not only do these new programs open doors to deeper para-social relationships, but they also allow for a more interactive viewing experience for the audience through new media platforms, which may be a key idea as to why audiences are choosing to engage in and watch these programs.

Beyond the economic reasons for reality TV’s success, many researchers have struggled to find the link between the viewer and their para-social relationships. Initially para-social relationships were defined as a “seeming face-to-face relationship that develops between a viewer and a mediated personality” (Horton &Wohl, 1956, p. 215). Since the introductory definition of para-social relationships, there have been many hypotheses about why individuals are choosing to partake in para-social relationships. It has been hypothesized as a means to cope with loneliness or as a fulfillment of their need for interaction that has not been met by other means.

As stated earlier, reality TV is a more recent genre that has been growing over the past few years and as a genre, it is utilizing many tools in order to create a profitable product. Its goal is to create a new genre that ordinary people could relate to and one that would be

successful. “Reality TV’s playful approach to generic 5 hybridity and its relations with the documentary, the soap opera, the talk show or the game show, were debated self-consciously in the initial academic work in the field,” (Geraghty & Jancovich, 2008, p. 160).

Hill (2005, p. 2) Explains, “Reality TV is about the viewing experience of a developing factual television genre. It is commonly assumed that audiences cannot tell the difference between entertainment and information, or fiction and reality in popular factual television.” Audience perception of this particular genre of television really opens the doors into giving us an understanding of why this genre seems to be here to stay.

Reality programs are becoming a more interactive type of programming in which the audience not only feels closer to the cast members, but also in some cases the audience is responsible for their fate on the show. There is more hybridization now than ever when it comes to television programming. The line between scripted and reality continues to blur while scripted programs such as “*Modern Family*, *Arrested Development* and *The Bernie Mac Show* have all used the conventions of reality storytelling” (Gabert, 2010) and reality programs have begun to emulate their scripted counterparts with their storylines because “audiences have reached a comfort level with the two genres — and with shows that display characteristics of each” (Gabert, 2010).

Reality TV allows people to bring private emotions into public arenas. Mestrovic (1997, p. 87) argues that “Almost every hour of every day, Americans and other Westerners can tune into a television program that either offers some sort of self-help therapy or presents

someone confessing how they engaged in or overcame drug abuse, rape, adultery, obsessions, psychotic symptoms, or whatever." This is seen as either positive or negative depending on the critic.

Watching a show that attacks such intimate topics allows viewers to relate more closely to things that have happened to them that are possibly too taboo to discuss in their daily lives and therefore shows with such hard-hitting topics create an outlet for them. However, the counterargument is that cases such as these are why people tend to find reality shows controversial or even exploitative. While there is a thin line that must be walked, it is still possible that these shows can open people's eyes to their own problems and issues in the people they love. These programs can be a learning experience because in human nature, we learn from what we see others do. And unlike a scripted drama where audiences understand the stories and characters were all contrived, reality TV consists of people that the average, viewer can connect to.

2.11 Integrating Broadcast and Video On-Demand Services through TV Recommendation and Personalization Systems

The expansion of Digital Television and the convergence between conventional broadcasting and television over IP has contributed to the gradual increase of the number of available channels and on demand video content. Moreover, the dissemination of the use of mobile devices like laptops, smartphones and tablets on everyday activities has resulted in a paradigm shift from the traditional television coach viewing to everywhere, anytime from any device (SOARES & VIANA 2014). Although this new scenario

enables a great improvement in viewing experiences, it also brings new challenges given the overload of information that the viewer faces. Recommendation systems stand out as a possible solution to help a watcher on the selection of the content that best fits his/her preferences (Soares & Viana, 2014).

The proliferation of video programs provided by television and telecom operators, although contributing to attracting new customers to these services does also raise some difficulties to the viewer on the selection, from the available assets, of the content of his/her interest. The traditional tools for television content search, the Electronic Program Guides (EPGs), do not efficiently meet the viewer's needs. These guides provide extensive lists of television programs that require the user to spend too much time in order to find a program of potential interest. A similar situation occurs in Video on Demand systems (VoD), where the search functionalities are usually pretty limited. Overloaded with a lot of programs, many viewers systematically give up watching a program and tend to zap between different channels or always watch the same shows or channels (Soares & Viana, 2014). This could be a major reason why Jua Kali artisans have a challenge in access of content. The reason could be that there are a few videos on demand systems. This is where the search functionalities are very limited. It is therefore likely that Jua Kali audiences are more likely to think that there is a lot of content to watch however they end up being tourists who move from one channel to another without having a particular show that they enjoy watching.

In this scenario, assisting tools that guide the viewer in the content selection process can contribute to increasing a person's loyalty to a specific service/product and thereby contribute to improved cost-effectiveness for the service provider. Recommendation systems do usually rely on information that enables creating a user or group profile and based on available content descriptions suggest new content that best fits this profile (Soares & Viana, 2014).

Having emerged as a reaction to the increase of the amount of information available to the user, recommendation systems may be defined as any system that can make recommendations or orientate a user to services, products or content potentially interesting among several alternatives. Shafter et al. (2001) describe the operation mode and a general structure that recommendation systems should implement.

Recommender systems are usually classified according to the approach that is used to find information that may fit the user's interest *Content-based systems* – The system tries to find new items that are similar to the ones a user has shown interest in the past (Soares & Viana, 2014).

Collaborative filtering systems – Recommendations are based on the analysis of the similarity between users and suggested items are those that users with similar preferences have liked in the past. This approach is the most commonly used, although it requires a large number of active users in order to be able to enable better results (Soares & Viana, 2014).

Hybrid systems – Implement a combination of two or more recommendation techniques. These systems try to take advantage of all techniques used, to improve system performance, and to reduce the disadvantages of each technique used individually. The implementation of any of these approaches requires gathering information concerning the satisfaction of the users regarding the watched items. Two different approaches have been proposed: a classification range is defined and users are required to explicitly input their degree of enjoyment, or the system automatically infers user rating by monitoring ones activity while using the service (Soares & Viana, 2014).

Some research has been conducted for the development of recommendation systems in the context of television programs. The PTV project (Intelligent Personalized TV Guides) was one of the first systems implemented in this area and is a reference to many other solutions that came later. PTV is described as a system that learns users' preferences and provides a personalized program guide based on their profiles. Recommendations are generated using a hybrid recommendation approach that combines content-based and collaborative recommendation strategies (Soares & Viana2014).

Information on user's preferences is collected explicitly and the user is required to indicate main interest including e.g. Favorite television channels, preferred watching periods, genre, etc. To enhance the system performance, the user can also provide some feedback and negatively or positively acknowledge the recommendations he is provided. Besides a Web-based version, a WAP was also developed for mobile phones. The proposal describes not only the user's historical information (e.g. Ratings or gender

preferences) but also information that can change in each access to the system (e.g. Mood). The recommending mechanism is based on some user characteristics such as activities, interests, moods, experiences and demographic information AIMED. Such a concept as stated by Soares and Viana (2014) ought to be encouraged by Media producers who work in tandem with media houses or production houses. It will ensure that innovative content is recommended to Jua Kali artisans. It is also likely to have a record of watching patterns of Jua Kali artisans and it is more likely to offer ideas on what to watch for Jua Kali artisans. Soares and Viana (2014) also note that results indicate that the AIMED model increases recommendation accuracy and decreases prediction errors when compared to the conventional model.

A different paradigm is presented in the TV4M system. This proposal is based on the idea that very often several people share the same living room and watch television at the same time. Recommendations should then take into account not only one user profile but should be able to link a set of profiles. Initially, all user profiles are grouped in order to build a common profile and afterwards, the system makes several recommendations that reflect the majority preferences of the group (Soares & Viana, 2014).

According to the authors, for the system to be reliable, it is crucial that a significant sample of the group watches TV together for a long time so that the algorithm is able to converge. This system provides approaches that present a solution that is able to integrate two different usage scenarios (broadcasted and on demand content) and to adapt the recommendation algorithms to the specific characteristics of the services. Additionally, In the case of Jua Kali artisans, there is a need to understand their needs as audiences. The

recommendation systems will therefore assist in knowing what programs to create for media producers and will create a link between media practitioners and audiences such as jaw Kali artisans.

2.11.1 Description of the System

Architecture depicts how the system is developed, where two main parts can be considered: the client and the server. As for the client, we can find the Web interface, based on Java Server Pages (JSP), with which the user interacts and from where information will be collected by the system. The information resulting from user interaction is collected through JavaScript and AJAX and is processed by a set of Servlets, which are responsible for storing the data in the MySQL database server. Implicit and explicit data are considered. The server is based in the Apache Tomcat and a MySQL database, used to store information related to the user (authentication, usage history, profile, recommendations, etc.) And content (EPGs and on-demand content description) (Soares & Viana, 2014).

Program guides are obtained from a public site using a Web Service. Information about broadcasted content includes the title, program description, show times and duration. The set of all programs makes up the EPG, which will be made available in the Web interface. The core component of the system is the recommendation engine, developed in Java and responsible for generating the recommendations using both a content-based and a collaborative filtering approach. The engine is executed periodically in order to consider updated information that matches the current user’s behavior (Soares & Viana, 2014).

2.11.2. Metadata Schema for User and Content Description

Generically, metadata is data about data, such as actors, genre or duration of a television program. Metadata can be used in the context of television to describe a set of different aspects that range from low level descriptions of the content, such as the coding format or the histogram of colors used, to high level semantic characterization of the content, identification of the service provider or even usage history and user profile (Soares & Viana, 2014).

Program characteristics (title, genre, actors, etc.) And usage history is described according to the TV-Anytime (TVA) standard and are used to identify the similarity between programs and between users so that recommendations can be constructed. Established by the TV-Anytime Forum, TV-Anytime is a full and synchronized set of specifications which allow description, selection, acquisition and manipulation of content on local and/or remote personal storage systems from both broadcast and online services. Based upon MPEG-7, TV-Anytime defines the following types of metadata: 116 *Content description metadata* - Includes attributes such as title, description or genre. Examples of metadata elements used by the TV-Anytime, to describe content are *Consumer metadata* - Includes user preferences and usage history.

The user history allows monitoring user actions during content consumption. The user can, for example, record; stop, forward, among other actions permitted by TVA. Monitoring of these actions allows creating a user profile that is being used to match the content available to the user preferences. *Instance description metadata* - Deals with

aspects such as location, usage conditions and the audio/video format covering the scenarios of broadcasted TV and VoD (Video on demand), the metadata schema to be used takes into account some specific characteristics of each of the services. As EPGs are the support for the broadcasted content description, the type of information used in this scenario is constrained to the available information (Soares & Viana, 2014).

The data model is divided into the set of metadata elements used to describe the programs for each application scenario (TV and VoD) as well as the set of actions performed by users while they are watching a program. The action *Watch Duration* enables storing the total period a user was watching a given program and *Service Acess Time* is the time of day the user accessed a program (either void or broadcasted TV) (Soares & Viana, 2014). The action *Rating Action* is linked to the act of the user to classify a given program. In order to enable the collection of implicit data that helps to characterize the consumer, the TVA usage history is used to describe the actions (play, stop, pause) associated with a program and executed by the user during a period of time covering the scenarios of broadcasted TV and VoD (video on Demand).

The interest on recommendation systems has been growing significantly over the past years. Different systems have been made available using various techniques in order to make access to large amounts of information more efficient. In the audiovisual domain, only recently this research area has been attracting the interest of academics and service providers (Soares & Viana, 2014). This section provides a recommendation of TV and VoD (Video on Demand) programs that are able to collect information implicitly and to

adapt the recommendation engine to specific characteristics of the services by using different metadata attribute. In order to be able to incorporate specific characteristics of the viewing devices and to enable a better list of recommendations, new features are to be added to the system to adapt the recommendations to the usage scenario. Examples include using information about the current location of the user and the capabilities of the terminal (Soares & Viana 2014).

The concept of recommendation systems is necessary in its applications. It can be adopted to assist Jua Kali artisans to suggest programs to watch during instruction and learning and how they can be made more appealing to Jua Kali artisans by nature of how they are displayed. Therefore, Jua Kali artisans will experience more accessible content with ease that can assist in innovation through an appropriate recommendation system.

As interactive media opportunities have arisen, content is now being produced, delivered and consumed in new ways. One of the exciting consequences of these changes has been the emergence of a set of complex multi-platform media events that deliver a range of content across various platforms, utilizing television, the internet, mobile phones, and digital and interactive screen services. While there are a few examples of multi-platform media events that are dramas (For example, *Fat Cow Motel*), the majority are popular factual entertainment. These examples have changed the way we think about television, live broadcasting, the relationship between various technologies and platforms, and importantly about the way we conceptualize audiences (Roscoe, 2015)

Multi-platform events have capitalized on the possibilities offered by greater technological convergence, as well as being central to certain practices resulting from media divergence. They therefore make interesting case studies to explore the new media landscape and to map out the changing relationships between technologies, content, and audiences. In particular, these new relationships are built around notions of interactivity, reflexivity, fandom, and the idea of viewers being both consumers and producers of such texts. The Australian television show *Big Brother* will be used as a case study in order to explore these issues.

2.11.3 Convergence/Divergence/Dispersal

Television is in transition. The way television is produced and delivered, as well as how and where it is watched, is changing. Television can no longer be understood as an autonomous medium, but rather as being connected to other screens (Internet, mobile phone) and cultural sites (sports fields, theme parks, sets). It is as much embedded in public spheres as in domestic ones, and as a consequence the ways in which we engage with television. The global television landscape has been radically changed by the success of factual formats, rapid digitization and have also changed. Television programs are no longer produced (or engaged with) in isolation from other media texts and new viewing practices are emerging (Roscoe 2015).

This transition space is marked by the contradictory forces of convergence, divergence, and dispersal. If we examine production processes, content, and patterns of viewing we can see these discourses in simultaneous operation. On the one hand, we have a convergence of previously discreet and distinct media forms and processes (Lister,

Dovey, Giddings, Grant, & Kelly, 2003). Drawn together and combined through digital technologies, such convergence occurs at the level of production, distribution, and in terms of the content styles and modes (Kilborn, 2003; Roscoe & Hight, 2001). At the same time there is convergence in terms of media ownership and a shift toward larger global conglomerates. There is also a greater sense of divergence, with content now delivered in distinct and unique ways to media sites such as the mobile phone and the Internet. There is a proliferation of material generated within media loops of print, broadcast, and telecommunications (Roscoe 2015).

Technological convergence has resulted in content and audience divergence. Content is more dispersed across these platforms, and our engagement with it is more fleeting. Our experience of contemporary media is more fragmented rather than unified or centralized. Instead of our viewing habits being controlled through the “flow” of schedules (Williams, 1974), our viewing is now clustered around events, and through technologies such as personal video recorders, DVDs, and subscription television services. Choice is the buzzword for both broadcasters and audiences. Multi-platform event television sets, up a relationship between producers and audiences that is based on a number of assumptions. Audiences are assumed to be both technologically savvy and knowledgeable about the processes of mediation. So audiences are assumed to understand and use the Internet, e-mail, and mobile phone technologies. They are also assumed to be familiar with traditional televisual codes, and understand how certain formats, re-mediate such conventions (Bolter & Grusin, 1999).

They are in on the game, and are willing to play. Producers also assume that at least a portion of the audience will engage with the content across these different platforms and understand the relationship between the different forms and styles of delivery. Importantly, this relationship also assumes “playfulness” on behalf of both audiences and producers. In terms of the different delivery platforms these multi-platform events mimic changed patterns of media consumption and new modes of communication. We might engage with content simultaneously across different platforms, for example, watching a television show while also accessing the Web site and sending an SMS (short message service delivered via cell or mobile phone) to the show. While this may not yet be the experience of the majority of viewers, recent studies have shown that it is the experience of certain groups of viewers, in particular young people (Livingstone, 2001; Lealand, 1999). *Big Brother* capitalizes on this by also mimicking the mode of communication used in these different platforms. E-mail and SMS become mediums used to transmit and share gossip about the participants and characters in the show, the Web sites are accessed for the retrieval and exchange of information, and the sites themselves (the *Big Brother* house at Dreamworld on the Gold Coast) allow audiences to participate directly and in ritualized ways. The language, objectives, and activities associated with these different platforms mimic how they are used in everyday life. For a section of the audience, then, the mode of engagement is already embedded within their social and cultural lives. *Big Brother* is a good example of how broadcasters and producers have tackled this new production and viewing context (Roscoe 2015).

There has been a sustained dialogue between producers, advertisers, broadcasters, researchers, and audiences through which various strategies have been developed to

address the new relationships and economies that have emerged. These “events” require audiences to invest emotionally and commit to a viewing schedule that can run up to fourteen weeks. This type of sustained viewing seems to be contradictory to the patterns of viewing associated with the key demographics for these programs. It is generally thought that eighteen- to thirtynine- year-olds are turning away from television and are less likely to commit to regular viewing, yet there seems little actual evidence of this. Nonetheless, in addition to embedding the content in modes of communication that are already embedded in our everyday lives, the producers also need to develop strategies for maintaining audiences. Producers and broadcasters know that it is not enough to put on a good show, they need to nurture the relationship they have with viewers in order to keep the audience over the duration of a series. In part, this is driven by their need to deliver large audiences to advertisers (Roscoe 2015).

Advertisers have also woken up to the fact that they need to establish a different type of relationship with audiences. Instead of attempting to hit all viewers at least once, they are now working with notions of “niche marketing” and trying to identify ways in which to build quality relationships with these groups of viewers. In this context the fan base has become of central importance. *Big Brother* has created an active fan base as well as maintaining a more general audience for the show. The show has rated well with Network Ten’s target audience, the eighteen- to thirty-nine-year-olds. Over the three series ten has managed to attract and maintain between 50 and 70 percent of that target audience. Tan has worked hard to relaunch itself as a “youth channel” and has worked to develop brand loyalty with that demographic (Green, 2001).

Big Brother has been both central to that campaign and has benefited from the more general drive to attract that demographic. Interaction and participation are central to the idea of being a fan, and there are three important ways in which *Big Brother* has created spaces for fans to directly engage with the show. This is done through visiting the site at Dreamworld, through the *Big Brother* Web site, and through telephone voting (including SMS). These spaces allow viewers to critically engage with *Big Brother* content, communicate with other viewers, and appropriate material for their own uses. They are as much producers of the text as they are consumers of it. In short, there is space to be a "fan" as described by Abercrombie and Longhurst (1998) and Jenkins (1992).

2.12 The Digital Terrain and the African context

Even though it has been argued that real access to ICT means much more than just a consideration of the infrastructure available, having the infrastructure available is still necessary (although not sufficient) condition for access to information (Mansell &Wehn, 1998). This section considers the state of ICT infrastructure available in sub-Saharan Africa. It should be noted that aggregated statistics for the African continent can be very misleading given wide disparities in conditions across the continent. This is also true within specific countries. For example, in South Africa, the Internet industry was rated 18th globally in 1998, but this included a small group of mostly white men in the urban center of Johannesburg. Further, it is difficult to measure Internet access because patterns of use in developing countries are different from those in developed countries. For example, in developing countries, there are many shared Internet accounts and public access is more common; thus statistics used in developed countries such as dialup subscriber accounts (Jensen, 2000, 2002) may not be applicable to the African context.

In general, the level of technology penetration in Africa is very low compared to developed countries (US Internet Council, 2000). Of the 818 million people in Africa, statistics from 2001 estimate that only: 1 in 4 have a radio, 1 in 13 have a television, 1 in 35 have a mobile phone, 1 in 40 have a fixed line telephone, 1 in 130 have a personal computer (PC), 1 in 160 use the Internet, & 1 in 400 have pay-TV (Jensen, 2002)

There are several reasons for this, including: the general low level of economic activity often makes the technology affordable. Many African countries still have irregular or

non-existent electricity supplies, which makes ICT use problematic. For a detailed discussion please see African Internet Status, available at www3.sn.apc.org/Africa/afstat.htm. Much of the information presented in this section is taken from this website and from Jensen (2002).

In Africa ICT Infrastructure and use of ICT in Education goes hand in hand with the development of rail, road and air transport which in most cases is limited. This infrastructure is needed to implement and support ICT infrastructure, as well as the increased social and economic activity that is stimulated. Many tax regimes in the African continent define computers and cellular phones as luxury items, which adds to the price of these goods especially as the vast majority must be imported. Lack of skills together with the problem of brain drain (as noted above) also makes widespread adoption of new technology difficult. All of the above issues are further complicated by a business climate that encourages investment in Africa through large multinational companies rather than in ways that might be more beneficial to the continent (Butcher, 2003).

It should be noted at the outset, however, that, although there are many challenges facing Africa in the drive to develop; many strides have been made on the African response to the information society/economy and much has already been achieved. Further, as discussed above, combating the digital divide and using ICTs for continental development are fundamental focuses on current development initiatives (Butcher, 2003).

Jensen (2002), notes that current estimates on computer ownership indicate a total of about 7.5 million computers in Africa in 2001, or 1 per 100 people. However, there are

studies that have come up with figures of only 1 computer per 500 people. In addition, because of poor maintenance and insufficient skills to diagnose and repair computers were needed, many available computers are out of use. Current estimates of African Internet users are between 1.5 and 2.5 million (excluding North and South Africa). This translates to approximately 1 user in every 250-400 people compared to the global average of 1 in 15, and a North American and European average of 1 in 2 people. In Africa, 39 countries now have 1,000 or more dialup subscribers, 20 have more than 5,000 and 16 have more than 10,000. In an effort to deal with high costs of telecommunication and Internet use, many countries have instituted low call charges for, all Internet calls (Butcher, 2003). This is a major benefit for those living in remote areas.

Indeed 19 countries have adopted this approach, namely Benin, Burkina Faso, Cape Verde, Chad, Ethiopia, Gabon, Malawi, Mali, Mauritius, Kenya, Mauritania, Morocco, Namibia, Niger, Senegal, South Africa, Togo, Tunisia, Uganda, and Zimbabwe. The Seychelles has reduced Internet call costs to 50% of normal local calls to encourage Internet use. These efforts notwithstanding, the cost of Internet access is still too high for the majority of the African population. For example, the cost for a local dialup account is approximately $60/month, which is much higher than the average African income. This cost is compared to $22/month in the US. This is equivalent to just less than 20% of GDP per capita for African people, compared to the global average of 9% and only 1% in high-income countries (Jensen, 2002). The cost of international bandwidth is high due to international tariffs and lack of circuit capacity, but there has been substantial growth of international bandwidth (although from a low base), which has been driven by growth of

shared/public access and use of corporate networks. However, the cost has made it difficult for most countries to obtain sufficient international bandwidth and congestion at peak times is common (Butcher, 2003).

In the area of telecommunications, there is a high rate of growth of both fixed line and mobile coverage (also from a low base). Research in ten African countries by African Connection has shown that the strongest demand in rural Africa is still for basic voice communication (African Connection, 2002). For Africa as a whole, the number of fixed lines grew from 12.5 million in 1995 to 21 million in 2001. However, North Africa has 11.4 million of these lines and South Africa 5 million, meaning that the rest of the continent has only 4.6 million lines. Thus, the situation varies greatly across regions and countries (Butcher, 2003).

Some examples of teledensity (number of lines per capita) include: Sahel and Central Africa – 1 line per 200-500 people, North Africa and South Africa – 1 line per 13 people, West and East African coastal regions – ranges from 1 in 50 to 1 in 100. Except for North Africa and South Africa, only a few smaller countries have been able to reach a teledensity above 1 in 50. These are Botswana, Cape Verde, Gabon, Mauritius, Mayotte, Namibia, Sao Tome, Senegal and Swaziland. These low levels of tele-density are being overcome, to some extent, by rapid growth in mobile cellular telephony, especially the pre-paid service that accommodates irregular sources of income (Butcher, 2003).

2.13 The Myth of Universal Internet Television Viewing and the African Status

An article by Quail (2012) that television goes online: Myths and realities in the contemporary context have highlighted some issues in the Canadian context. Quail (2012) suggests that if part of the myth surrounding online television were that “everyone is doing it,” it would be important to examine the myth of universal online viewing. For example, a recent story on MSNBC, “Teens Tune out TV, Log on Instead,” reports on a Yahoo-funded study that found that young people spend more time online than watching television (Weaver, 2011). This was echoed anecdotally by informal polls of Canadian university classrooms where a majority of students claims they do not have a television. How accurate and representative was this picture in the United States, Canada, and globally? In this case, further statistics about viewing practices will help create an accurate and realistic picture of the online viewer, as well as patterns and geographies of online viewing.

According to International Telecommunications Union (ITU) research, the digital divide is still strong. The global Internet penetration rate for 2008 was only 23%: this was quite a low percentage of the worlds’ population access to the Internet (ITU, 2009). Of course, the so-called developed world has more access to the Internet than the less-developed nations: 55% people are online in the former and only 12.8% in the latter (ITU, 2009

Quail (2012) observes that Europe’s Internet penetration rate is only 49%, which is less than half of the population, that only a third of Latin America is online, and that less than a quarter of the Middle East is online. Strikingly, only 5% of Africans use the Internet. These numbers do not support a picture of a global television downloading public. Additionally, mode of Internet access would be important to consider. In Africa, most

Internet access occurs in public settings such as Internet cafes, with mobile and broadband infrastructure being “negligible.” Geography also helps structure this context, with coastal countries' access to undersea fiber optic cables, affording greater bandwidth that might be needed to access Real-time or Windows-based videos, let alone Bit Torrent files (Internet World Statistics, 2008).

Conversely, it might be unremarkable to note that North America has the highest Internet penetration rate. However, this rate does not speak to the nuances in-country divides. Seung-Hyun Lee (2008) helps us understand the picture of an American online viewer using Rogers (1995) diffusion of innovations model. The study shows that mobile TVs early majority (as well as late majority) adopters are college students. Likewise, in a recent presentation at the Canadian Communication Association, Nikki Porter (2009) demonstrated that within Canada, one of the most wired countries in the world, only 2% of the population relies on the Internet for TV, with young people and those with higher incomes more likely to watch online. Porter (2009) has astutely dubbed this the “prime-time digital divide.” In her words, claims about online viewing are “based on statistical outliers,” succinctly naming this part of the myths equation. Lee et al. (2009) further demonstrate fragmented online viewership choices based on age, income and educational level. From these studies, we can consider that the younger, more affluent viewers are more likely to be the “everyone” in the online viewing myth.

The digital divide similarly could be applied to each country’s Internet access and computer ownership, which are closely tied to income, wealth of the country, social

status, educational and skill level as well as age. This proves to create a multi-tiered global divide of users, perhaps best understood through the “hype” and “obsession” model, as demonstrated by Dimitri Schuurmanetals (2009) and discussions of Gartners Hype Cycle theory, based on Rogers diffusion of innovation approach. In this model, technology follows along a “peak of inflated expectations, slope of enlightenment and the plateau of productivity necessary to be a profitable innovation” (p. 294). They argue that the world may still be witnessing the peak of inflated expectations of online viewing, hyped and obsessed over by small, yet influential, portions of the population. Internet access itself cannot be equated to watching TV online, or the potential to download, nor can it be in actual downloading practices in various countries (Quail 2012).

Conclusively, Africa is still far from engaging ICT technology fully. However, there is promise that with growth in various areas of the economy, the necessity will create an invention. This study will be futuristic in ensuring a place in theory has been set for the full realization of the use of Digital television technologies in Africa.

2.14 The Digital Television as a New Challenge for Africa

The African governments and the United Nations’ project of enabling full access to information and communication technology (ICTs) to all citizens, is one of the most ambitious projects in Africa. Thanks to advancements in the broadcasting technology, the resulting digital television has led to a transformation of the viewer’s experience, offering images and sound with far better improved resolution and quality (Yun & Daldier 2013).

From the huge data consumption in mobile telephony causing the scarcity of frequency spectrum, the International Telecommunication Union (ITU), requires that every country worldwide migrate from analog to digital signal. This became mandatory because only the techniques used in digital broadcasting are spectrum efficient, requiring less spectrum for the transmission of a television signal of higher quality. This is explaining why huge parts of that spectrum are being freed up for the benefit of multiple other services such as fire, education, emergency, governments and security (Yun & Daldier 2013).

The trend in Africa has been about switching over, but because, the newest television equipment requires investing enormous funds, African countries are relying on foreign companies to operate the digital television market expanding in the whole continent (Yun & Daldier 2013). In addition, the shortest time left to meet the deadline set on June 17th, 2015 by ITU, considering that as of may 17th, 2013, a number of African countries have been yet to start migrating their television system from analog to digital, this could definitely plunge Africa to a rush, having failed to conduct appropriate studies in the areas of coverage and market pricing. Analyzing properly the African situation, where choosing the wireless television, including Satellite and terrestrial, over the cable television appears to be wiser. Moreover, some African countries like Rwanda have made progress. For instance, in Rwanda the transition started in 2008, with the opening of the Chinese company Startimes' subsidiary, after receiving the first terrestrial digital TV operating license for pay television services. Comment something about Kenya here I think we have made progress as well (Yun & Daldier 2013).

From the global trend of the switchover and with the new ambitious goal of providing access to ICT to all Africa continent citizens, governments must face the liberalization of media issue, giving liberty to press when considering the changes with latest technology. This brings broadcasting, direct from satellite TV to homes reaching 41 African countries by 2002. The latest major high technologies, for Africa millennium's project of Digital television on world first class technology leaders including Cisco, Conax, DELL, Eutelsat, IBM, Harmonic, Linux, Oracle and Thomson. I don't see the need of all these now that you have already motioned the switchover.

Economic wise, transforming Africa aided by its partner economies is not about charity nor is it about aid, it is all about investments and trades. So talking about the global development requires that everyone must make efforts to create business opportunities and have no restriction especially on investments towards the ICT infrastructures. This is supposed to be advantageous for it shall create more job opportunities and boost considerably economic growth or income (Yun & Daldier 2013).

The reality is that, with exception of northern Africa, most countries do not have the capacity to invest in their own Digital television system. Hence, most African countries, especially sub-Saharan countries, the migration from analogue to digital will depend on foreign or private investment funds, such as the example of some Eastern Africa countries, where the Chinese company Startimes (Star Media) operate. Other entrants to this market include the French canal+ and the South African DStv (Yun & Daldier, 2013)

However, all is not lost in the sub-Saharan Africa countries because of private foreign funds dependency. It might not be easy to implement the desired system on time, and more unfortunately, there may not be proper studies conducted on the basic system design prior to the detail design that will lead to implementing the final system, as people will just rush to meet the defined switchover deadline. Here we hesitate to observe that some might not meet the deadline. Also, if the proper signal coverage is not closely studied, some areas may be cut from the world and there could be inconveniences caused, thus a simulcast period is definitely a must, as people should have the time to readjust, by changing their old conventional television into a new type that could connect to audio and video cables from a newly affordable set top box (Yun & Daldier, 2013).

Furthermore, decreasing prices in every single country, does not necessarily translate to all African states affording the technology. The real challenge here is that all governments should be committed to providing a better content and to ameliorate the population life in every possible way. Hence we are tempted to say that Africa still has a very long way to go to accomplish the switchover goal to connect everyone to the world instantaneously. And the content is the most important thing to consider, by a DTVO, because the viewing audience (thus the resulting benefits) is determined by the interest to the contents that are offered in broadcasted programs from each of the multiple channels of the digital television. But when thinking about the liberty in developed countries where some contents are provided freely, one should be ready to accept the possibility of finding undesired contents such as adults' ones. Also, if the DTV aims to educate the youth this could be a mirage in that some movie channels and other types of dramas may influence

them. Equally children are not spared too, cartoon channels, broadcasting permanently 24h/7days, and comics could affect kids somehow. So the huge responsibility will be for parents to ensure the control of what they are viewing (Yun & Daldier, 2013).

As for the economic boost that is anticipated as a result of ICT development for most African countries this may not be realized. The reality is that for African people, the primary need is still food as in most countries people are still starving therefore less interested in the television. A case in point is urban poverty coupled with the lack of electricity that most African sub regions. Thus, for government to avoid failure to meet millennium goal of the information, knowledge based on providing information and communication technologies (ICTs)'s universal access, they should consider playing with the price of the technology and especially to create more jobs enabling people to be financially independent, as price is a very important.

2.15 The Role of Mobiles in Promoting New Learning

In this section, the researcher seeks to look at the mobile phone as a medium of learning in the digital television platform. According to proponents of new learning, mobile phones facilitate designs for personalized learning in that they are responsive to difference and diversity in the way learning occurs.

Simon, Comunello, and Wangenheim (2013) conducted a study on the enrichment of interactive Digital TV using second screen. They argue on the new paradigm of the second screen in interactive digital television through a systematic literature review.

Architecture was proposed for the use of mobile devices as a second screen, so interactivity sent via broadcast can be also used in mobile devices, in a contextualized and synchronized fashion.

Two prototypes were implemented: an interactive app for utilization with the remote control and a modified version for second screen using mobile services. The second screen has as its main functions to enrich interactivity, to allow multi users, to serve as a remote control and to share data regarding watched scheduling. The use of mobile devices or interactivity with iDTV has been welcomed and several solutions like communicating standards and multiplatform content development frameworks are proposed in the literature, advancing new frontiers and enriching iDTV content (Simon, Comunello, &Wangenheim, 2013).

Mobiles facilitate designs for situating learning by providing learning during the course of the activity – in the field for a botany student, in the classroom for a teacher trainee, or in the workshop for an engineer. In this sense, learning also facilitates designs for authentic learning, meaning learning that targets real-world problems and involves projects of relevance and interest to the learner (Kukulska-Hulme&Traxler 2007, pp. 184-86; Traxler, 2007, p. 7).

The supposed value of mobiles also arises from the manner in which they facilitate lifelong learning. Mobiles can support the greatest amount of learning that occurs during the many activities of everyday life, learning that occurs spontaneously in impromptu settings outside of the classroom and outside of the usual environment of home and

office. They enable learning that occurs across time and place as learners apply what they learn in one environment to develop in another (Sharples et al., 2005, pp. 2, 4; 2007, pp. 222-23).

Mobile phones theoretically make learner-centered learning possible by enabling students to customize the transfer of and access to information in order to build on their skills and knowledge and to meet their own educational goals (Sharples et al., 2007, p. 223). It can then be added that Jua Kali artisans would find the transfer of information most easy, If they are to find easy to use program guides in mobile phones. These can encourage easy access to information as well as making learner centered programs of how doing it yourself shows.

MLearning thus exerts a democratizing effect on the learning experience as learners take a greater responsibility for the learning process instead of being passively fed information from an instructor. Whereas in traditional models of education the goal is the transfer of knowledge from teacher to student, learning empowers students to actively participate in the learning process, to make it a process of construction and not mere instruction (dela Pena-Bandalaria, 2007). Jua Kali artisans are therefore likely to find this experience, most involving and useful because their work is mostly in construction, instruction comes second and therefore the mobile phone will become an aide in their work rather than a tool of instruction.

MLearning thus represents learning that is not ‘just-in-case,’ education for the sake of producing a bank of knowledge, but rather represents learning that is ‘just-in-time,’ ‘just

enough,' or 'just-for-me' (Traxler, 2007, p. 5). As a facilitator of new learning, learning goes beyond an emphasis on the possession of information to enabling learners to find, identify, manipulate and evaluate existing information (Brown, 2003, p. 2).

Mobiles can also supposedly facilitate knowledge-centered learning by providing efficient and inventive methods by which students can learn with understanding – meaning that they deepen their understanding of a specific subject matter rather than merely memorizing large amounts of information – and then use this knowledge as a basis for new learning through integration and interconnection. Mobile devices make possible assessment-centered learning as well by enabling the provision of continual feedback throughout the learning process, presenting learners with diagnosis and formative guidance as to what might be improved or what might be learned next. Moreover, in providing prompt feedback, learning maintains the appeal of learning and provides a motivating factor that can at times be lacking in traditional modes of education (Geddes, 2004).

Mobile phones also facilitate community-centred learning, meaning learning that the learner deems valuable because of its relevance to the surrounding social context; mLearning facilitates learning that can be used to achieve socio-economic goals that respond to problems, such as problems related to health or family care confronting the surrounding community (Sharples et al., 2007, p. 223; Wagner &Kozma, 2005, pp. 83-85).

Given that social interaction is central to effective learning, as indicated by theories of new learning, mobile phones should also impact educational outcomes by facilitating communication. They permit collaborative learning and continued conversation despite physical location and thus advance the process of coming to know, which occurs through conversations across contexts and among various people. Via mobile technology, learners engages in conversation whereby they resolve differences, understand the experiences of others and create common interpretations and shared understanding of the world (Nyiri, 2002; Sharples et al., 2007, p. 225-26).

In promoting educational modalities that accord with the theories of new learning, learning should offer an appealing aspect that also impacts educational outcomes. M-Learning can be particularly appealing for those who have not succeeded in traditional learning environments; it can attract those not enamoured by traditional learning approaches that are generalized and decontextualized in nature. M-Learning is also beneficial in that it can provide immediate feedback and thus provide continued motivation for those who are not motivated by traditional educational settings. Moreover, m-Learning presents an appeal simply because the use of mobile technology in and of itself presents something new and exciting for a great array of learners (Geddes, 2004, p. 4).

Mobiles, therefore, should impact educational outcomes by altering the character of education and learning because the nature of mobile technology converges with and facilitates new learning. The new learning is personalized, learner-centred, situated,

collaborative, ubiquitous, and lifelong. Likewise, mobile technology is increasingly personal, user-centred, networked, ubiquitous and durable (Sharples et al., 2007, p. 224). The literature indicates that the benefits afforded by this convergence should exert a positive impact on educational outcomes. Conclusively, there are many possibilities of using mobile phones for learning with Jua Kali artisans. It is clear that mobile phones are the best instruments because of their portable nature, the programs are easy to package for the Jua Kali aritsans as the audiences, they also encourage instruction and many formats can be adopted to ensure that they are tailor made for construction rather than instruction.

2.16 Rationale for study Based on literature review

The review of literature informed my research by, first, aiding the focus of this study. Review of literature revealed that use of digital television media in any organization is influenced by several issues such as: Users' perception, availability of the infrastructure, technical support, time and training. These issues are interlocking and hence the process is interactive.

Secondly, the literature review indicated that the use of digital television platform which falls under mass communication in the field of communication studies is generally an under researched area. Keiyoro (2010), Wanjala et al (2011), Masinde (2012), Abuli and Odera (2013), Miima et al., (2013) and Wambaria (2014) confirm that most of the research studies reviewed were from western countries and few studies were done in Kenya. Wambaria (2014) also confirms that most studies carried out in the area of digital television are mostly based from a western concept. Literature also revealed that the

studies did not specifically focus on the use of digital television platforms in nurturing innovation as one of the categories within the communication field study. Literature on users' use and perception of communication media is a key study area in communication studies.

Thirdly literature review was not only used in finding focus of the study, but also helped in the formulation of research instruments in chapter three. In addition the literature review assisted in the discussion of findings and helped to identify the contribution this study has made in the field of communication studies.

2.17 Summary of Literature Review

The researcher has looked at the concept of digital television technologies. Digital television is useful because, it is likely to create content that is tailor made. It assumes a wide variety of channels to show the different content which is in demand. It is also creating new debates on how the television can be viewed and in which ways it can become profitable for the media and for the Jua Kali audiences to be precise. The researcher has reviewed different digital television platforms around the world, hoping to understand the different initiatives that they have invented in satisfying the audiences. It was found that digital platforms have existed to cater for different types of audiences who are able to be interactive and to have access to content which is on demand.

The literature reviewed also focused on the concept of inspiring creative engineering content for innovation among Jua Kali artisans through reality television, the researcher hopes to identify ways in which content can be made interesting and find out ways this

can be done effectively using the reality television format in producing of content. This will allow a real depiction of settings that depict ways of problem solving in the work place.

Through reality television, content is seen as realistic, it allows for certain relationships between the viewer and the audiences and ensures that learning is taking place in a creative, interesting and educational way. The use of various digital media was also looked into, it was established that in different parts of Nigeria, farmers find the use of the radio and television as the most efficient in learning. Mobile phones are also in use for different modes of learning. Conclusively, literature in the works of Rubin (2010), was reviewed in the area of uses and gratification and audience motivation, it was found that the media in general gratifies various needs and can be used to understand prevailing attitudes towards media use by audiences.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter the research methodology that was applied is explained and justified. The discussion involves the research paradigm, methods and sampling procedures. Then, data generation techniques, piloting of research instruments, data analysis, validity and reliability, trustworthiness of the study and ethical considerations follows.

3.2 Philosophical Paradigm

It is crucial to discuss the larger philosophical ideas that are espoused in this study. First, the philosophical paradigm as a basic set of beliefs that guide action is presented, followed by the belief that is held which led to embracing a mixed approach in research (Creswell, 2009).

This research is guided by the pragmatic paradigm. The pragmatist world view holds that methods should not be focused on, however attention is based on the research problem, and pluralistic approaches are applied to derive knowledge about the problem (Cresswell, 2009). The other world views are: the relativist/ constructivist paradigm holds the belief that social phenomena is not out there, but it exists in the minds of people and the individuals develop subjective meanings of their experiences. Subsequently, the positivists who hold the other worldview rely on a deterministic philosophy in which causes probably determine effects or outcomes. Thus the problems studied by positivists

reflect the need to objectively identify and assess the causes that influence outcomes such as experiments.

In line with the pragmatist philosophy in this research, the ontological position followed in this research is that reality is constantly renegotiated, debated and interpreted in its usefulness in new unpredictable situations. Additionally, the epistemological position which is how to acquire the knowledge in question is that the best method is the one that solves problems. Finding out is the means and change is the underlying aim.

It is prudent to mention the other forms of ontology and epistemology that will not be applied in this research but differentiate the held position. Positivists ontological claims are that there is a single reality or truth. Subsequently the epistemological belief is that knowledge can be measured and hence the focus is on reliable and valid tools to obtain that. Lastly the constructivists ontological position is that knowledge is constantly renegotiated debated, interpreted in light of its usefulness in new unpredictable situations. However the best method is the one that allows reality to be interpreted. It is used to discover the underlying meaning of events and activities. In view of the discussion on paradigms, this study employed the pragmatic world view and the research approach was mixed approach. The Research method was a multiple case study and lastly the data generation techniques that were applied are questionnaires and interview schedules.

3.3 Mixed research Approach

As explained earlier a mixed research approach was employed in this study. This is where both qualitative and quantitative data are used to give an all rounded perspective of the

phenomenon being studied (Johnson and Christensen, 2008; Saunders, Philip and Adrian, 2007; Johnson and Onwuegbuzie, 2004). There are different strains of mixed methods (Creswell, 2009) He avows that there are sequential, concurrent and transformative approaches. This study was anchored on the sequential explanatory strain of mixed approach.

The mixed research approach was selected for its value in research as described by Creswell and Clark (2007, pp. 9-10). It provides strengths that offset the weaknesses of both quantitative and qualitative research. Additionally, they argue that quantitative research is weak in understanding the context or setting in which people talk, the voices of the participants are not directly heard and researchers' are in the background. Furthermore Creswell (2009) argues that qualitative research makes up for these weaknesses. On the other hand qualitative research is seen as deficient because of the personal interpretations made by the researcher and generalization of findings to a larger group. It provides comprehensive evidence as researchers are given permission to use all the tools of data collection available.

Besides, mixed research helps answer questions that cannot be answered by qualitative or quantitative approaches alone and it encourages researchers to collaborate across the sometimes adversarial relationship between quantitative and qualitative researchers in social, behavioral and human sciences. Lastly, it is "practical" in the sense that the researcher is free to use all methods possible to address a research problem. Researchers are able to solve problems using both numbers and words as well as combining inductive and deductive thinking.

As already mentioned, this study was guided by the sequential explanatory strain of mixed methods research. It is characterized by the collection and analysis of quantitative data in a first phase of research followed by the collection and analysis of qualitative data in a second phase that builds on the results of the initial quantitative results. The weight was typically given to the quantitative data and the mixing of the data occurred during analysis where the initial quantitative results inform the secondary qualitative data collection. Thus the two forms of data were separate but connected and theory was used to inform the overall procedure.

The sequential explanatory design is typically used to explain and interpret the quantitative results by collecting and analyzing follow up qualitative data. It is considered useful when unexpected results arise from quantitative data. In this case, the qualitative data collected was used to examine these surprising results in more details.

This study investigated the use of the digital television platform in nurturing innovation among engineering Jua Kali artisans in Kenya. To undertake this type of study required that the researcher conducts a case study with the use of questionnaires to collect quantitative data with Jua Kali artisans and further gather qualitative data using interviews among Media producers and the same Jua Kali artisans. These approaches provided multiple perspectives on the use digital television and innovation.

3.4 Research Methods

The research method used in this study was a multiple case study. It is a process in which detailed consideration is given to the development of a particular person, group, or situation over a period of time. A case study to begin with may include a single person, a group of people, an organization or an institution. Some case study may involve the research of a series of cases or more than a single case. In this study, the researcher examined more than one case and that is the issue of Jua Kali engineering artisans as audiences and media producers for cross validation making it a multiple case study. It is more like doing multiple investigations (Robson, 2002).

Case study research ranges in its complexity: From a simple, illustrative description of a single event or occurrence, to a more complex analysis of a social situation over a period of time. Again with the most complex approach which is an extended case study which traces the events involving the same actors over a period of time - enabling the analysis reflect changes and adjustments (Yin, 2003). In this research the case study involved the study of multiple cases. The focus was on engineering Jua Kali artisans and media producers who had produced a show on television.

Case studies aim to offer a richness and depth of information by capturing as many variables as possible to identify how a complex set of circumstances come together to produce a particular manifestation ' (Gay et al., 2009; Johnson & Christensen, 2008). In this study the case study ensured a richness and depth of information that brought out a complex set of circumstances that come together to show how media producers are challenged in producing innovative content and how Jua Kali artisans are challenged in consuming innovative content all in the context of the digital television platform.

In this research, a multiple case study was used for exploration of detailed information on availability and use of digital television. Case study as a method is very versatile, as it uses many tools of gathering information, for instance, observation, interview and questionnaires. One of the criticisms of the case study method is that the case under study may not be representative of a wider social setting and therefore it is argued that the results of the research cannot be used to make generalizations. However the case study method, with its use of multiple data collection methods and analysis techniques, provides researchers with opportunities to triangulate data in order to strengthen the research findings and conclusions. Therefore, the purpose of case study in the research was to describe that particular case in detail and take learning from that and develop theory from that approach - it is particularistic and contextual (Yin, 2003).

The study looked at two cases Jua Kali and Media producers. Five Jua Kali artisans were sampled through snowballing from within the quantitative phase and expert media producers who had produced a show before were sampled purposively. The case study was considered because one could explain in depth about an intervention or phenomenon and the real-life context in which the phenomenon occurred (Yin, 2003). For instance, in this case, it was necessary in describing the contexts of Jua Kali artisans and media producers and the issues that affect the production and consumption of the digital television platform content among Jua Kali artisans. As well as the issues that affects the production of content among media producers. Through the case study questionnaires were also administered among Jua Kali artisans.

The case study was also considered because the focus of the study was to answer “how” and “why” questions, in order to manipulate the behavior of those involved in the study, or when covering contextual conditions because of the belief that they are relevant to the phenomenon under study. Finally, it was considered when the boundaries were unclear between the phenomenon and context (Yin 2003). The in- depth interviews of the five Jua Kali artisans of the case study were sequentially conducted after the Jua Kali artisans filled the questionnaires and media producers were also interviewed afterwards. The dialogues with the Jua Kali artisans and media producers lead to an understanding of a larger phenomenon of the issues affecting the use and adoption of the use of digital television platform among Jua Kali artisans. The process also brought an understanding of the relationship between digital television platforms’ usage from production (media producer’s experience) and how audiences (Jua Kali engineering artisans) could interact with it.

3.5 Study Location

The research location is essential because it brings out certain elements of insight that inform the study (Kombo & Tromp, 2011). This study was carried out in Nairobi, Kenya; it was focused on two political sub counties which are Makadara and Kamukunji. The researcher also focused on the Jua Kali workers in the engineering sector in these areas. Nairobi is a metropolitan city. It is home to many people who have migrated from the rural to the urban areas in search of employment. The majority of these people who cannot find formal employment earn their living in the informal sector, which is what is

called Jua Kali. These artisans come into the city and learn different trades as blue collar workers. Nairobi is also a leading hub in industrial growth and technological development. The Jua Kali artisans in this area have the easy access to ICT facilities such as televisions, radios, computers and Internet enabled mobile phones. This makes the study location suitable.

3.6 Study Population

Johnson & Christensen (2008) state, that a target population is a group of individuals, objects or items from which samples are taken for measurement. It refers to an entire group of persons or elements that have at least one thing in common and also refers to the larger group from which the sample is taken. The study population, in this case is the engineering Jua Kali artisans and Media producers in Kenya. Capturing the variation in population allows for more reliability of the study (Kombo & Tromp, 201I). For this purpose the researcher drew samples from Nairobi County. Gay et al., (2009) argue that, a researcher needs to pick a target population from which to generalize the results of a study. However, in this research the findings may not be generalizable because they are focused on the specific case of media producers and Engineering Jua Kali artisans.

3.7 Sampling

Sampling is the process of selecting a section of the population under study to help the researcher generalize and make statements about the population based on the study of that sample (Johnson & Christensen, 2008; Gay et al., 2009). This study used the

multilevel sampling method in mixed research. Johnson and Christensen (2008) explain that: Mixed sampling design involves choosing the sampling scheme and sample size for both the quantitative and qualitative components of a research study. There are four types of sampling used in mixed research: identical, parallel, nested and multilevel (p. 246). In this study, the sample of Jua Kali engineering artisans in the quantitative phase, which was drawn using multistage sampling a form of probability sampling and In the qualitative phases where both Jua Kali artisans and media producers were interviewed, purposive and snowballing sampling were used. The details of how the case study samples were obtained are explained in the next section.

3.8 Sampling Procedure for the mixed method

The quantitative phase of the mixed method involved Multistage sampling, it represents a more complicated form of cluster sampling in which larger clusters are further subdivided into smaller, more targeted groupings for the purposes of surveying. Despite its name, multi-stage sampling can in fact be easier to implement and can create a more representative sample of the population than a single sampling technique. Particularly in cases where a general sampling frame requires preliminary construction, multi-stage sampling can help reduce costs of large-scale survey research and limit the aspects of a population which needs to be included within the frame for sampling.

To that regard purposive sampling was applied to choose two administrative constituencies, because of the proximity and availability of data based on the premise that Juakali artisans are more in these counties. Then proportionate stratified sampling was

applied to establish the number of engineering Jua Kali artisans in each of the 17 sub-counties in Nairobi County. Kenya has a population of 4.1 million Jua Kali artisans (ILO, 2001).

There are about 19 varieties of Juakali artisan (King, 1975) classification. Assuming an equal distribution of artisan per Jua Kali category each would be expected to have 215,289, so it was projected that Kenya has 215,289 Jua Kali engineering artisans. Kenya has 47 counties, so Nairobi County would have 4,393 engineering Jua Kali artisans. Nairobi County is also projected to have 17 political sub counties or constituencies – Westlands, Dagoretti North, Dagoretti, Langata, Libra, Roysambu, Kasarani, Ruaraka, Embakasi South, Embakasi North, Embakasi Central, Embakasi East, Makadara, Kamkunji, Starehe and Mathare. Each sub- county or constituency would be projected to have 258 engineering Jua Kali artisan. A sample of 10% of each sub-county would be approximately 31 engineering Jua Kali artisans and these are representative of 258 engineering Jua Kali artisans per sub-county. Therefore a total sample of 60 engineering Jua Kali artisans were tested at, this was a representative sample of 516 engineering Jua Kali artisans from two sub counties. They were again randomly selected against five engineering categories used to select the Jua Kali artisans in the different categories. These engineering categories were sound, mechanical, electrical, automotive, and machine engineering.

The sampling procedure for the qualitative phase of the mixed method was the use of snowballing to select five engineering Jua Kali artisans. While purposive sampling was used to select media producers who had at least produced a show. Snow balling sampling

technique works like a chain referral. After observing the initial subject, the researcher asks for assistance from the subject to help identify people with a similar trait of interest. The chain referral process allows the researcher to reach populations that are difficult to sample when using other sampling methods.

Subsequently, purposive sampling relies on the judgment of the researcher when it comes to selecting the units (e.g., People, cases/organizations, events, pieces of data) that are to be studied. In this study judgment, selection was on producers who had at least produced a show. The main goal of purposive sampling is to focus on particular characteristics of a population that are of interest, which will better enable you to answer your research questions (Johnson and Christensen, 2008). The other considerations taken in selecting the sample were accessibility and availability of participants as explained by Johnson and Christensen, (2008), they assert that the goal is always to locate information-rich individuals or cases. Additionally, they avow that decisions about whom to study are also affected by logistical constraints, such as the availability of appropriate participants, the accessibility of the potential participants and the costs of locating the people and enlisting the participants. The researcher should pick a sample that can be used to meet the purpose of the research study and answer research questions while meeting cost and other constrains. Tradeoffs will always be present (p. 244). Therefore, purposive sampling was ideal in this case and the criterion was to selected media producers who had at least produced a show.

3.9 Variables of Study

In this research the independent variable was digital television content while the dependent variable was creativity of Jua Kali artisans. The independent variable comprised of innovative content by media producers, if the content generates interest to watch innovative content among engineering Jua Kali artisans and lastly, the efforts by media producer to enhance access of innovation information among engineering Jua Kali artisan.

3.10 Data Generation Techniques

The research instruments included a questionnaire with a list of Likert scale items and semi structured interviews schedules were used. Questionnaires were administered to the Jua Kali artisans. Both media producers and Jua Kali artisans were taken through informant interviews that were semi structured. According to Johnson and Christensen (2008) an interview is quite popular because it is free from bias and respondents have adequate time to give well thought out answers (Johnson and Christensen, 2008).

Using an interview schedule the researcher held discussions with media producers who had produced shows before and Jua Kali artisans who were deemed experts by fellow Jua Kali artisans. This was to enhance the gathering of in-depth information about the current media production and Jua Kali operations that the researcher may not have been aware of (Johnson and Christensen, 2008). Johnson and Christensen (2008) reveal that this approach is ideal for gathering information that may be specific but not common to all people. So this approach was used for the people working in various production companies as media producers and the Jua Kali artisans in specific engineering trades.

The discussion was carefully planned and designed to gain information on the participants' beliefs and perceptions in the defined area of interest. Data saturation was reached when there was enough information to replicate the study when the ability to obtain additional new information has been exhausted, and when further coding was no longer feasible.

The criteria that was used in selecting the interview participants included: the topic to be discussed, which was decided beforehand; second, a predetermined list of open ended questions which were prepared and third, selecting the interviewees. This required planning and training. The method yielded a lot of information quickly and was good in identifying and exploring beliefs, ideas and opinions in the area of media management. It was also useful in assessing needs, developing intervention in order to improve existing systems (Johnson and Christensen, 2008).

Questionnaires were also useful because the responses were gathered in a standardized way, so questionnaires are more objective, certainly more so than interviews. Generally it is relatively quick to collect information using a questionnaire. However, in some situations they can take a long time not only to design, but also to apply and analyze. Additionally, Potential information can be collected from a large portion of a group and quantified. This potential is not often realized, as returns from questionnaires are usually low. However return rates can be dramatically improved if the questionnaire is delivered and responded to in class time (Robson 2002).

3.11 Piloting the Research Instruments

A pilot study was conducted in this study. One sub County Embakasi South was involved in the pilot phase where Jua Kali mechanical engineers were administered with questionnaires. Deliberate efforts were made to exclude the county involved in the pre-test during the actual research. The piloting of instruments was tried out on a small group similar to the one that formed the population of the study, a view supported by Bell (2005). The pilot involved 15 Jua Kali mechanical engineering artisans. According to Gay et al. (2009), three or four participants of the intended research participants should complete the questionnaire before actual research for a survey. In the same light Yin (2009) contends that, a pilot case study should be conducted. The criterion for the pilot study was to consider the convenience, accessibility and geographical proximity. The need for piloting was to check the relevance and establish whether the instruments will adequately generate the required information, contain the proper wording of questions, proper language use, the arrangement of the items, rule out any repetitions and redundancies, ensure the data collected would be analyzable and whether the questions are acceptable, how much time would be needed in each industry and enhance the validity and reliability of the items.

Several other scholars such as (Bryman, 2008; Cohen, Manion and Morrison, 2007; Gorard, 2008; Bell, 2005, Yin, 2009) are in support of piloting. The questionnaires and in-depth interview of the pilot were analyzed. This was meant to guarantee the validity and reliability of the instruments and that the questions asked will mean the same thing to respondents as they do to the researcher. Various aspects of the tools were changed; the

instruments were ensured to adequately generate the required information, they were corrected to contain the proper wording of questions and proper language use. Further, items were arranged to rule out any repetitions and redundancies and to ensure the data collected would be analyzable and whether the questions are acceptable. Lastly considerations on how much time would be needed in each industry to enhance validity and reliability of the items was done.

3.12 Credibility and Transferability of the study

The mixed method approaches have recently risen to prominence and the reason that more researchers are opting for these types of research is that both qualitative and quantitative data are simultaneously collected, analyzed and interpreted. In this research the main research instruments (questionnaire, and interview) usually used in the mixed method designs are presented and elaborated on. It is believed that using different types of procedures for collecting data and obtaining that information through different sources (media producers and Jua Kali artisans, among others. Can augment the validity and reliability of the data and their interpretation (Zohrabi 2013). Therefore, the various ways of boosting the validity and reliability of the data and instruments are outlined at length (Zohrabi 2013).

In quantitative research the importance of validity has been long accepted. In qualitative research discussions of validity have been more contentious and different typologies and terms have been, produced. In mixed methods research, wherein quantitative and qualitative approaches are combined, discussions about validity issues are in their

infancy. It is argued that because mixed research involves combining, complementary strengths and non-overlapping weakness of quantitative and qualitative research, assessing the validity of the findings is particularly complex. Although providing a framework for assessing legitimation in mixed research will always be incomplete. It is therefore important to address several legitimization types that come to the fore as a result of combining inferences from the quantitative and qualitative components of the study into the formation of meta-inferences (Onwuegbuzie and Johnson 2006).

In this mixed approach validity and reliability were enhanced through the application of both the quantitative and qualitative research approaches. Literature reveals that most quantitative researchers refer to it as validity and reliability some qualitative researchers, however, refer it as trustworthiness (Bassey, 1999; Jwan and Ong'ondo, 2011). Jwan and Ong'ondo (2011) avow that: Traditionally, the terms internal validity, external validity, reliability and objectivity have been used (especially in quantitative research) to demonstrate the trustworthiness of research project (p129). Nevertheless, whether one uses validity and reliability or trustworthiness, the basic principle is that the research process is truthful, careful and rigorous enough to qualify it to make the claims that it does.

In addition, it is generally agreed that validity and reliability are important components of all good research as they serve the purpose of checking the quality of the entire research process (Bassey, 1999; Creswell and Clark, 2007; Johnson & Christensen, 2008; Gay at el., 2009; Jwan and Ong'ondo, 2011). Based on these views, but in consistency with the

pragmatists paradigm within which I am operating as indicated earlier, I use will use the terms trustworthiness credibility dependability and transferability

3.13 Trustworthiness in this Study

Jwan and Ong‘ondo (2011) define trustworthiness as ensuring that the research process is truthful, careful and rigorous enough to make the claims it makes. They argue that trust enhances the utility value of a study as peers, other researchers or academics may want to refer to it. In judging the trustworthiness of a study, many qualitative researchers often use parallel criteria comparable to those used in quantitative research (Litchman, 2014). Thus, while internal validity, external validity, reliability and objectivity are used to demonstrate trustworthiness in quantitative research, qualitative researchers use parallel terms such as credibility (internal validity), transferability (external validity), dependability (reliability) and confirmability (objectivity) to ensure trustworthiness (Litchman, 2014; Jwan and Ong‘ondo, 2011). The authors argue that the way to judge trustworthiness in qualitative research in the interpretive paradigm is rather different but parallel and comparable to those in the positivist paradigm where the former terms are predominantly used. I discuss these criteria in the following sections.

3.13.1 Credibility

Credibility is referred to as internal validity in quantitative research. This is the extent to which the researcher actually investigates what he claims to investigate (Yin, 2009). The extent to which a research fact is what it claims to be (Jwan & Ong‘ondo, 2011, citing Bassey, 1999). To what extent does the researcher demonstrate having been there

(Eisenhart, 2006)? In this study, I demonstrated credibility by giving a detailed account or description of the research process and using explanations of concepts from the literature, excerpts from field notes and quotes from the interviews. According to Litchman (2014), you can judge what you read from the information provided about how it was done. Adding clear explanations and specific details about methodology helps the reader understand and make critical judgments about the suitability and appropriateness of the study.

I involved my peers and experienced researchers in reviewing my key concepts, methodology, analysis and report in conformity with Ong‘ondo (2009). I attempted to convincingly present, in an interactive manner, what my study would be about throughout the thesis, comprehensively reporting my findings and how the study is related to other studies. According to Litchman (2014) it is up to the writer to make a convincing argument that the topic is important and may be one from which we learn about the situation. A researcher should be able to demonstrate what was studied, what was found and how the research connects to the larger body of research. Further, I demonstrated credibility by using three techniques of data triangulation – interviews, observation and document analysis, which made it possible for me to explore media accountability in Kenya in different ways, thereby yielding rich data. I relied on the Yin (2009), who points out that using multiple sources of evidence yields more convincing and accurate findings and conclusions. Yin further argues that studies with multiple sources of evidence are highly rated in terms of quality than those that rely on single sources of information.

Lastly, I will ensure credibility by including various views, perspectives and voices in the text.

3.13.2 Transferability

This actually refers to the extent that a study‘s findings can be transferred to other contexts or settings. What wider claims can be made on the basis of this research? In order to ensure transferability, I used a multiple case study of subjects; the Jua Kali artisans and Media producers. Yin (2009), views that multiple cases can enhance the transferability of case studies arguing that analytic conclusions arising from two cases will be more powerful than those coming from a single case.

Again, this research has employed data triangulation. It employs the use of different methods to ensure data is rich and in depth. In the use of quantitative approach the use of great numbers brings saturation. In qualitative the exhaustion of response leads to saturation. However, in mixed research which is the anchor of this study, ensures that both quantitative and qualitative approaches used. This ensures that data is triangulated and saturation of data is achieved (Denzin, 2009). Therefore the data is highly generalizable.

3.13.3 Dependability

The objective of dependability is to be sure that if one repeated the same research, following the same procedure as described by the earlier investigator, the later investigator arrives at the same findings and conclusions (Yin, 2009). Yin actually posits

that one should conduct research as if someone were always looking over your shoulder (p45). To ensure dependability I maintained a chain of evidence and detailed the steps followed in the research process. Furthermore, I maintained a database for my study from the transcriptions, field notes and case study documents. These will provide citations for my report of findings and conclusion.

3.13.4 Confirmability

How neutral is the researcher and to what extent does he/she influence the research findings? (Jwan & Ong‘ondo, 2011). Though researchers might have an influence on the study, this does not rule out its trustworthiness (Hammersley & Atkinson, 1995). To ensure confirmability, I have explained the rationale for my decisions and activities and acknowledged my role in the research process and admitted any possible influences. My understanding is that it is normal for researchers to carry their prejudices and experiences in the research process, so we should have an open mind and try to understand these influences on the research process (Jwan and Ong‘ondo, 2011:). Litchman (2014) similarly argues that researchers need to reveal themselves through a process known as reflexivity.

Table 3.1 gives the terminologies on trustworthiness in qualitative research and the actions I undertook to ensure trustworthy in the study.

Table 3.1: Demonstrating trustworthiness in my study Terminology	**Action**
Credibility	I involved peers and mentors in reviewing concepts, methodology, research process and report. I used multiple sources of evidence –

	interviews, observation, document analysis. • I provided varying perspectives of the participants
Transferability	• I used a multiple case study to enhance analytic generalization of the study
Dependability	• I provided a thick description of each stage of the research process. • I explained the findings supported by quotations • I maintained a database of field notes, transcriptions and documents as a chain of evidence. • I provided voices of the participants
Confirmability	• I provided an account of and explain all my decisions and activities throughout the research. • I generated a great amount data – samples of which I will avail to my supervisors for inspection (sample of transcripts in Appendix) • I acknowledged my role in the research process. All this information has already been presented.

3.14 Data generation Procedures

In order to ensure high response rate, the questionnaires were administered by either the researcher or a trained research assistant this ensured high reliability and return rates. The scheduled interviews on the other hand involved asking semi structured questions, where the researcher was the interviewer. A research assistant was involved in note taking and recording using an electronic recording device to ensure that the interviewer maintained concentration in engaging the interviewees. Data saturation was reached when there was enough information to replicate the study, when the ability to obtain additional new information had been attained, and when further probing was no longer feasible. The use of the two methods of data collection encouraged data saturation which could be attained in a number of methods (Denzin, 2009, 2012). To be sure, the application of triangulation (multiple sources of data) will go a long way towards enhancing the reliability of results (Stavros & Westberg, 2009) and the attainment of data saturation. There is a direct link between data triangulation and data saturation; the one (data triangulation) ensures the other (data saturation). In other words, data triangulation is a method to get to data saturation (Fusch & Ness, 2015).

3.15 Data Analysis

The data analysis for this study was a mixed analysis since it was guided by a mixed approach. Mixed data analysis means both quantitative and qualitative analytical techniques are used in a single research study (Johnson and Christensen, 2008). A similar explanation is also given by Creswell (2009) that analysis occurs both within the

quantitative (descriptive and inferential numeric analysis) and the qualitative (description and thematic text or image analysis) approach and often between the two approaches. The analysis was an interactive process along themes created from both the quantitative and qualitative data.

In this study, quantitative data were analyzed through descriptive numeric analysis. Some of the descriptive statistical methods that were used were: numerical counts or frequencies, percentages, measures of central tendency (mean, mode, and median), percentages, standard deviation and as measures of relationship. Numerical counts or frequencies described the number of 53 Jua Kali engineering artisans why and when they use the digital television platforms. Further the median, mode and mean were used to summarize findings from the Likert rating scale. A contingency table displayed relationships between a dependent variable and one or several independent variables (Johnson and Christensen, 2008). The findings of cross tabulation will be used to find out the number of respondents who used digital television devices according to their age and gender.

For the qualitative data, thematic analysis was used. Jwan and Ong'ondo (2011) recommend the use of thematic data analysis in qualitative research. They explain that thematic analysis is a method of identifying, analyzing, and reporting patterns or themes within the data.

Thematic data analysis followed several steps: transcribing, familiarization with the data first and second coding and production of a report. In this study, the in- depth interview

was conducted among the Four Jua Kali artisans and ten media producers who were being audio recorded then their responses transcribed. Braun and Clarke (2006) define thematic analysis as a method for identifying, analyzing, and reporting patterns (themes) within the data. It minimally organizes and describes data in rich detail, going further to interpret various aspects of the research topic. Jwan and Ong‘ondo (2011) describe thematic analysis as one of the most commonly used methods of data analysis in qualitative research. My choice of thematic analysis will be informed by its flexibility, which Braun and Clarke suggest can provide a rich and detailed yet complex account of data. Part of the flexibility of thematic analysis, which has attracted me is that it allows the determining of themes.

Creswell, (2009:183) also explains that the process of data analysis involves making sense of the data. It involves preparing the data for analysis, conducting different analyses, moving deeper and deeper into understanding the data (peeling the layers of the onion), representing the data, and making an interpretation of the larger meaning of the data. Similarly, Jwan and Ong‘ondo (2011:103) agree that data analysis in qualitative research is a systematic process of transcribing, collating, editing, coding and reporting the data in a manner that makes it sensible and accessible to the reader and researcher for the purposes of interpretation and discussion.

My choice was also be informed by Klenke (2008), who reasons that qualitative analysis seeks to capture the richness of people‘s experiences in their own terms and involves the non-numerical organization of data to discover patterns, themes and qualities found in field notes, interviews, transcripts, diaries and cases.

Braun and Clarke (2006) explain that a theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data. They note that an important question to address in terms of coding is: what counts as a pattern/theme, or what size does a theme need to be? To that question, they write that what counts as a theme is a question of the prevalence, in terms both of space within each data item and of prevalence across the entire data.

Some of the phases of thematic analysis are similar to the phases of other qualitative research, so these stages are not necessarily all unique to thematic analysis (Braun and Clarke, 2006). The process starts when the analyst begins to notice and look for, patterns of meaning and issues of potential interest in the data – this may be during data collection. The endpoint is the reporting of the content and meaning of patterns (themes) in the data, where themes are abstract (and often fuzzy) constructs the investigators identify before, during and after analysis. Analysis involves a constant moving back and forward between the entire data set. Writing is an integral part of the analysis, not something that takes place at the end, as it does with statistical analyses. Therefore, writing should begin in phase one, with the jotting down of ideas and potential coding schemes, and continues right through the entire coding/analysis process. I followed the following stages in my data analysis:

Transcription: My data analysis begun immediately I went to the field to collect the data. I made notes and marked ideas about potential themes in the interviews. After the

interviews, I transcribed the data. Even though it was very tedious and time consuming, I also made sure all the interviews are transcribed verbatim.

Familiarization with the data: After all the transcriptions had been done, I read all the data to ensure that it faithfully reflected the content of the interviews. Where there was a lack of clarity, I listened to the interviews again, comparing the transcriptions to ensure that what had been transcribed was correct. I found this quite useful in familiarizing myself with the data. At this stage, I cleaned the document by deleting words that are unnecessary.

Generating Initial Codes: After ensuring that all the transcriptions accurately represented the interviews in their original nature, I read and re-read the entire data to understand it better, searching for meanings and patterns. Then I began the process of initial coding. Braun and Clarke (2006) write that codes identify a basic feature of a segment or element of the data that appears interesting to the analyst, but differs from the themes which are broader. The process of coding is part of analysis as data is organized into meaningful groups. My codes will be mainly data driven. I will identify aspects of the data that will be recurring and highlight them. I will then copy the highlighted parts into a new word document, placing all of them together.

Searching for themes: After the initial coding, the researcher grouped the codes into potential themes which were then refined by ensuring that there was a coherent pattern in each of the themes. I then checked the themes against the entire data in order to ascertain that the themes faithfully represented what is in the data. This involved going back to the

original data many times. At this stage, I also coded the observation notes using the themes from the interview data. I then grouped the themes under the three research questions.

Defining and Naming Themes: I defined the themes, identified and told a story for each theme. I also looked for sub themes in each of the themes and gave the themes working titles and described their content.

Producing the Report: This stage began after fully working out the themes, it involved the final analysis and write-up of the report. Braun and Clarke (2006) point out that the task of the write-up of a thematic analysis, whether it is for publication or for a research assignment or dissertation, is to tell the complicated story of data in a way which convinces the reader of the merit and validity of the analysis. I embarked on the narration and explanation of the data in a manner that would make sense to the readers of the report.

In doing this, I took into consideration what Braun and Clarke's advice, that it is important that the write-up, including data extracts, provided a concise, coherent, logical, non-repetitive, and interesting account of the story of the data. I made sure the write-up had sufficient evidence of the themes within the data – by including enough data extracts to demonstrate the prevalence of the theme. I chose vivid examples of easily identifiable extracts which capture the essence of the points I demonstrate. The extracts would be within my analysis in order to illustrate the story that I wanted to say about the data. In

writing the report, I went beyond the data to make an argument in relation to the research questions.

It is noteworthy that reporting the data thematically made it possible to avoid repetition by capturing similar patterns and themes from the participants. However, I made sure that I had identified and reported unique practices from each of the participants.

3.16 Ethical Considerations

There are ethical issues surrounding social research, just as there are with any form of human activity (Hammersly and Atkinson 1995). Klenke (2008) writes how qualitative researchers have documented the numerous ethical dilemmas that can arise during data generation and fieldwork, many of which revolve around issues of honesty and lying, power and privilege and the overall quality of the relationship between the researcher and the researched. There are also issues regarding how knowledge is constructed as well as issues of advocacy.

Jwan and Ong‘ondo (2011) maintain that all researchers generating data from human participants should carefully and systematically consider the ethical dimension to their study. They point out that it is important to pay attention to ethics in qualitative research to ensure democracy; respect for truth and persons and strike a balance between the demands placed on researchers as professionals and the rights and values of their participants. Further, paying attention to ethics is critical as researchers need to maintain good manners since they are guests invading the privacy of the participants.

Hammersly and Atkinson (1995) discuss informed consent, privacy, harm, exploitation and consequences for future research as some of the issues to put into consideration when conducting research. Similarly, Klenke (2008) argues that among the most important ethical principles the qualitative researcher has to adhere to include informed consent, voluntary participation, confidentiality and privacy, protection from harm and maintenance of the wellbeing of participants. I demonstrate how I will deal with these ethical issues in the following sections.

3.16.1 Informed Consent

I got permission to conduct the research from Moi University and the relevant government department as shown in pg 255. Further, I got informed consent from the media producers and Jua Kali artisans whom I interviewed. Also, I informed the participants about the overall purpose of the research and its procedures as well as the risks and benefits of participation, their right to take part in the research, not to answer questions and not to be interviewed. The participants were neither coerced to participate in the study, nor were they denied a right to withdraw their participation.

Hammersly and Atkisnon (1995:264) advise that respondents to be studied by social researchers should be informed about the research in a comprehensive way and should be given their unconstrained consent. Similarly, Klenke (2008) points out that informed consent must be obtained from individuals capable of such consent in all forms of

research. The detail and complexity of the process of gaining consent depends on the nature of the research.

3.16.2 Privacy and Anonymity

Although individuals and organizations participating in a research study have a reasonable expectation that their privacy and identities will not be revealed (Litchman, 2014), I found the process of providing anonymity in this study a bit challenging. This is because the media production houses in Kenya are few and therefore can be easily identified from general descriptions. To overcome this, I removed any uniquely identifying information from my records and from the verbatim quotes. I also removed any identifying information from the data following (Klenke, 2008). I also developed a coding scheme, a system of random numbers that allowed me to connect individuals with their corresponding data sets.

3.16.3 Confidentiality

Jwan and Ong‘ondo (2011), note that in ensuring confidentiality the investigator agrees not to report private data that can identify participants. I assured the participants that I would not report any private data that they provide. Furthermore, I offered confidentiality not only as part of an access strategy, but also utilize it to reduce the participants’ fears and encourage them to take part in the research.

3.16.4 Risk of Harm

During the study, it might emerge that some of the issues on the use of digital television platforms in nurturing innovation might be sensitive as they revolve around ethical issues and personalities. I therefore remained cautious and make every effort to minimize the risks of any harm, either physical or psychological to participants, institutions or any other person. In doing this, I will take note of Jwan and Ong‘ondo‘s (2011) caution that qualitative interviews on sensitive leadership topics, such as failures or abusive behavior may evoke powerful emotional responses, which obligate the researcher to protect the psychological well-being of the researchers. I therefore took caution on sensitive topics that may cause harm to participants such as those that delve into personal experiences of participants, such as, corruption in the media or vested interests of powerful persons.

Other ethical issues I paid attention to include:

 Deception – I made sure the information provided to participants was truthful.

 Falsified data –I presented my data honestly.

 Plagiarism – I have attempted to acknowledge all the sources within my work.

 Openness and integrity – I am honest about the purpose and content of my research and behaved professionally throughout the process.

Ultimately, I used plain common sense, experience and intuition to navigate my way around the site and to act appropriately (Jwan and Ong‘ondo, 2011 citing Angrosino, 2005). However, I have also noted Hammerley‘s (1999:18) and Obuya’s (2014) warning that while adhering to ethical rules are important, it will be important to avoid the

tendency to see research entirely in ethical terms, as if its aim were to achieve ethical goals or to exemplify ethical ideals.

3. 17 Summary

In this chapter, I have highlighted the philosophical paradigm that will guide my study, the qualitative approach and the case study method which will be used. I have also discussed how I will sample the participants and generate and analyze the data. Moreover, I have shown how I will ensure trustworthiness in my study and finally, how ethical considerations during the study will be observed.

CHAPTER FOUR

NURTURING INNOVATION THROUGH CREATIVE TELEVISION CONTENT

4.0 Introduction

This and the next two chapters present data, interpret and discuss the research findings based on the three research objectives posed in chapter one. These objectives were: To establish how engineering content shown in the Kenya digital platform inspires creativity for innovation among engineering Jua Kali artisans. To examine the efforts in place to produce edutainment content for engineering Jua Kali niche groups in the engineering fields. To assess whether engineering Jua Kali artisans can easily access was engineering content in the digital television platform.

In all the three chapters, the findings from the engineering Jua Kali questionnaire and the semi structured interview of the engineering Jua Kali and media producers are sequentially reported and corroborated in the discussion. The five engineering Jua Kali artisans and seven media producers who participated in the semi structured interviews were allocated codes such as S01, A02, M03 M02 that would ensure that names are concealed for the sake of anonymity especially because some information may cause stress to the respondents. Again their locations or work stations remain hidden as a way of maintaining anonymity.

This chapter presents the findings based on the following research objective: To establish how engineering content shown in the Kenya digital platform inspires creativity for innovation among engineering Jua Kali artisans. This objective was archieved by

understanding first the forms of broadcast media most accessed. The researcher then asked whether there was the availability of useful, interesting content and knowledge of finding interesting content. The answers were found using Likert type questions on the questionnaire. Further interview questions were asked to figure out ways the digital innovative content was shown in Kenya, and whether the content shown on the digital television platform is captivating. To begin with this research sought to find out the engineering Jua Kali's demographic data as was illustrated in table 1.

4.1.0 Profile of Respondents

Response Rate

As shown in Table 1 below the target sample was 62 in the two administrative constituencies; however a final sample of 53 respondents was realized which comprised a response rate of 88.3%.

Table 4.1: *Showing Study response rate*

Category	Population	Target Sample Size	Response Rate	Percentage of sample response rate%
Questionnaire	488	62	53	85.43%
Interview		14	12	71.4%

The response rate is acceptable according to Hamilton (2003) who explains that a rate of 50% is appropriate in guaranteeing accuracy and minimizing bias, a 60% response rate is adequate or better and a 70% and over response rate is very good. In this case, the

sample response rate was at 88 %. Well over the 70% standard. This implies that the response rate was very good for the survey.

A total of five interviews were conducted with the engineering Jua Kali individuals who were working in fields of engineering. The interviews were held at different times as they undertook their work. On the other hand, a total of seven media producers were interviewed and various meetings took place at different places. The individuals interviewed were from the local television stations, and various television program production companies. To obtain the demographic data the researcher asked the engineering Jua Kali respondents to indicate their age, gender and how long they had worked in the engineering Jua Kali industry as shown below in Table 2

Table 4. 1 Demographic description of Jua Kali respondents

Indicate your gender		
Gender	**frequency**	**Percent**
Male	52	98.1
Female	1	1.9
Total	53	100.0

Indicate your age		
Age	**frequency**	**Percent**
15-20years	9	17.0
20-25years	16	30.2
25-30years	9	17.0
30-35years	6	11.3
35-40year	5	9.4
over 40years	8	15.1
Total	53	100.0

The findings indicate that there were 53 Jua Kali engineering respondents, 98.1% of them were male and only 1.9% were female. This implies that the Jua Kali engineering industry is highly male dominated. Through the digital television platform, more females will be encouraged to be part of the industry because the digital television platform will facilitate their ease of acquiring engineering knowledge. It might make working in the industry easier and could lead to an increase in the number of females working as Jua Kali engineers.

In addition, the researcher sought to find out the engineering Jua Kali's respondents' age, as shown in table 2 above. 57.2% of the respondents were within the ages 15-25, 28.3% of them were between the age of 25-35 years while 35.8 % were between the ages of 35 and over. This implies that a very large number of engineering artisans are the youth. These are the people considered as tech survey in the country. They are most likely going to be the early adopters of new innovations from the digital television industry. It would therefore be important to consider youth between 15-35 years for new interventions from the digital television platform that could encourage innovation. The researcher also sought to find out the period of time the 53 Jua Kali engineering respondents had worked in their respective fields. This is as indicated in figure 1 below.

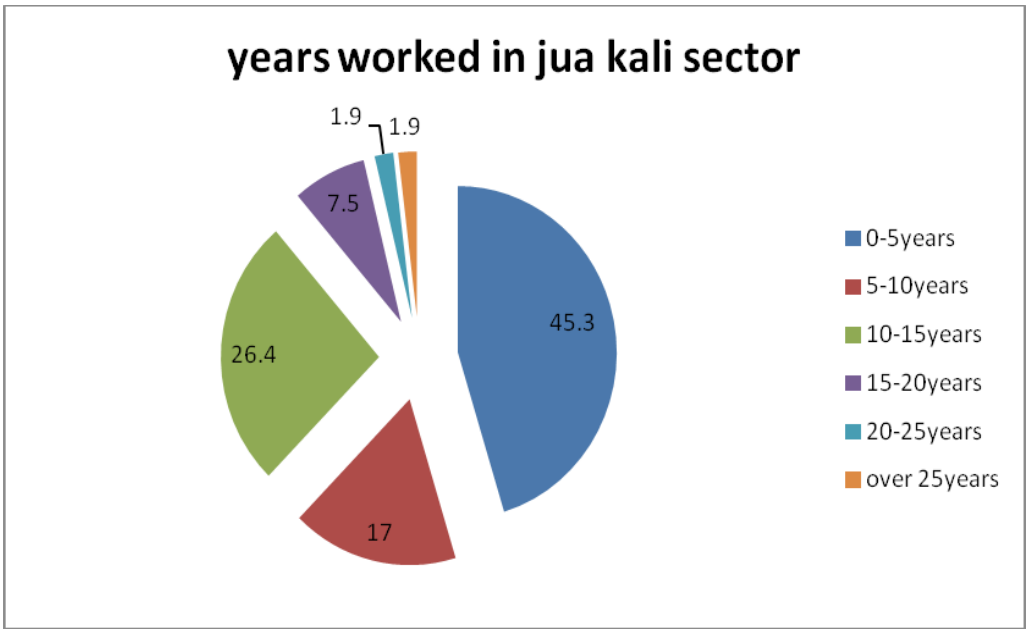

Figure 1 Years of work in the Jua Kali industry

The findings above in figure 1 indicate that 62.3 % of the respondents have worked in the Jua Kali industry for the periods ranging from 0 to10 years. Additionally, 33.9% have worked in the industry between 10 to 20 years. Lastly, it was discovered that only 3.8 % had worked in the Jua Kali industry for over 20 years. This implies that most of the engineering artisans are new in the field, either seeking employment or trying to understand how the engineering industry works. Very few have worked for over 10-20years. The findings indicate that it is common to have the young Jua Kali engineers entering the industry and their years of experience range from 0-10 years. Additionally, knowledge based on experience concerning how the engineering industry in the Jua Kali sector works is an advantage.

This research most likely benefit, the tech survey youth who are likely to access the digital television platform. Further, Nairobi to be precise is a metropolitan city which is

regularly fed by a rural, urban migration which seeks to tap into development and employment opportunities for a better life. Therefore, these findings may enhance the need to use the digital television platform to nurture innovation. It will also assist in giving novice young engineers who are tech survey useful information for the engineering work through the digital television platform. This will compensate for knowledge gaps that could hamper innovation for the engineering Jua Kali artisan who have little or no experience.

The researcher also sought to understand the engineering field categories the engineering Jua Kali workers were involved in. The table below shows this.

Table 4.2 ***engineering categories***

Indicate the engineering field category that you are involved in

	Frequency	**Percent**
Sound engineering	1	1.9
Mechanical engineering	13	24.5
Electronic engineering	19	35.8
Motor vehicle engineering	8	15.1
Machine engineering	11	20.8
Construction engineering	1	1.9
Total	**53**	**100.0**

Table 3 indicates that only 26.4 % of the respondents were found to be in the fields of sound engineering and mechanical engineering. 50.9% of the respondents were in the field of electronic and motor vehicle engineering and conclusively 22.7% were found to be in the field of machine and construction engineering. The findings could imply that

electronic engineering and motor engineering are the most popular areas of engineering practiced. The findings could further imply that with added information and knowledge about construction, engineering, sound engineering and machine engineering there is a likelihood of an increase in popularity of the practice in these fields and subsequently create an increase in innovation through the digital television platform which could offer knowledgeable content. This could imply that advances in digital television use are more likely to benefit majority who find other areas of engineering difficult. The researcher also went ahead to interrogate what forms of broadcast gadgets were most accessible among engineering jua kali artisans. This was as shown below in figure 2.

F

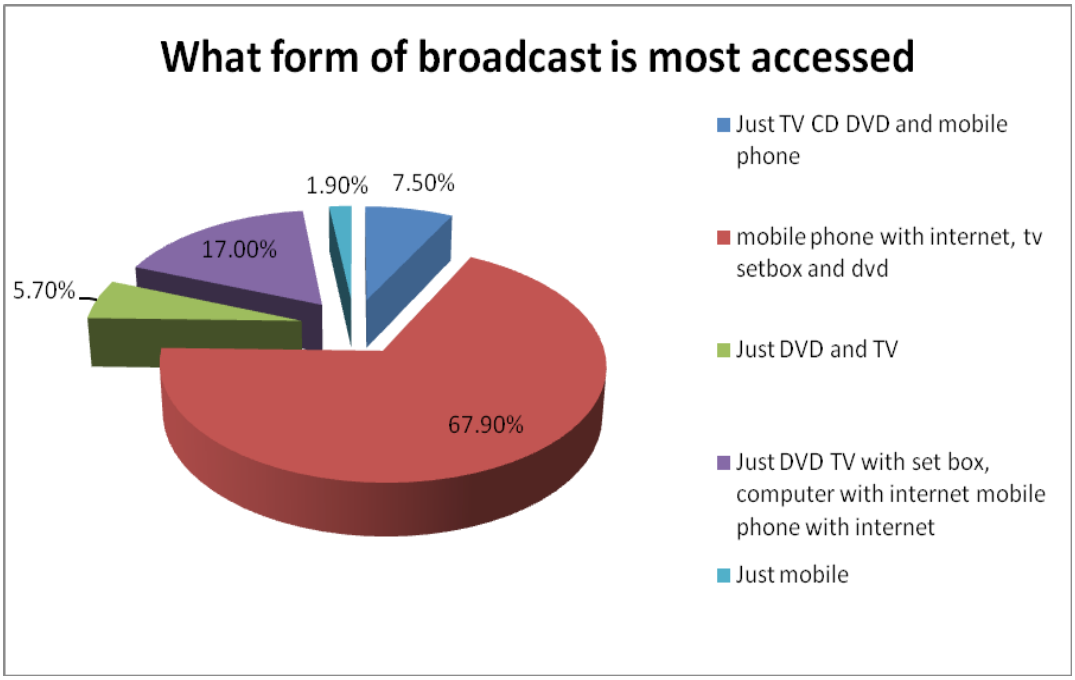

Figure 4. 2 Forms of broadcast accessed most

As depicted from figure 2 above, it was also established that 75.4% of the respondents had the most access to just a TV, CD player, DVD player, mobile phone, a mobile phone with internet and TV with set top box. 7.5% of the respondents had the most access to just a DVD player, television and a mobile phone. Further, 17.0% were able to have the most access with just a DVD player, TV with set box, computer with internet, and mobile phone with internet. These findings indicate that a majority of the Jua Kali artisans can benefit from the digital television platform if correct applications and changes are made. Equally, the majority of Jua Kali producers have the possibility of being innovative because they have access to a TV, CD and DVD player, Mobile phone with internet and Set top box. Therefore, they can incorporate content which will nature innovation hence, this dispels the belief that Jua Kali artisans may not be able to afford devices of the digital television platform due to financial constraints.

4.2 Availability of useful content to the Jua Kali Engineering Work

Question item five of the questionaire was a checklist to find out whether Jua Kali artisans in engineering consider whether there is available content useful in applying to their work. It was important to gauge their attitude and consideration of whether they have ever found content that nature's innovation from the forms of broadcast they accessed most. Figure 3 below captures this scenario.

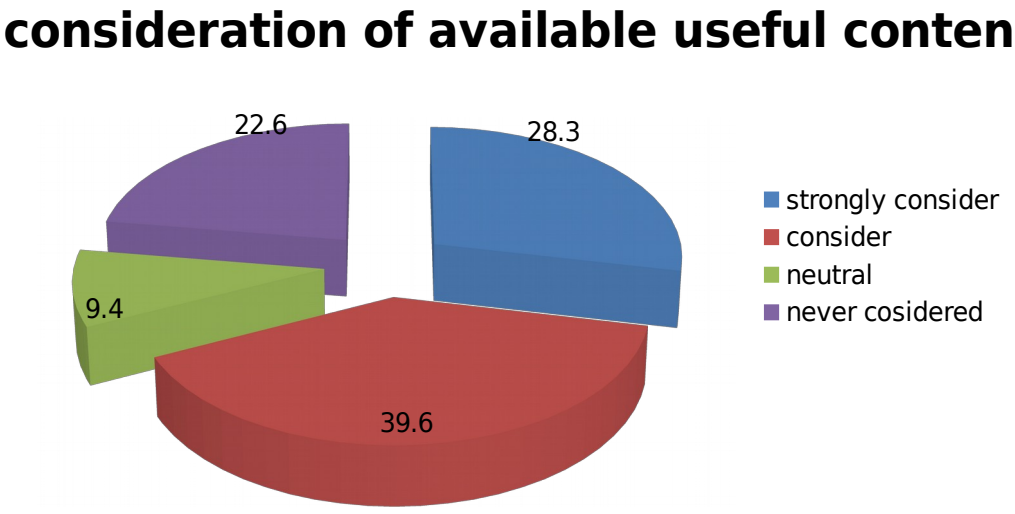

Figure 4.3 Availability of content useful to Jua Kali work

The researcher found that 67.9% of the respondents had considered that there is available content that could be useful in applying to their work. 9.4 % were neutral and only 22.6 % of them had never considered whether there is available content that could be useful in applying to their work. The implication could be that there is a great understanding that there is content that could be available. This could mean that with sensitization and a proper structure, the digital television platform can be made gratifying with content that is not only available but accessible.

In the semi structured- interviews with an engineering Jua Kali artisan, concerning what they understood about the digital television and whether there is available content in the first place, it was noted that the understanding of digital television platform was varied. For instance participant S01 stated:

> S01: I have never quite understood this digital television concept at all. But I can tell you more about my phone…

Subsequently it became clearer that the digital television concept was associated with internet use and clear channels as a rough understanding of the digital platform. It was evident that engineering Jua kali artisans were starting to consider that the digital television can be used as a reference tool this was as shown by participant M01 below.

Participant M01 stated:

> M01: The digital television platform as I understand it is about making television extremely clear, the pictures are better and clear, it is no longer about sharing Ariel signals and fighting with your neighbors. But quite honestly in my experience, I find the internet alone as most useful. I get onto the internet every day because of the work I do. I can get illustration diagrams of the sound systems such as the one that are here and find out what their common issues are, and how solutions can be found for them. I find everything about my work by checking from the internet.

Subsequently the findings from some of another interviewee indicated that they are aware of YouTube channel as a source of videos that can assist with reference. It comes with "do it yourself" techniques that can assist one to fix and make equipment work better. It therefore seems that the use of the internet is seen more useful in finding suitable visual content. However, sit at home digital television, which is also called the single screen in the family home is not considered as a learning tool neither is it viewed to have interesting content. This was as depicted by participant E03 below:

> E03: If you mention the broad term digital TV; I can say they are helping because they encourage internet use. At times you can get something that needs fixing and it gives you a challenge. At times, the programs on the internet, you tube videos come with to do it yourself techniques that can assist one to fix and even make something work better. But few Jua Kali engineers understand how to use these tools, either out of fear or out of ignorance. Usually when there is new equipment

> such as new radios or television sets in the market and I have never seen them before, what I usually do is Google the product number and then I key in the problem to the computer where the product's company website lies. I then find that those companies have ready video links that assist you to see how various problems are solved. At other times, you tube becomes useful in sorting out these issues that are seen to be common and experienced by many people. However, mostly we conduct such work on the internet.

It also seems the digital television platform is also observed to be a fairly new concept where people do not consider or believe that they can watch videos or access content that is innovative whenever they want through mobile gadgets. Again, this is because they don't fully understand how the digital concept of innovation works. So they do not gratify their needs with tools that the digital television platform offers. It is clear to them that the digital television platform as a tool can bridge the gap between those who are self-taught and those who are not able to go to tertiary institutions to learn the different engineering trades. This was as shown by participant T01 who stated:

> T01: This idea of internet usage is fairly new. I believe that most Jua kali artisans do not consider researching or revising the internet or to look to places like the tv for relevant information. The truth is we still don't understand how to use to digital gadgets and how to access information. Because of the lack of understanding, we are not sure we will find what we are looking for. So it is better to rely on friends for information and surety.

It was also established that the biggest hindrance to the use of the digital television platform as a reference tool to nurture innovation was ignorance. Additionally, set box televisions were not viewed as useful due to the fact that content available was difficult to access. This is because ones' choices are limited as compared with the internet. This was as depicted again by Jua Kali engineer T01 who stated that:

> TO1:. At times the information even on the internet in terms of the videos is so rare that you only get it in text formats such as manuals. But I can confidently say that on the phone or in the internet I believe I would find some useful things that I can follow from my mobile phone. On the phone, I can Google, but the problem with Google or the use of Google is that I find it difficult to use. It needs a person who understands what to do or what to ask for or what to look for. If there was a simpler way of using it, it would have been better. I would rather find a way of visiting sites more directly and easily because I find it very hard to use.

When participant T01 was again asked in an interview about what was observed, it was felt that respondents felt traditional TV does not show useful content.

> T01: There is nothing in terms of programs concerning my work that I see being brought on TV that is useful. Normal Television does not give us innovation opportunities

It also emerged that issue of accessing content from sit at home digital television was imminent. A participant who was interviewed pointed out that perhaps, programs could be scheduled on certain days of the week on the set top box form of television. He went on to suggest that if these programs were to be accessed in vernacular then access to this content would be made easier. This was as depicted by participant A02 below:-

> A02: Something like a TV station could have been nice if it brought aspects that dealt with what I do the engineering of the cars that is even in the vernacular. It would have been good if they could tell me, this is the latest hybrid car and this is how its engine works, and these are its advantages and disadvantages and how they can be repaired. However, they never bring such on TV. On phone if I am keen enough, I am likely to find something like that. Unfortunately the problem is that I cannot be on the phone when I am dealing with a customer who needs a quick job of fixing done on his or her car. So it is tough using this concept at work, especially on a mobile phone. However, this concept would have been better placed on traditional television, for instance, if a day is selected such as a Thursday where I know a show of cars is coming, I would have understood the mechanisms and problems of the newer vehicles and how we can improvise to fix the issues that come with them.

The objective on establishing how engineering content shown in the Kenya digital platform inspires creativity for innovation among engineering Jua Kali artisans was also

achieved by trying to investigate whether engineering Jua Kali artisans had ever found videos that were contributing to the work they do in captivating ways. Item 8 of the questionnaire evaluated this by finding out whether the videos were captivating and in existence. This is as shown on figure 4 below.

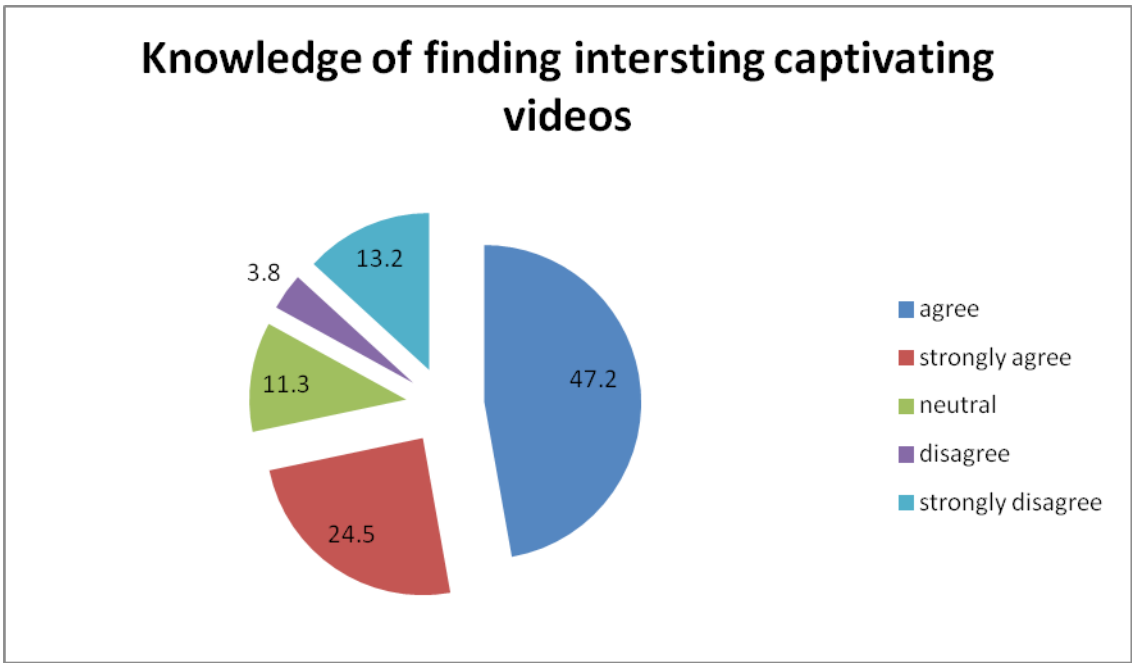

Figure 4. 4 Knowledge of finding interesting captivating videos

On the matter of finding captivating content 71.7% of the respondents agreed that there were videos that could be watched on the digital television devices that can tell them what to do in interesting and captivating ways. 11.3% were neutral while 16.9% of the respondents disagreed on whether they can look at digital television devices for videos that can tell them what to do in interesting and captivating ways. These findings mean that a majority of the respondents feel that captivating content can be found and that it does exist. This also answers the question that the digital television platform has captivating interesting content. The findings from an interview further validate the view

that engineering Jua Kali respondents found content that was told in captivating way regarding the work they do. However ignorance of how and where to use this technology was cited as reason hindering Jua Kali use of digital television platform. This is what one of them said:

> MO2: I can attest that the internet has a lot of content, for instance, let's say I have gone to Kenya Polytechnic, my literacy is better and there are those whose literacy is low, such people need some form of assistance. There is a need to make such content more accessible. It would be amazing if people can find content in vernacular, in a way, what discourages people in my perspective is ignorance, for instance, today if you want a phone and a good one they are cheap and accessible now. If it is computers, we have cyber cafes everywhere that allow you to have access to videos or texts and helps you talk with manufacturers through their interactive websites. Many homes now have at least a desktop. But I must say people need an attitude that encourages pro- activeness. Right now companies like Safaricom are even in the rural areas and now even villagers have access to the internet. Therefore, this are things that people need to be encouraged more to use.

Another respondent E03 suggests that it is possible for engineering Jua Kali artisans to call the internet a tool of work. The content on the internet is-interesting and current. The respondent reminisces that he left college a long time ago and there are elements of his work that he learned on the job, this shows that the digital television platform is clearly forming a different role; that of training people on how to do their job and creating structures and curriculum in the sector of informal education. It is clear that there are many tutorials that can help in the understanding of technologies and how to innovate. It is against this background that it can be said that there is interesting and captivating content.

E03 stated that:

> I get onto the internet every day because of the work we do. Because you know technology changes every day, and what we learn in college is sometimes not what we practice. The content is interesting and is current. We were not also taught everything in college, for instance a person like me, I finished college

> twenty years back. And at that time, things like phones or fixing of phones I was not taught because they were not part and parcel of our day to day living. But now you can find very many tutorials from the internet that are both interesting and captivating and are helping our understanding of technologies and how to innovate.

4.2 *Producers perspective on available innovation content in the digital television*

The researcher tried to find out from the perspective of media producers what interesting content is available and perhaps the formats that are taking shape and are increasingly being used to create interesting content: The findings from some of the media producers, indicated that there is interesting content and the genre of television which is reality television is capturing audiences, and creating interest among engineering Jua Kali artisans.

It was suggested by a participant E01 that reality television is the best genre right now, adopted to create content for blue collar workers. The idea behind reality television is that it is cheap to produce, and stories are catchy and interesting to follow. It can depict real life settings of characters whom Jua Kali artisans can relate to. Another way that can act as an easy to access form of content, are the do it yourself videos and they lie in the digital television platform. This was as suggested by Media Producer respondent E01 below who seems to understand that Jua Kali engineers probably get solutions from amongst themselves.

> E01: Reality television is the way to go. It is being adopted as a great avenue to make the biggest productions that are cheap, it is cheap, it is affordable, it is quick to produce, and the stories are catchy and interesting to follow. For instance on the quest channel we have reality shows on making Harley Davidson chopper bikes where the real lives of Jua Kali like people are shown without a script as they build hot rod motor bikes. Another thing that we can say is really catchy are the do it yourself videos.

So there is a need to give motivation that the content should be easily accessed. These concepts, however, may require bigger equipment and bigger crews. The idea then is that the concept of digital television means that people have to see that there are more opportunities from all the different genres targeting all these different audiences such as hair stylists, chefs and mechanics. This is as depicted again by media producer E01

> E01: A year before people could not imagine that after Tausi anything we are doing a mechanic show and your husband is a mechanic the salonist who happens to be the wife will push to have her own show and the kids who wants to be swimmers may want to have their own thing. I tell you we must open our perspective to see the possibility of having all these different content for different peoplecould be better. It basically opens more doors to more opportunities. So.

The tactics employed in reality television seem to refer to the techniques of production where content is considered entertaining if it has humor, music and drama. Again, all these are elements found in a reality television show. Media producer and participant R02 establishes that already there are programs that are incorporating these elements and they are selling outside and within the country. The elements are concepts that are not just entertaining, but people identify with them. These elements are used to help predict where the market is going and how audiences can be hooked. This is as depicted by participant R02:

> R02: I will never exhaust tactics from the concepts of entertainment, humor, music, drama, you will never ever have less content on that and these are areas that can be borrowed and are in existence to create innovative content that is enjoyable and realistic and that is what is selling out there. That is the only thing I can tell you in understanding how to create interesting content. We already see this, we have content with a mix of humor, music, drama and realistic perspectives and this is what brings interest because it is a day to day thing. The music that comes out is what people identify with. You see what is becoming trendy is what is telling you what is trending and it can give you an understanding of where you want your market to go and how to hook audiences. However, we are yet to apply this for Jua Kali artisans. Shamba shape up is considered entertaining, even humorous at times. So this could be a good example.

Additionally media producer and participant A02 noted that various digital television companies like Zuku and Mnet have understood the concept of diversity. However, they are considered too expensive. They are dedicating entire channels to particular developments. For instance Zuku is showing entire channels for cartoons, documentaries, and drama and these have very few interruptions from advertising. Programs showcasing engineering content aimed at Jua Kali artisans in entire channels dedicated to showing various engineering shows such as automotive engineering today are not prevalent. This was depicted by media producer participant A02 who perceived:

> AO2: Let me use the example of Zuku again. If you watch Zuku there is Zuku life, entertainment, movies. This is what I feel, that the possibilities for us as a media station are still very high and they can expand towards all those areas. We can have dedicated channels like nickelodeon basically on entertainment and various family shows, like cartoons and the like which are not interrupted by sponsorship but they still make money. You should put more drama, and reality TV is as dramatic as it can be, as entertaining as it can be. If you put more drama and a lot of it, yes people will watch. So if you watch without any filter, it actually pulls crowds than anything else. You just have to put drama, it is just about the content…

The implications of these findings could be that television changes can be made to ensure people are encouraged to access information. This could be through a flat rate fee than through pay per use. This then could mean that entire channels which need customized demands can be dedicated to particular audiences such as Jua Kali artisans who will have entire channels dedicated for learning various trades.

4.3 Discussion

The results generated indicated that there 67.7% had agreed that there was useful content in the digital television platform. In the interviews, Jua Kali artisans also seem to have an idea that there was useful content on platforms such as google and you tube. These findings agree with Dyer (2010) that content such as reality tv exits. The Kenyan concept of such content, is like “Shamaba shape up” and “How do you do it”. That since the beginning of the 21st century, reality TV had begun to monopolize both cable and broadcast primetime television programming schedules. In this context, reality TV is defined as a show without “actors” in which the general public has access to becoming a contestant on the program.

While technically any type of live, unscripted, or non-fiction program is reality TV, this examination excludes news and talk show type programs and focus on competitive and entertainment reality TV programs. What those in the television business can understand is that reality TV is the most profitable form of television programming because it has lower production costs and often brings in more viewers and more advertising revenue than scripted programs (Hirschorn, 2007). It is therefore possible to say that local Kenyan broadcasting stations can find it more profitable to adopt such genres for niche audiences such as the Jua Kali artisans because of low production costs that can bring in more viewers and niche advertisers.

Reality TV programs have attempted to bring important personal and cultural issues to the forefront that are otherwise not commonly given attention in mainstream media.

Specifically, Dyer's (2010) research looks at different subgenres of the wide genre that is reality TV using a sample of shows such as *The Biggest Loser* from NBC, *American Idol* on Fox, *Survivor* from CBS, and the *Bachelor/Bachelorette* franchise on ABC. By breaking down the genre and looking at how people are consuming reality TV, it opens the doors to understand more closely the relationship that viewers have with these programs and why they choose to watch. To fully understand reality TV as a new cultural trend, one must analyze the successes it has seen along with the criticism.

The contractidiction comes when useful television was viewed mostly from the internet and not from normal home screens. Jua Kali artisans E03 and producer R02 believe that normal traditional home television screens do not air broadcast content and that it is only through the internet that one can get the useful information. This too coincides Simon, Comunello, and Wangenheim (2013) findings on a study of the enrichment of interactive Digital TV using second screen. They argue on the new paradigm of the second screen in interactive digital television through a systematic literature review. Architecture was proposed for the use of mobile devices as a second screen, so interactivity sent via broadcast can also be used in mobile devices, in a contextualized and synchronized fashion. This enables interactivity and accessibility of content from multiple platforms.

Two prototypes were implemented: an interactive app for utilization with the remote control and a modified version for second screen using mobile services. The second screen has as its main functions to enrich interactivity, to allow multi users, to serve as a remote control and to share data regarding content. The use of mobile devices or

interactivity with iDTV has been welcomed and several solutions like communicating standards and multiplatform content development frameworks are proposed in the literature, advancing new frontiers and enriching iDTV content (Simon, Comunello, &Wangenheim, 2013).

Mobiles facilitate designs for situating learning by providing learning during the course of the activity – in the field for a botany student, in the classroom for a teacher trainee, or in the workshop for an engineer. In this sense, learning also facilitates designs for authentic learning, meaning learning that targets real-world problems and involves projects of relevance and interest to the learner (Kukulska-Hulme&Traxler 2007, pp. 184-86; Traxler, 2007, p. 7).

The researcher also established from the findings that a large number of Jua Kali artisans are young and are more likely to be tech survey. The findings on page 131 show that a majority of 86% who work in the Jua Kali industry are the youth. Literature reviewed on page 84 suggests that An article by Quail (2012) that television goes online: Myths and realities in the cited, a recent study, “Teens Tune out TV, Log on Instead,” which was a Yahoo-funded study that found young people spending more time online than watching television (Weaver, 2011). This was echoed anecdotally by informal polls of Canadian university classrooms where a majority of students claims they do not have a television

Additionally, Hyun Lee (2008) from the literature pg 85 helps us understand the picture of an American online viewer using Rogers (1995) diffusion of innovations model. The study shows that mobile TVs early majority (as well as late majority) adopters are college

students. Likewise, in a recent presentation at the Canadian Communication Association, Nikki Porter (2009) demonstrated that within Canada, one of the most wired countries in the world, only 2% of the population relies on the Internet for TV, with young people and those with higher incomes more likely to watch online.

The findings generated by the researcher also seemed to indicate that media producers and Jua kali artisans pointed that there were other factors that hinder the use of the digital platform: mostly that the internet may be sophisticated or that television is only in the one form a home screen which doesn't offer the information needed. This was as depicted by Jua Kali artisan E03 and MO1 page 137 . The findings seemed to agree with literature reviewed in the second chapter in page 37. Foss & Littlejohn (2009) indicate that there are a number of things that can increase or decrease dependence on a particular medium, including the individual's needs and motives, social conditions outside the individual's control and life attributes. For example, individuals who have a high need to be oriented to what is happening tend to watch more television and expose themselves to more media. Therefore, there will be greater dependencies on television for these people than for those with a low need for orientation.

Additionally, reliance on media is greater in times of social instability. This can create greater dependencies, especially for those who see television as their only outlet for news. And finally, the circumstances in an individual's life, such as health, mobility, life satisfaction, income, loneliness and education can lead to different patterns of media use

and differences in dependencies. Functional alternatives are also important in dependency theory (Foss & Littlejohn, 2009).

4.4 Summary of chapter

This chapter has presented, interpreted and discussed the findings Based on the objective of establishing how engineering content shown in the Kenya digital platform inspires creativity for innovation among engineering Jua Kali artisans. The objective was archived by establishing the forms of broadcast mediums, mostly used and accessed, understanding whether there was the availability of content useful in applying to work, evaluating knowledge of finding interesting videos and establishing whether interesting /captivating content was available. The results indicated that there was availability of content useful in Jua Kali work. However, useful television was viewed mostly from the internet and not from normal home screens. It was also established that a large number of Jua Kali artisans are young and are more likely to be tech survey. Nevertheless, there are other factors that hinder the use of the digital platform: mostly that the internet may be sophisticated or that television is only in the one form a home screen which doesn't offer the information needed.

CHAPTER FIVE

CHALLENGES AND EFFORTS IN PLACE TO PRODUCE EDUTAINMENT CONTENT FOR JUA KALI AUDIENCES

5.0 Introduction

This chapter presents the findings of the second objective: To examine the efforts and challenges in place to produce edutainment content for engineering Jua Kali niche groups in the engineering fields. In order for the researcher to understand what hampers the use of digital television platform, there was need to discuss the ease with which Jua Kali artisans found content from the digital television platform. It was also necessary to understand what the media producers experience was when producing content for specific audiences and what challenges could hamper the access and production of innovative content. Further, it was necessary to understand what efforts are already in place that could assist in overcoming the obstacles of using the digital television platform. Subsequently, a discussion is held in the literature to give an understanding of where the findings agree or disagree.

5.1 Obstacles to Effective Utilization of the Digital Platform

The researcher sought to establish what could hamper the effective utilization of the digital television platform among Jua Kali artisans in the engineering sector. Item 10 of the questionnaire sought information on whether Jua Kali engineers found it difficult to locate work related content that could assist in innovation and the understanding of their engineering work.

Table 3.4 Locating work related content

I find it difficult to locate work related content that can assist in innovation and the understanding of my engineering work			
		Frequency	Percent
Valid	Agree	21	39.6
	Strongly agree	16	30.2
	Neutral	4	7.5
	Disagree	2	3.8
	Strongly disagree	10	
	Total	53	100.0

The table 4 depicts that a majority 69.8% of Jua Kali artisans found it difficult to locate work related content that can assist in innovation and the understanding of their engineering work and only 7.5% were neutral. Subsequently, 22.7% disagreed on the issue that they found it difficult to locate work related content that can assist in innovation and the understanding of engineering work. The implications of these findings indicate the possibility that even though a majority of Jua Kali artisans have considered that there is interesting content, it is possible that the reason why they don't enjoy the content is because they find it difficult to access.

From the interviews with Jua Kali engineering artisans, it was realized from a participant that programs are more difficult to access because they are not accessible in certain formats such as DVD or in the digital set boxes. It was also found that if the shows were to be shown on television or local DVD access points, it would be more helpful in the

contribution on how to innovate. Moreover, the shows that are mostly useful sometimes are mostly broadcasted under pay television and that is when they are regarded as useful. This was as shown by participant S01:

> S01: If these programs for new cars could be accessed on a normal DVD or normal television, it would have been something different because we could have accessed it. If the same programs were to be brought on TV live, then it would have also been a very different issue. It is true that in my work, there are cars that are difficult to fix leave alone innovate, for instance, there was a car here where the ignition keys fell into a toilet, we tried to get the keys redone but every time we tried to ignite the car, it wouldn't start. The car's computer system kept relaying the information through, that the keys were not compatible. Eventually we had to take the car to the factory; the problem with the car was that we lacked knowledge on how to solve the problem. If we had access to this kind of information via the digital television platforms like your saying then there would be a big difference.

Additionally, the findings revealed that the content would be more accessible if it was tailored to specific standards for diversified audiences. The ideal situation will be such that television would deal with a diversified and fragmented audience interested in different engineering areas, from metal works to wiring and this is yet to happen. The issue again is that the content is expensive to access because pay television is always costly however it can be made affordable. Another finding is that access to the automobile engineering programs is really difficult. Especially if one does not understand Google search engines. This was as expressed by Jua Kali participant M04 who subsequently stated:

> MO4: TV has to show content on engineering; it would have to deal with all of us who work on different things, from wiring to metal works in different engineering fields. It would be great if we would watch some programs entirely on certain days. If it's a two hour program that would be enough to share ideas. However, that is not the case, but I understand television companies like DSTV bring about content that is useful. The problem is we have to pay for such programs and they are very expensive on actual television.

Moreover, television and DVDs are neither considered digital nor are they considered avenues for learning instead they are viewed as entertainment tools. It was also revealed by Jua Kali engineer participant PO3 that usually TV is just viewed for news after which it is left for children who find it more entertaining. Additionally, it has also been pointed out that if programs were to be accessed at home, it would mean that they need to be incorporated into day to day life, by instilling efforts that could make them more visible. Generally, it has been understood that the advantage of internet powered phones is that they contain the content that is much needed, hence if well utilized they can enhance learning. However, this is challenging because it is difficult to start browsing and looking for solutions when customers start flowing in, thus engineers find it best to fix without consulting or referring to the internet. This notwithstanding, with some kind of training, there can be an appreciation of how to access useful content. These views were as expressed by engineering Jua Kali participant PO3 who explained that:

> PO3: Access to the programs that really matter is really difficult. Especially if one does not understand how to Google or work with search engines. You see television, DVDs and those things in the house are not considered as learning tools. We view them as entertainment tools. I usually watch the news and leave the rest of the children and the women in the house to enjoy other programs. It is now through such interviews that I am learning there is possibility of having such programs that deal with the work I do on television. If the programs were to be accessed at home, I would be happy if they were well advertised, and we would know when they are aired this could be a Sunday when one is relaxing, but it's harder to have a TV at work because in the Jua Kali set up, there is insecurity. But if we had this program on DVDs then we are able to buy maybe a video and watch at home. The only thing that serves us to our advantage Is that in many cases, we have the phones, which sometimes we keep looking at when I am bored, or when I am calling or when I need to check up something. Sometimes the problem is that when we have customers, it becomes difficult to start browsing and looking for solutions when the customers want you to get over and done with

> the fixing. I believe in some kind of training we can all start appreciating how to access useful content.

Additionally, through sensitization, a habit of referring to the digital television platform will encourage a culture of innovating from an informed perspective. It will also mean that more people will look at the digital television platform more as a learning tool and not just as an entertainment tool. These findings are as depicted by the Jua Kali respondent M01 who were asked what they thought inhibited them from accessing the digital TV:

Another Jua Kali engineering respondent M01 also stated that:

> There was a BMW recently that had an issue with its acceleration. We took the car to various engineers with no avail. Eventually the vehicle was taken to DT Dobbie, and they too were unable to resolve the acceleration problem. So they impounded the car and gave the owner a different one to use. Meanwhile the car was written off and its parts sold as scrap. Later on, the new vehicle that the dealership had given also developed a similar problem. This time round we understood that the issue was as a result of the ignition. If we had a way of accessing such information via the internet or via digital television, then we would have salvaged the first car from being wrecked. The problem is that we have no such habit of checking up issues on the digital TV platform or the internet videos on how to fix problems or develop better solutions over time. We need quick access to this information.

5.2 Challenges experienced in Accessing Content from Media Producers' Perspective

The study revealed several challenges that inhibit Jua Kali artisans from accessing content. It was found that the media producers believe that the internet could be viewed as too complex for use by Jua Kali artisans which may not be the case. This was as expressed by participant

> A01: I think Jua Kali artisans think those things like the internet are too sophisticated and there is some level or some quality you can air, which will scare them, and they will not watch because that is not to their level. For instance, if you bring content that is too sophisticated in terms of relaying ideas, they will not take their time to watch. Again, if the content is too challenging to be accessed, such blue collar workers will not watch. So you find that they look at the internet with an attitude that is too sophisticated. So getting them to understand that yes, you can do this or practice this exercise of looking at the internet becomes a hindrance.

Equally, it was found that the content broadcasted from the digital set top boxes was believed to be too complex for Jua Kali consumption. However, through various changes and adaptations, it could be made friendlier for the Jua Kali engineering audience. Moreover, it was felt that through sensitization, Jua Kali artisans can have their attitudes changed so that they viewed the internet or digital television as a useful reference tool. This was because it was found that there were counterproductive attitudes and cultures that meant that Jua Kali artisans could not use tools such as the internet to access information. Another feeling observed could be that there is the belief that the internet is for the extremely educated. Through education and training, content can be made more accessible and also through the translation of existing and new content into the vernacular, innovative content can be made useful. This was as explained by producer E01 below:

Rather, they relied on trial and error or peer review participant E02 stated

> E02: The feeling is that the internet is for the educated, and it is not necessary, maybe because they have learned to rely on asking each other on new technologies and new solutions, so that might be a bit difficult for them. But if producers and media practitioners can come up with easy ways to use electronic program guides, where content is easily accessed and it can create a change in attitude. This would mean relief from surfing for video content that is extremely difficult to get to. Then ensuring that the videos are in the language and in the settings that are linked to the realities they face. Education and training would be helpful for them to learn to grow their business and become innovative.

Again it was found that, there could be a perception among Jua Kali artisans that the internet is something new as explained by the media producer EO1 below. The idea floated by the producer is that it is difficult to access the internet among Jua Kal artisans and that it requires special skills to access. They have no idea that the platform is near for their use. This is as shown by the participant who states:

> E01: Allow me to say that on the field, these are people that have already learned by themselves understood the internet concept as a new ball game. The idea that it is difficult to access the internet and that it requires computer skill means many Jua Kali artisans do not feel confident in accessing the system.

It was also discovered that some producers are experienced in the production of customized shows, whereby applications to interpret shows to African languages are being used. However, for many reasons they do not consider making Jua Kali development content for innovation. For instance, the use of the vernacular is becoming more and more popular. But few media producers are willing to become that unconventional because it is perceived as expensive and it is easier to produce for known media houses as opposed to producing for personalized dissemination of content. This was as raised by producer AO3

> A03: I think production comes at a cost of whether I will work in creating a script written in luo? Or will I be shooting and editing from what has already been learned. So I think those are the pros and cons of why I should create something that is more away from the norm. In that, I will not focus on content on television, but content that can be featured in Whatsap Facebook and if it will feature on TV, I will go to a channel that is easily accessed and learned from, but more and more I see this happening. Over the holidays I saw a friend translating golden bells to Luo and creating an app for it. As I go to church everyone has a bible app, but they still carry the golden bells. So I wondered you have an app, why don't you just use the app, so I think more and more we are seeing technology, especially media technology coming up but the challenge is making it easy to use. I propose

> the use of the vernacular, even in the language that makes it easy to use digital content.

Additionally, it was realized that producers are not able to directly target content to audiences without the reliance of broadcasters. This could be achieved by the use of whatsapp, YouTube and other mobile applications. Unlike in the past now media producers believe that people have interactive media, however, these concepts are still new for the media producers. For instance, people are now able to participate in m-betting, where televised betting shows are fostering interactivity. It is evidence that learning can also be structured in interesting ways that would encourage interactivity, however much is still being learned on how this concept can be made a reality. This was as depicted by media producer AO4 who was probed about the possibility of creating content in probable format

Respondent A04 adds that

> It is possible to create content for the small audience. There is a guy I know called Jamo, he did a syndicated program of just the issues the local mwananchi kawaida person suffers from. His first stop was doing short videos via phone and uploading them on Facebook. Then he compressed them and put them on Whatsapp where guys would be able to share and wherever, then from then on he uploaded them on YouTube. He didn't have the cash or the expertise, but he just started small and now ventured out into the other station so now it's going to another station and now there are three of four stations that want to record them. So now you can start small for different people even a case point is when you do a production with KBC. KBC may be paying 20 or 50k. Then the next season you go to KBC then the next you go to NBC. So even when I go to advertisers, they will want to see what I have done and what is in it for them. So by just starting small through Facebook, YouTube and all these other small videos and when you make it viral, and you have a backing from local channels then you are able to win advertisers to do what you want.

It was also felt by producer AO3 that the mainstream media were not responsive to market changes as a result, they may face stiff economic competition because they will

not be able to sustain the needs of a diversified audience. Moreover, it was felt that the media did not offer a fair playing field for media producers and paid very little for syndicated programs. The generations of media managers are seen to be lax, only favoring the seasoned media producers or household names. Corruption is rampant in the media houses and film industries. Some shows tend to get more airplay because of the influence of popular producers. Respondent A03 stated

> AO3: you may find it hard to produce a show with a major media house if you're not a household name where you can demand, people like Alison or the rest can go to NTV or wherever and demand I want this particular amount of money for production and they are given. There are people like Alison, Ben Kitero, Bob Nyanja. These are people who have made their mark, these are people who have strived to make the mark and have made it their own way. People like Bob Nyanja you respect them for who they are. People like Alison they overlook and say okay, sure here is money do your production. But then they will give you very little particular amount of money.

It was again found that Extra television relations such as sex scandals or even bribery claims are ailing the industry. Producer W01 admits that extra television relations and tribal issues are ailing the industry, to the extent that there is discrimination on who gets into production contracts and funding. Producer P03 cites the issues again of extra television relations where discrimination determines that one gets a role in the production industry on the basis of whom one knows. Such concepts have undermined creativity and determination to create innovative content for Jua Kali artisans.

> W01: Maybe also money, extra relations and the tribalism factor, money is necessary to encourage the great ideas, to visualize the whole thing you want to produce, but it all comes down to money, the production costs maybe there is no money and that's the challenge. It makes people become corrupt in undercutting unfair deals and tenders. Again, people from similar tribal affiliations seem to get more acceptances in the work settings.

Again it was also found by a participant producer that media managers are inclined to producing shows of only the old famous names who have been successful in the industry. It is likely that actors who have been in previous shows will get jobs. It is also likely that because there are extra television relations a show will be left to run even though its ratings go down.

> PO3: Media managers are also inclined to certain names that can work. You know it even goes down to that, so you find a funky actress, but because they have contact with the broadcaster they have to be the star in the show even though the ratings will go down, and the broadcaster keeps running it over and over again because of their sexual relations or extra television relations with the actor or the actress. So that creates the blocks. But for us, who get paid on creativity I think we need that space to think outside the box, to try and keep up with what is happening in Uganda, in Nigeria in Philippines and the US, you need to try and keep up because we know we spend a lot of time trying to unearth that, so we know, but there is the ceiling of broadcast that is always there that is why you are seeing many creative trying to end that.

Intellectual theft is also a serious problem. It was discussed that if the main broadcasters were open to creativity, fresh ideas that are not affiliated to certain broadcasting houses, then audiences such as the Jua Kali engineers would have content to watch. This issue of intellectual theft is seen to create an obstacle to creativity. Again the media manager's attitude of only going to shows with perceived popularity is also seen as a danger to providing content to audiences such as engineering Jua Kali artisans. This is as shown by Media Producer E01 PO3 and A03 below.

Producer E01 ascertains that the issue is of lazy television managers who do little or no research in programming. Therefore, they are tempted to take short cuts that lead them to producing only content that seems to have worked in the market before. This seems to bring in little or no growth in the industry at all. When producers, contribute and work very hard to produce content, it is likely that through botched deals, the intellectual work

of an author or producer will be stolen when the programs are rejected, but the shows are recreated in other similar replicas of shows that were meant to for the producers.

> E01: So now the biggest problem is you have all these people, TV managers who are inclined to certain content because it has worked before and they are not crazy enough to accept new ideas that are coming up. We can tell you about how we have seen pilots which don't go far, because there is a cap put by broadcasters, that they say this cannot go on air and when your idea is good they know someone else who can do that, so they slide them the DVD and say si ufanye hi because huyo msee alifanya hii. (Could you produce this program because that guy wanted to do it). So that idea can run, but it does not run to its fullest because Joseph, who had the full idea had a vision that it could run for longer. But because of intellectual theft, you find this copycat of a show can only run for a year and a half because of the decision being put at the beginning. So that ceiling constantly creates a creative block for us...

Again producer PO3 is pointing to the idea that media managers are quick to disappoint and tell producers that their productions are not only good enough to steal the ideas to build cheaper productions. This is the case where media productions are directed to cheaper producers and quality is compromised. So one of the problems faced is that ideas are not likely to run to their fullest because the original people who came up with the ideas were not included in the running of the shows.

> PO3: Media managers are quick to disappoint and tell producers that their productions are not good enough. They cunningly give the unfinished productions to cheaper production companies that are likely to produce the same concepts cheaply. So the problem is that these ideas are not likely to run to their fullest because the original people who came up with the ideas were not included in the running of the show. Therefore the programs end up being pulled off because they are seen unsatisfactory to audiences.

Further, it was also discovered that the producers are underfunded in producing the necessary productions. For instance a show of 10million Kenya shillings was substituted with a production of a 100,000 ksh. Meaning the productions are of a much poorer quality and they did not cover the scope of expertise that any audience would be seeking.

It was also found that there were cultures that were counterproductive. For instance television managers invest very little research. They are only inclined to give consent to the airing of certain genres on the basis that it has worked before. In other words, they are not willing to try new concepts because they like what has worked before these concepts usually do not go far because there are obstacles that deter them. For instance media respondent A04 and A03 said:

Respondent A04 also contributes by stating:

> I think lately guys have been lax, but that generation is being wiped out, they do not want change. You bring in a certain production and you want 10,000,000ksh they tell you we cannot do a ten million production. The best we can do is 100 000ksh, they do more level play production.

Media producer AO3 also contributed to the issue of funding

> AO3: So you approach a network or a TV and tell them we have these programs that we want you to fund. So they tell you, what you have done on paper is good, but we need to see a pilot. So you and your broke friends, you sit down and take Your two, three shillings that you have and shoot a pilot, which is actually very expensive. And that person out there who has made it in the industry tells you that if you make a pilot it really helps, but that's the biggest lie ever! Because you can make a pilot and it just sits there. So you take your pilot to them, they may not even listen to it or like it. So they don't even like it, they will throw you out of the window, sometimes this is what even most happens is after you have gone and presented it to them the next time you hear that someone has taken it up. You see, the show on TV and you were not even aware that this was happening.

Lastly the issues of media structure were a hindrance to production. The media houses are run by old policies and media structures that have never been revised. They do not encourage change in the media. Old policies limit media transactions. They cause unadaptability towards the ever fragmenting audiences. Media shows like those targeting Jua Kali engineers are seen to be discouraged because they are tailored to niche audiences. The issues are as depicted by the media respondents who were interviewed.

They try to explain why Jua Kali artisans may not be able to access content. Media producer, Respondent R02 also explained:

> R02: Personally, it is very hard to change a structure that is why when we have duplications of TV stations they still remain with the same structure, so moving forward, once you have made a structure you can't back on it. Again it's connected to the concept of the whole digital television yes, that now because we have a new system, it's like turning a huge old ship, it takes a long time before you make sure that you are at pure with the world but you will notice that there are some people whose whole focus is soccer and that one you can look into that, let me give you the aspect of a consumer, in a restaurant you come you want to watch soccer, you only watch it during that time so you find that it is applicable only on entertainment spots, lets come to a different setting like a house. You will definitely want something for a common mwananchi to start off with investments and all that. Now the trick is with major television stations like the one you have said Jua Kali shows, they focus a lot with the production costs, now production costs come with rights, and rights means that there is some certain strategy and certain income that both the production house and the sponsors are getting out of it, yet we have weak structures. The weak structures mean stations cannot adopt to niche audiences

The findings further revealed that the producers were not able to think futuristically. For instance, in talking on adaptations that make programmes more accessible and adopting genres that are more current as well as encouraging the intellectual growth of audiences. Conclusively, produce A04 states that if producers were able to think futuristically then production would be seen as a much easier process. Where ideas would be bought easily and also it would mean that gratification would be found among Jua Kali artisans. So there is need to encourage media producers to take charge in creating content without the fear that content will not be watched. This was as depicted by producer AO4 below:

Respondent A04 states:

> A major challenge is to think futuristically, I think for instance on a mobile phone platform, we have to be futuristic, where you have to watch the video on mobile phone, you have to stream, download it, watch it, that means you need bandwidth airtime and credit, to them accessibility to that, will be more less limited. The question would be do I want to put food or I want to invest in a mobile and download videos on that. But still on the flipside, we can be able to

> create a production, where they can identify and enjoy content that is linked to the work Jua kali artisans do, they will go on greater lengths to subscribe and they may even want to hear and see more about that…

5.3 Discussion

Various challenges have been cited by media producers, which perhaps could hamper the use of the digital platform. Media producers E01 and P03 in the findings, accused media managers of being unable to take on new ideas apart from those that have worked. The ideal is far from the reality as depicted by Debret (2009) pg 59 in the literature review section. Debret (2009), views that the digital television landscape is changed and that it will need greater efforts in terms of resources and ensuring that new ideas are incorporated into the digital television platform.

The results indicated that engineering Jua Kali artisans found it difficult to locate work related content and this could have hampered how much they could use the digital television platform to innovate. It was also found among engineering Jua Kali artisans that ignorance or misconceptions about internet use among Jua Kali artisans could hamper effective use. This coincides with literature reviewed. Wangare (2015) found that there are informal knowledge management practices among the Jua Kali. Results suggested that Jua Kali mediums for information included exhibitions, workshops and seminars that typify channels through which new ideas are disseminated to Jua Kali artisans. Knowledge sharing is characterized by drawing sketches and modeling, while Knowledge preservation is largely defined by photography. Knowledge retention and protection were however found to be uncharacteristic of the Jua Kali sector (Wangare, 2015). It is evident that low media usage in knowledge management could be a factor

that affects Jua Kali artisan's ability to access relevant information for innovation. If media was used accurately, It could change how Jua Kali artisans retain and protect knowledge. The researcher therefore feels that Jua Kali artisans would be at the high end of innovation, if content on past prosperous and failed endeavors was available to them in the form they can easily understand and preferably through a medium of choice.

Again it was established by the researcher that engineering Jua Kali artisans suggested that the innovation shows were considered difficult to access because of factors such as time and the programs needed a flat fee to watch or pay per view. This finding agrees with Soares and Viana (2014) view. As explained in the literature review.

For instance, Soares & Viana, (2014) discuss that the proliferation of video programs provided by television and telecom operators, although contributing to attracting new customers to these services does also raise some difficulties to the viewer on the selection, from the available assets, of the content of his/her interest. The traditional tools for television content search, the Electronic Program Guides (EPGs), do not efficiently meet the viewer's needs. These guides provide extensive lists of television programs that require the user to spend too much time in order to find a program of potential interest. A similar situation occurs in Video on Demand systems (VoD), where the search functionalities are usually pretty limited. Overloaded with a lot of programs, many viewers systematically give up watching a program and tend to zap between different channels or always watch the same shows or channels (Soares & Viana, 2014). This could be a major reason why Jua Kali artisans have a challenge in access of content. The

reason could be that there are a few videos on demand systems. This is where the search functionalities are very limited. It is therefore likely that engineering Jua Kali audiences are more likely to think that there is a lot of content to watch however they end up being tourists who move from one channel to another without having a particular show that they enjoy watching.

The issues of funding also mentioned by producers and participants A03, A04 and P03, It is not only a problem in africa but also in the west. This finding is in agreement with Yun & Daldier (2013) in pg 87 of the literature review. They state that the trend in Africa has been about switching over, but because, the newest television equipment requires investing enormous funds, African countries are relying on foreign companies to operate the digital television market expanding in the whole continent. The reality is that, with exception of northern Africa, most countries do not have the capacity to invest in their own Digital television system. Hence, most African countries, especially sub-Saharan countries, the migration from analogue to digital will depend on foreign or private investment funds, such as the example of some Eastern Africa countries, where the Chinese company Startimes (Star Media) operate. Other entrants to this market include the French canal+ and the South African DStv (Yun & Daldier, 2013)

However, all is not lost in the sub-Saharan Africa countries because of private foreign funds dependency. It might not be easy to implement the desired system on time, and more unfortunately, there may not be proper studies conducted on the basic system design prior to the detail design that will lead to implementing the final system, as people will

just rush to meet the defined switchover deadline. Here we hesitate to observe that some might not meet the deadline. Also, if the proper signal coverage is not closely studied, some areas may be cut from the world and there could be inconveniences caused, thus a simulcast period is definitely a must, as people should have the time to readjust, by changing their old conventional television into a new type that could connect to audio and video cables from a newly affordable set top box (Yun & Daldier, 2013).

The issues of tribalism and bribery have also been cited by participant producer W01 and P03 as probable causes deterring creativity and growth in production. Subsequently producer W01 and P03's findings agree with the literature reviewed on page 81 that In Africa ICT Infrastructure and use of ICT in Education goes hand in hand with the development of rail, road and air transport which in most cases is limited. This infrastructure is needed to implement and support ICT infrastructure, as well as the increased social and economic activity that is stimulated. Many tax regimes in the African continent define computers and cellular phones as luxury items, which adds to the price of these goods especially as the vast majority must be imported. Lack of skills together with the problem of brain drain and corruption also make widespread adoption of new technology difficult. All of the above issues are further complicated by a business climate that encourages investment in Africa through large multinational companies rather than in ways that might be more beneficial to the continent (Butcher, 2003).

The internet was also considered too sophisticated and too challenging for Jua Kali artisans' use. It was also found that mainstream media find it difficult to cope with the

ever fragmenting audiences. It is at this point that the implications of not understanding the digital television platform can be seen. The findings are also illustrated by internet world statistics (2008) reviewed from the literature. They show that strikingly, only 5% of Africans use the Internet. These numbers do not support a picture of a global television downloading public. Additionally, mode of Internet access would be important to consider. In Africa, most Internet access occurs in public settings such as Internet cafes, with mobile and broadband infrastructure being “negligible.” Geography also helps structure this context, with coastal countries' access to undersea fiber optic cables, affording greater bandwidth that might be needed to access Real-time or Windows-based videos, let alone Bit Torrent files (Internet World Statistics, 2008).

5.4 Summary

This chapter presented the findings of the second objective of understanding the challenges and efforts are in place to produce edutainment content for Jua Kali niche groups in the engineering fields? In order for the researcher to understand what hampers the use of digital television platform, there was need to discuss the reasons why Jua Kali artisans found it difficult to access content from the digital television platform.

It was also necessary to understand what the experience of media producers was like in producing content for specific audiences and how similar challenges could hamper the access and production of innovative content. It was also necessary to

understand what efforts are already in place that could assist in overcoming the obstacles of using the digital television platform.

Subsequently, a discussion was held to give an understanding of where the finding agrees or disagrees with it. The results indicated that Jua Kali artisans found it difficult to locate work related content and this could have hampered how much they could use the digital television platform to innovate. The shows were considered difficult to access because of factors such as time and the programs needed a flat fee to watch or pay per view. The other issue is that of ignorance or misconceptions about internet use among Jua Kali artisans that could hamper effective use. Producers also cited issues that can hinder the production of necessary as: funding, a poor policy structure that leads to a poor business environment as well as tribalism and nepotism as opposed to professionalism and quality.

CHAPTER SIX

THE KENYA DIGITAL TELEVISION CONTENT PRODUCTION AND ACCECIBILITY

6.0 Introduction

This chapter presents the findings of the third objective which sought to find out how accessible to engineering Jua Kali artisans in Kenya is engineering content from the digital television platform. The objective was archived by establishing the time of access the engineering Jua Kali artisans accessed content from the digital television platform. The objective was also archived by trying to understand how the Jua Kali artisans accessed the content from the digital television platform. Apart from this, media producers and Jua Kali artisans were probed on their understanding of the digital television platform. It was also necessary to probe on the various opportunities the digital television platform offers to both Jua Kali artisans and media producers in consideration of the roles they both play in the digital television platform. The chapter also tackles the question of the digital television terrain by trying to understand what it would take to produce content for Jua Kali artisans. Additionally, it establishes the issues of production for Jua Kali artisans as niche audiences and changes that may be effected to make the digital television platform promote innovation. These issues were probed through the use of interview schedules and questionnaires. Lastly, literature was compared to the findings to establish what has been seen to be theoretically correct.

Item seven in the questionnaire sought to establish the time the respondents accessed the programs from the digital television platform channels as a starting point of understanding the digital terrain. This was as show in figure 5 below.

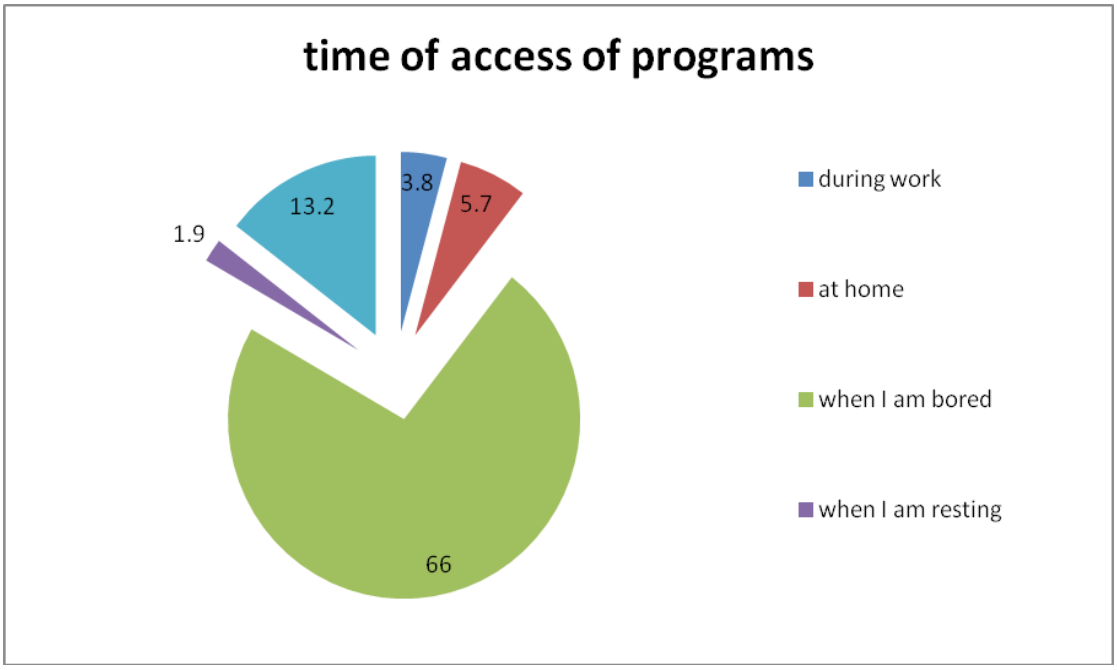

Figure 6.1 Time of access of programs

It was recorded that only 17% of the respondents accessed the programs on the digital television platform during work and when they needed to look for information on how to do something. 71.7% of them accessed the digital television programs either at home or when bored. Only 1.9% accesses the programs on the digital television platform when resting. The results show that the digital television concept is mostly considered as a news information tool or entertainment tool rather than a reference tool that can assist in innovation through figurative means such as YouTube or other forms of videos that can assist during work related activities.

The findings from the face to face interview by participant M03 and E03 are indicative that some Jua Kali engineering artisans already have computers at home. They use them to check for solutions. It can therefore be argued that it is no longer a strange concept for Jua Kali engineering artisans to access information through computers. The respondents also indicate that the way Jua Kali artisans get information is by asking around from their peers. Jua Kali participant E03 stated:

> E03: I usually interact with these things when I find my work challenging. However, I know it can be hard. These are concepts that I have had to teach myself over time and also understand from my peers.

Additionally, the findings are indicative that the internet and digital television are inseparable concepts that need to be explored and that the people can be self-taught on the uses of the internet and the digital television. it was suggested by a participant suggests that people need to be sensitized on the use of the digital television during work as opposed to using it only when bored or at home. Respondent M03 from the interview was asked when they accessed content and stated that:

> M03: I have a computer right here in my workplace, every time I get a problem I get to check on how to solve it. I just go to the back office and I check for solutions. My friends introduced me to the concept of the internet, because every time I had an issue, I would go back to them to ask them what exactly I could do in difficult repair situations. So they encouraged me to have ways to access internet for quick and easy solutions. It would be great if Jua Kali artisans like me would be encouraged to look for solutions from the internet.

6.1 Understanding the Digital Platform and the Opportunities it Offers from Media Producers' Perspective

I sought to ask media producers what they understood about the digital television platform. This was important for gauging whether they knew the opportunities that the digital television platform had to offer. The findings from media producer A02 below could mean that digital television is understood as access to very good quality material from media producers. It is also supposed to act as a substitute for those who are not able to access information directly from the digital set boxes. Various factors are considered a limitation from digital set boxes such as electronic program guides that limit the choices one can have of what to watch. It is also praised to have so many benefits, but people are yet to see these benefits. Media producer A02 who works in media broadcasting station stated:

> A02 From my observation, digital TV is about access to very good quality material accessible via digital set boxes or internet. The world over is accessing this good quality material through this means. Those who are not able for instance to get content directly from the internet are able to access the information directly from the digital set boxes, however, their options are limited by various factors such as the electronic program guides. For me right now it is a unicorn the one that we have been told it will come and make rainbows. I am yet to see what it can offer, but right now it is a unicorn. We are still waiting for the pot of gold.

The findings generated from participant producer RO2 below is that people now find it easier to access the content that could have never been found easy to access. The concept of bundles, modems and Wi-Fi is now accessible even in matatus. It is cheaper for people to access news and information from all over the world. This was as depicted by participant R02

> R02: One thing I can tell you about the digital television platform is that, it is being made easier for people to access. That's why we have things like bundles, modems come before other things like Wifi, Wifi is now being accessed in matatus, public places such as restaurants. Now the main idea was to make it cheaper for people to access news and information all over the world. That's the main reason for countries to go digital. So that information such as videos, do it yourself content, music, news and educational content can be accessed at any time.

The issue of demographics is also important, because a particular age, economic background and preference can determine how people perceive their experience in the use of the internet. This research has previously suggested that the youth is the people considered tech survey. In this case the findings are coinciding with the idea that young Jua Kali artisans are finding this option more viable. The other idea is the question of where to you sell content that has been produced and who is the competitor when it comes to selling content. The key concept here is that the digital television concept is global and content must be found fit to compete globally. The other revelation is that the digital television platform is giving people more power to choose what to watch. This was again as depicted by producer R02 who works in a media broadcasting station.

> R02: The concept depends with the demographics of people who are actually using the digital television platform. The demographics are segmented in terms of age, economic background and preference because that is what will determine what is going to be viewed on the digital television platform such as from the internet either from the comfort of using phones and television. Even though you want to bring a program as a producer, you have to find out what programs of your nature are there all over the world and who are you competing against. That now brings the question, is your program really valuable as compared to others and is it bringing an interest as compared to the others. So the market is quite big. People have access to information that concerns them. The digital television platform is massive because of that aspect. People have the power of choice, we have a lot of variety of channels you can choose from and you can watch basically what you want every day.

Again the findings imply the producers still know little about the digital platform. However, there is an understanding that for producers, there is free reign of how produced work will be of use. Producers are more likely to have more avenues to sell produced content. They have more bargaining power even globally on selling shows that relate to audiences for more. This means that the film and production business will be highly profitable for producers. This was as depicted by respondent AO3 who stated that

> AO3: I actually know very little about digital television, I have never truly ventured into understanding the digital television concept fully, but the one thing I know is that it is being set apart, that this is a platform where you have free reign of your materials you don't have to be restricted by the moral codes, there is much of the old concept of doing things where people want to be told how things should work, however in my understanding the digital television concept gives you the lee way of being however crazy you can. I think most artists and producers and directors are actually thinking about the digital television concept in general but not intricately. Look at how it is, it is more channels, its more avenues to display content, its more choice for the producer as well as for the audiences, it is safer, it's more everything, compared to how things have been running before. This is a platform where you have a chance to showcase yourself, in other words, one is able to say, I have content and this is how much I will sell it for because there are so many other avenues of showing it. The producers have more bargaining power, and viewers have more power to choose what to watch. The content broadcasters keep needing information to air, you can actually look into it, before it was we need this we can give you that, there was not much negotiation, there was no such terms like we can negotiate with the media producers.

Again the findings point to the idea that people are still on a learning curve, most producers only make content that can be bought by pay television stations. Again the cost of production is expensive because people are supporting pirated international content more than the local content which would sell for so much more. Conclusively, the findings show that media producers are yet to understand the digital television platform to its fullness. This was as depicted by respondent A04

> A04: People are still learning, we are still on a learning curve. Cos we have many TVs coming up and when we look at different situations like Mnet, Zuku, Star times, they are paying substantially well as compared to the main media houses. That is in itself a competition. So you find that most people are not doing a production, to get to our local station but to these pay TV channels. Like recently Netflix launches in Kenya that is a new avenue to pump in new productions. We are still on a learning curve we are not yet there. So have international content affected your market. Yeah, it actually affects a lot. Because I would want to do a production, I would want to do a feature film. I would want to do a production which I cannot sell for less than 2000 shillings, but a mass produced syndicated or pirated show from the states would be bought for 50shillings. You can buy it and even upgrade it. So most people don't appreciate the local channels can be good.

6.2 Producing Digital Content and the Nature of the Industry

The researcher also sought to understand more about the digital television terrain by trying to understand what inspired the creation of content among media producers and perhaps also understand whether there were aspects about the nature of the industry that could have enhanced production of development content for innovation. The meaning that is highlighted from respondent is that whenever there are ideas any production begins. It is possible to produce content for as long as it has viewership and ideas. A media producer respondent W01 was asked how the production process takes place in the digital television platform for producers. The respondent stated:

> W01: It all starts with ideas, and it depends because if you have ideas then the scripting process begins. If you’re this person who wakes up one day and you have good stories in your mind, then you can be a writer, and you can always do stories dealing with everyone. That’s where it all starts from the writers having the idea and then the script is put together, at times with a team through brainstorming and finally to the quiet process of producing an episode at a time. One can now shoot because they have a story. So yeah, you can as a director be a writer, you can do many things, so ideas doesn’t mean that it is enough to just go to the field and shoot, if you indeed good, you share ideas, you put what you’re thinking to the light and make sure the rest of the production team is willing to carry the idea until it sees the light of day

Another respondent was asked how production happens in the first place said, according to E01 ideas come first before a production begin, people share ideas. These ideas tend to inspire the type of production that will be produced. The ideas are what a producer will work with to create a film or a documentary project. At times ideas come from the client, this time for instance the client can be the Jua Kali niche audience. Moreover, it has been found that producers can be found in various agencies. For now the producer E01 has just produced any kind of content that is likely to sell and bring revenue to his agency.

> E01: I think ideas come first and from different places, they have to be from very creative people. These people share ideas with some of us and they say you know you should come we do this, come we do that. Other ideas come from somebody, from cultures, for instance the culture of photographers, where they travel the country and they see the goats of Garrisa, mountains of Africa, you know whatever is fine. That's another place where ideas come from… So for us the unknown is broadcasting the digital content for who knows what tomorrow will ask you to produce or the day after will bring. We can have TV stations broadcasting from our bedrooms or something someday, but until then, we are just creating content in the digital platform or the online platform for whatever ideas come first. Whatever platform, there is

Media producers believe that research is a necessary component in understanding the kind of content that can be shared with Jua Kali artisans. It would be important to understand Jua Kali engineering artisan's language, behavior and how they can access their content including understanding the concept of time. The findings also indicate that engineering Jua Kali artisans would enjoy simple to understand, easy to find content that is also cheap to produce. Producer W01 below states that the niche group audiences must be subjected to research. This will assist understanding the audiences. It will also assist producers in making content that is useful to the Jua Kali engineers. Again, the content

will be created in a language that is well understood and through research the content can be made more accessible by sharing it at the desired time.

> W01: To start with, maybe we could learn more about them, the niche group audience called the Jua Kali artisans. Their demographic must be well understood. Their modes of communication for instance must be understood, because if these people began to understand the language, then the production work would be more targeted towards them, so it is important to learn how they speak. If you use a language far from what they are used to, then they will not get that the content that is targeted for them or that we want to sell to them, so then diversifying the kind of language that is used in the shows will bring clarity. The time also that these programs can be accessed matters a lot. Can the time these people will watch the programs targeted for them be appropriate, the timing may be like when they are from their Jua Kali work during the day, Jioni (in the evening) they are coming to watch TV, the timing also for the shows to be aired really matters. It also matters that the content is directly related and helpful to the different viewing needs of all these Jua Kali artisans, that means there is more money needed, more content expertise and more time needed for planning and creation of such content

Another major reason for research as raised by media producer respondent E01 is that the country is in transition, and not much was done to understand how the digital television platform was implemented. The television stations seem to be churning content, but are yet to know how to target millions of a fragmented audience. The culture should be to encourage the use of social media platforms as well as other internet services because of their ability to allow direct contact and interactivity with audiences. The producer points that in today's era, people are already sharing content because of social media interactivity. Social media groups allow for audience targeting for content sharing. This perhaps means that with a better understanding of the digital television system, content can be shared in a more accessible and convincing format. Therefore, it was also necessary to find out the general attitude from media producers towards making content for Jua Kali artisans and even understand the type of genre. Producer E01 below mentioned that:

> E01: Well, now it is interesting, because our country is in that transition, we have just moved to digital officially as the whole country, so we have all these TV stations that are churning content left right center but majority of them have not found that solid way to work with millions of different viewers. The culture has already started in that people are now encouraged to go into the internet, Facebook, YouTube and Whatsap so the thing about the internet is that it is much diversified and it can be narrowed down for use. Say for example, something like whatsap on the phone, so you find every chama (investment group) has a whatsap group. Every production house has a whatsap group, everywhere you go probably even the presence or republic has a whatsap group because they share a common trend, because they share a common material. So you find material jumping from one group to the other depending with the interest of the group. So that is one way that is very particular that could work very well. It is where we produce content to make sure it can be captured by sharing among specific audiences. Before TV gets its footing, because television Is restricted by time and as we said earlier they have to decide to watch when the station decides to show.

Producer A04 also gives a perspective of a producer who went ahead to create content for a niche audience. Through the creation of compressed videos that could be shared through the whatsap channel. Audiences could be able to share the content and the producer was seen to producer with meager resources. Therefore, social media is encouraging the production of cheaper and easier shared content. It was cited that when the producer went to mainstream media, it was easy to find advertisers because his videos had an audience. These issues are as raised by media producer respondent A04 who adds that

> A04: It is possible to create content for the small audience. There is a guy I know called Jamo, he did a syndicated program of just the issues the local mwananchi kawaida person suffers with. His first stop was doing short videos via phone and uploading them on Facebook. Then he compressed them and put them on whatsap where guys would be able to share and wherever, then from then on he uploaded them on YouTube. He didn't have the cash or the expertise, but he just started small and now ventured out into the other station so now it's going to another station and now there are three of four stations that want to record them. So now you can start small for different people even a case point is when you do a production with KBC. KBC may be paying 20 or 50k. Then the next season you go to KBC then the next you go to NBC. So even when I go to advertisers, they will want to see what I have done and what is in it for them. So by just starting

> small through Facebook, YouTube and all these other small videos and when you make it viral, and you have a backing from local channels then you are able to win advertisers to do what you want.

Respondent A03 below also gives an example about the household names like Kansime which were first and foremost YouTube sensations that worked with niche audiences. It is through such avenues that programs are seen useful to the extent mainstream media buys the producer's content. Again the respondent seems to validate the idea that if content is produced for a specific audience through social media platforms, then there is a better chance that the content will be found accessible and useful. Again the use of social media has been seen to create a fan base in a country like Uganda and now it creates the idea that a producer can be able to sell content even outside the boarders.

> A03: Like Kansime started from the streets, then she did theater, then she made videos, and all of a sudden she found herself doing You Tube. She did not go to anyone people started to look for her. So with Jua Kali, one production can get a following and people look for your content because of its educational nature. So it takes time, yes, but yes, it's possible, but you also find fans, by nature this is from when you started and the fans become diehard fans.

6.3 Opportunities that the digital television platform has to offer

The respondents were also asked about the opportunities that they thought the digital television platform brought. It was found that people perceive that there will be more need for more content. That person will need more access to programs. The advertising structure is also believed that it will change with time. The digital television platform is likely to be viewed as an unpredictable concept even though people have different ideas about the phenomenon. This is as shown by media producer respondent A04 below who states that, there is hope that the digital television platform will create the need to ask for more content among audiences. That person will ask for more content to be shown.

This is a great opportunity for producers to produce and make profits. However the respondent cites that there is little information on how this kind of movement will happen. The producer also cites that the reason behind this movement not happening is because, the digital television in Kenya is yet to be understood or has not been understood fully by everyone in the country. The digital television platform will mean that even media houses will need to churn out a lot of content for all the different audiences in order to make profit. Therefore the digital television is not working out all its functions as required. A04 depicts this issue below.

> A04: I am actually hopeful in terms of the need for content. That people will ask for more content to be shown. The digital migration will definitely bring more channels and more programs. It is just that there is little information on how this will happen. That inasmuch as it just picked up last year, or it just started last year we expect to rip the benefits, but I know in the long term, there will be a need for more content, because we need to have sustainability. It will not be sustainable for an entire station, bringing such little content. They will be under selling. They will be getting less money in advertising, less audiences engaging with an entire platform and quietly losing out on much of the money they would have earned. We need to launch us into the deep to get adverts and fewer channels and then we would not have advertisers if we don't have good credible programs to hook up advertisers. So I know it's just that we are in a sitting time bomb it will be for more content and for different people which is for you to get money.

Another finding is that the media producers have not yet explored all of the opportunities that need to be exploited. If there was more production of credible programs, then advertising would make content production profitable. So it's a matter of time when the digital television platform will be good not only to access more content for diversified groups but also bring in more money for many producers. E01 depicts this by stating that:

> E01: We need to launch ourselves into the deep to get more content and more channels and then we can have advertisers if we have good credible programs to hook up advertisers. So I know it is just that we are in a sitting time bomb, the

> digital television platform will be good for more accessible content and for a more diversified group which is likely to bring in more money.

Producer A02 below also implies that now audiences, including Jua Kali engineers can access digital content from whichever place or situation they are in. For instance with the advent of digital television, as long as you have a set box or even a phone or maybe a dvd player, then you can have access to digital content. However the concept is yet to be fully tested. The jua Kali engineer innovative content should be tested to ensure that it creates the necessary understanding and entertainment demanded for. Another challenge is to understand how the stations will benefit or how producers will benefit. Producer A02 explained that:

> AO2: Set boxes are supposed to bridge the digital divide because not everyone can access digital TV. So with set boxes people are able to view digital content. People who don't have internet or access digital TV can now access digital content for the question you posed on Jua Kalis, from my experience a concept has to be tested before its put out in the field. So you cannot put a concept out there without just testing. It has to be tested for some years before putting it out in the field. Because it is not just viewership involved here we have to look at the monetary aspect if we are to benefit from it. We have to know how the station will benefit and we cannot put anything out there if we are not going to benefit from it.

Producer E01 also adds that the digital television system is also characterized by the ability to store content for future reference. For instance, a Jua Kali producer is able to access content over and over again at their own time. The internet provides this kind of reference tool as a resource. Again various technological devices become useful in giving a reference tool. The producer also felt that better timing can be provided for Jua Kali artisans. This seems to coincide with the views that various media producers gave. That a suitable day could be chosen for the broadcast of content useful to Jua Kali innovation, or

an entire channel in the digital television platform dedicated to the broadcast of the innovation content. Production would also best be tailored to the language Jua Kali artisans speak in. This way content will not only be understandable, but also captivating for the Jua Kali engineer audiences. This was as prescribed by producer E01:

> EO1: I don't know what will happen when the Jua Kali artisans is on lunch break and he wants to picture a ten minute video or when he wants a particular problem that he saw on a certain video and he wants to revisit it again because it's like sleeping through a book, so television does not give you that freedom yet. But the internet does because you can save all these short videos on your phone and you can quickly go on YouTube and watch again and the surprising thing is, in the years past the Jua Kali people were not as close to the internet as they are now. They are very exposed; they just don't know what content to access. I even sure like my grandmother has Whatsap it means she has found interest in it, and Jua kali people have found interesting, every mechanic has a time where he can access Whatsap. So if there was a need for them to buy a phone with internet, and have maybe two GB memory, and above so that they can save ten to twenty videos they would go out of their way to get that because it does make their life easier.

Media producer respondent A04 also offers a perspective on the opportunities that the digital television platform stood to offer. According to the respondent, the use of vernacular in digital television content is a major opportunity in the digital television platform is offering. This is the possibility of ensuring that people regardless of literacy can access video content that they can hear and learn from in their vernacular language. This means that a missing link has been formed. This is as shown by media respondent A04 below

> A04: Use of vernacular has helped a lot, a few days ago I was watching citizen TV, Inoro, they give you a picture of two people, this woman who is milking a cow and then they give you a story of maybe how a few years down the line of how the transformation has been through her listening to that local production. Then we have a farmer, a guy operating a motor bike. We have changed in all these different people who are being shown to enjoy content in the vernacular. Three years ago you could not get shown in Luo, Luhya Kamba or whatever, but more and more you now find that they are being done in all those other local dialects. For me the missing link that was there has been formed. This shows the

> media's ability to transform people in their local settings and for people to relate to local content. Before people like capital, at some point it was so big because everyone would listen because it was the niche. Anyone from anywhere feels connected. My father is listening and watching his Inoro song, my mother Kameme TV, and myself capital TV.

The concept of television guides is also seen as a way that content has been made more relevant and more so it bridges the gap by bringing viewers closer. The use of the digital television platform is also seen to create practical and tangible ways for accessing content. The content can be accessed through guides that tell Jua Kali artisans which shows they would be interested in and what shows are available. This is how content can be diverted to different users as explained by A03 below

> A03: Using certain television guides, certain phone applications, certain TV guides that are already in existence, it is much more possible to bring the content closer to people and to help viewers' access useful content. The content is mostly recommended to viewers.

6.4 Providing sponsorship and the advertising concept in the digital television platform

A major problem that affects media producers is to understand how profits can be increased. This is seen as a motivator to producing development programs for innovation. The finding established by media producer AO4 and AO3 was that through partnerships with organizations, sponsorships could be created to allow Jua Kali artisans to access useful information and also training could be offered to the Jua Kali artisans. The concept of advertising would be encouraged, whereby organizations endorse certain shows for these Jua Kali engineer audiences. These endorsements can lead to the increased funding

and viewership that can nature innovations. The key idea that A04 below advocates for is the concept of media producers, pushing for the endorsement of content by creating partnerships that would mean, more of the company products are bought as more products are advertised through the viewership of innovative content and media producers are able to get funding for their shows. This was as depicted by media producer AO4, who stated

> AO4: Toyota Company makes cars, beautiful cars, so when your car is damaged, you have to rush it to Toyota Kenya. Ideally you are a producer who is working with audiences like your mechanics who are from Kisumu, how about linking Jua Kali engineer artisans with companies like Toyota who would not mind training such people as part of encouraging innovation in the country. Any such prospects, allow the possibility of the making, development innovative content, so that both media producers and Jua kali artisans together with corporate organizations can benefit whereby if you are going to sponsor such a show, you need the Jua kali to have a platform they could look at and media producers can access funding through endorsements of programs in the shows they produce.

Respondent A03 below gives a different perspective that the use of social media sites can be of use to sell concepts when videos go viral. The concept is such that, when development content is viewed by many people, then it could attract online advertising which would be sustained for online media producers. Also in the spirit of access to content, A03 advocates for the access to content from social sites. He also discusses how content can be paid by Google when you pitch to an advertiser, and this could encourage the access of content which would encourage viewership and advertising.

Respondent A03 perspective was:

> A03: There are social sites that people can sell concepts to. If your videos go viral, when you put it on you tube and then if you get more than a thousand hits, you would actually be paid by Google. When you pitch to an advertiser, the first thing they will want is my social media perspective, how many social followers on twitter, and how many Facebook followers, how many times some videos are

> being watched and shared. These are some more of the unconventional ways today that are encouraging the growth of unconventional productions.

It was also discussed by producer E01 below that money can be generated through commercials. An appropriate strategy is the encouragement of product placement. Product placement is where you get an advertiser who is willing for the producers to use some of the advertised products on the show. In this case if the engineers are going to show how an engine works, then the advertiser who might be the company robs magic may agree to use robs magic rims on the vehicle being used in the show. Again the respondent also talks about being paid directly by advertisers to have their products used in your show. Respondent E01 examined that:

> E01 In terms of commercials and also you can do product placement. Robs magic rims can run on the show, mechanics can talk about how robs magic rims are good, more just like testimonials, but you have covered it as entertainment, but you have a pay check pushed into the show so you can push certain brands in certain directions. Or you can do a cooking show and this amazing chef that people love is cooking with Kimbo, even though he doesn't talk about the Kimbo the idea is growing with his wives. That makes money for the TV show. The TV show generates money for the production company which employs tones of people and the same breadth it creates money for the television station because of commercials running during the commercial break.

Additionally, it was discussed that respondent R02 below suggest that production can be supported by advertising. The respondent raises that producers will be willing to work on their own and look for sponsors privately who can assist in ensuring that the show is produced and published. Again, this would mean that the sponsor caters for the production and sponsoring of the show through individual sponsorship. The other idea is when you sell the show directly to the media station that in turn uses the show to attract advertisers. This is as shown by Media respondent R02

Respondent R02 stated:

> There are two ways to this concept of production for Jua kali artisans and advertising that can support production, there are what we call producers who work on their own, who look for sponsors so that they can work a show together. That means they will be able to run a show so that you can be able to sponsor the run, and edit activities and broadcast of the show through individual sponsorship. Now we also have what we take to the television stations, and the question is how is the tv station gaining? Can they be able to put their own sponsorships on the same program, so it's something that has to be discussed at that level and one thing I can tell you is that, it's not always possible that you can get the sponsors that you want because those sponsors also have plans, sales agents and personnel who are looking at whether the shows are selling in the market and at what margin.

6.5 Changes to Effect in Making the Digital Television Platform Work Efficiently

Various changes can be effected to produce better and more provocative content for Jua Kali audiences. The key concept is in structuring, media training institutions to work with media producers in maximizing practicality in the curriculum. There is also need to create media production guilds that can encourage the lobbying of appropriate policy that allow for the production of innovative content and help curb malpractice in the industry this was advised by respondent E01 who explained:

> We need to invest in good institutions, people go to local schools, but they still come out with this blank face, they would have rather combined that school fees and go to India or US for six months. They could have gotten that knowledge quarter the time. We need to maximize in practicality. Seventy percent of the theory does not apply to the production set, we need good institutions and good lectures and maximize a lot and if theory applies it changes tomorrow, so what is the reality today, tomorrow is a fallacy, so the knowledge that is current so we need more practical experience, you can learn about a million cameras but if you cannot hold one, it doesn't help you. Then we need to create film associations, guilds with that it creates order. Look at all the film industries in the world they have associations, guilds where you lobby the world. The Indians, the Germanys, the US they have guilds that can lobby for policy and this is helping.

Again, another key issue was cited as to how production can be encouraged. For instance, producer A01 suggested that if a policy such as the one on zero rating is implemented. It is necessary to train tax officials on what they should avoid taxing. This means that

producers will find the equipment more affordable. Again the producer believes that media guilds or associations will encourage standardization of media production equipment in the country. Again government policies will be implemented to bring in award ceremonies to encourage the development of innovative content. The government is also encouraged to sensitize media producers' to access this viable means of production and additionally, issues to do with licensing should be made affordable to ensure that any producer can make film content in any location. This is as depicted by A01.

> A01: For example, there was a policy that was passed for five years ago when Kalonzo was vice president about Shipping in film equipment duty free, KRA people don't even know what a film equipment is leave alone, emphasizing what a jeep is they don't even know, but when you have an association they can be trained to enable implementation of the zero rated policy of importation. The moment they see a camera, they see money so you cannot import cameras. To get cheaper cameras it means they are generic but with associations, you can buy better cameras and they can help you as associations, to make sure whatever you buy is authentic, universal and standardized across the whole country. Government policies can help in managing award ceremonies. They can help in managing say for example Licenses. You have an association you can train people and lobby to strengthen the film structure.

In summary various challenges have been cited by media producers and how the terrain affects them. First, that perhaps the concept of the internet is considered too sophisticated and too challenging for Jua Kali use. Second, the mainstream media find it difficult to cope with the ever fragmenting audiences. Thirdly, there is a lacking in funding and sponsorship that can assist in the production of innovative content. Also, it is very difficult for the mainstream media to adapt new genres and types of production within institutional policies which mostly encourage traditional media usage. Most media houses have administrative structures and working structures that do not allow or give room for understanding the use of new media. Again most old producers are unable to

adopt new ideas due to ties with traditional media stations. It was also cited that there are tribalism and favoritism in the media industry to the point where it hampers creativity and quality in production as well. There was also a missing link in the training of media producers on current trends in production again, there were issues in the formation and making of policies, especially from enabling stakeholders such as Kenya revenue authority, who are not able to execute zero rated taxation in the film production industry. The system seems to benefit only the old producers, new producers are not able to access facilities or funding easily.

6.6 Discussion

The findings as depicted by participant media producer A03 and R02 on page 181 showed that producers are yet to consider fully other avenues that can be used to sell content. They have not mastered how to diverge content to different audiences through the process of divergence in media production. It was also depicted by the participants A03 and A02 again that new avenues such as the whatsap, Facebook and other computer and mobile applications may be considered for content sharing, however, their fullest potential in using them is yet to be archived. From the literature reviewed in chapter two these findings are validated by Roscoe (2015), Killborn (2003) and bolter and Grusin (1999).

Roscoe (2015) alludes that Television is in transition. The way television is produced and delivered, as well as how and where it is watched, is changing. Television can no longer be understood as an autonomous medium, but rather as being connected to other screens (Internet, mobile phone) and cultural sites (sports fields, theme parks, sets). It is as much

embedded in public spheres as in domestic ones, and as a consequence the ways in which we engage with television The global television landscape has been radically changed by the success of factual formats, rapid digitization and have also changed. Television programs are no longer produced (or engaged with) in isolation from other media texts, and new viewing practices are emerging (Roscoe 2015).

This transition space is marked by the contradictory forces of convergence, divergence, and dispersal. If we examine production processes, content, and patterns of viewing we can see these discourses in simultaneous operation. On the one hand, we have a convergence of previously discreet and distinct media forms and processes (Lister, Dovey, Giddings, Grant, & Kelly, 2003). Drawn together and combined through digital technologies, such convergence occurs at the level of production, distribution, and in terms of the content styles and modes (Kilborn, 2003; Roscoe & Hight, 2001). At the same time there is convergence in terms of media ownership and a shift toward larger global conglomerates. There is also a greater sense of divergence, with content now delivered in distinct and unique ways to media sites such as the mobile phone and the Internet. There is a proliferation of material generated within media loops of print, broadcast, and telecommunications (Roscoe 2015).

Technological convergence has resulted in content and audience divergence. Content is more dispersed across these platforms, and our engagement with it is more fleeting. Our experience of contemporary media is more fragmented rather than unified or centralized. Instead of our viewing habits being controlled through the “flow” of schedules (Williams,

1974), our viewing is now clustered around events, and through technologies such as personal video recorders, DVDs, and subscription television services. Choice is the buzzword for both broadcasters and audiences. Multi-platform event television sets, up a relationship between producers and audiences that is based on a number of assumptions. Audiences are assumed to be both technologically savvy and knowledgeable about the processes of mediation. So audiences are assumed to understand and use the Internet, e-mail, and mobile phone technologies. They are also assumed to be familiar with traditional televisual codes, and understand how certain formats, re-mediate such conventions (Bolter & Grusin, 1999).

It was also found by the researcher that participant media producers M01 E03 & T01 page 179, felt that Research was not taken seriously in the process of promoting appropriate innovation content. These findings agree with literature reviewed in page 87 of chapter two and hence supporting the findings. Yun and Daldier (2013) expressed that the trend in Africa has been about switching over, but because, the newest television equipment requires investing enormous funds, African countries are relying on foreign companies to operate the digital television market expanding in the whole continent (Yun & Daldier 2013). In addition, African countries were given the shortest time left to meet the then deadline was set on June 17th, 2015 by ITU.

Considering, that as of May 17th, 2013, a number of African countries had been yet to start migrating their television system from analog to digital, this could have definitely plunged Africa to a rush. Therefore may African countries failed to conduct appropriate

studies in the areas of content production and distribution, coverage and market pricing. Analyzing properly the African situation, where choosing the wireless television, including Satellite and terrestrial, over the cable television appears to be wiser. Moreover, some African countries like Rwanda had made progress. For instance, in Rwanda the transition started in 2008, with the opening of the Chinese company Startimes' subsidiary, after receiving the first terrestrial digital TV operating license for pay television services. Comment something about Kenya here I think we have made progress as well (Yun & Daldier 2013).

It was also established quantitatively that a majority of the engineering Jua Kali respondents only accessed the digital television platform mostly when bored. This showed an attitude problem in the use of the digital terrain. This finding agrees with page 34 of literature reviewed where Elihu Katz, Jay Blumler and Michael Gurevitch (1970), explain the expectancy-value formula which determines the gratifications that will be sought by a media user by summing his or her beliefs about what media can provide weighted by one's evaluations of those beliefs (Foss & Littlejohn 2009). Therefore, if Jua kali artisans feel that his/her needs will be fulfilled by a particular media (the believe) he /she is more likely to use the media more because of the gratification it gives and because it continuously goes on to meet the expectancy of the beliefs they have. In this case Jua Kali artisans only believe that the digital television platform can only be used for entertainment when bored.

Palmgreen, however, did identify other variables that enter into one's media consumption behavior. In its most complex form, the theory predicts that media-consumption gratifications are influenced by culture, social institutions, media opportunities, circumstances, personal traits, needs, beliefs and values. In turn, one's beliefs about what media can provide are influenced by the gratifications one experiences by using those media (Foss & Littlejohn, 2009).

6.8 Chapter Summary

This chapter presented the findings of the third objective: To assess whether engineering Jua Kali artisans can easily access engineering content in the digital television platform. The objective question was probed by establishing the time of access the Jua kali artisans accessed content from the digital television platform, it was also necessary to understand how the Jua Kali artisans accessed the content from the digital television platform. Apart from this, media producers and Jua Kali artisans were probed on their understanding of the digital television platform. Probed also were the various opportunities the digital television platform offers to both Jua Kali artisans and media producers in consideration of the roles they both play in the digital television platform. The chapter also tackles the question of what it would take to produce content for Jua Kali artisans. Additionally, it establishes the issues of production for Jua Kali artisans as niche audiences and changes that may be affected to make the digital television platform promote innovation. The data was generating both qualitatively and quantitatively through questionnaires and interview schedules. Lastly, literature is compared to the findings of the study.

The findings indicate that producers are yet to consider fully other avenues that can be used to sell content. They have not mastered how to diverge content to different audiences through the process of divergence in media production. It was also found that new avenues such as the whatsap, Facebook and other computer and mobile applications may be considered for content sharing, however, their fullest potential in using them is yet to be archived. Research was considered a factor to be employed in producing content for Jua Kali artisans. Further, it was found that advertising will always be an adaptable component for as long as the content remains educative and entertaining.

It was established that a majority of the respondents only accessed the digital television platform mostly when bored. This showed an attitude problem in the use of the digital terrain. Consequently, when media producers were asked about what they understood about the digital platform, it was evident that they were still making sense of it. However, the observation was that it is easier now for people to access content because people are slowly gaining the enabling infrastructure such as modems, wifi, and mobile phone gadgets. Moreover, aspects such as use of vernacular are now included in the digital television platform. The most notable changes that could be advanced are the need for revised curricular in media training institutions that cater for skills in production. There is also need to expand policy that allows for the creation of guilds that can lobby for the industry. Lastly, there is need to change the Jua Kali artisans attitudes through media literacy on how to benefit from the digital television platform.

CHAPTER SEVEN

SUMMARY OF FINDINGS CONCLUSIONS AND RECOMMENDATIONS

7.0 Introduction

The task of this study was to establish use of digital television platform in nurturing innovation in Kenya among Nairobi's Jua kali mechanical engineering artisans. The questions under investigation were: - Ways in which content shown on the Kenya digital platform inspired creativity for innovation among Jua Kali artisans. Additionally, the researcher wanted to find out the efforts in place to produce edutainment content for Jua Kali niche groups in the engineering fields. Lastly, the researcher investigated whether engineering Jua Kali artisans in Kenya can access engineering content in digital television platform?

7.1 Summary of key findings

The researcher found that there was availability of content useful in Jua Kali work. However, useful television was viewed mostly from the internet and not from normal home screens. It was also established that a large number of Jua Kali artisans are young and are more likely to be tech survey.

Additionally, majority of Engineering Jua kali artisans have access to digital television equipment that could help them access digital content and have already considered that there could be available content that could be useful in applying to their work. On the

other hand, Jua Kali engineering artisans are yet to understand the concept of the digital television and how it could be of use. It is majorly identified by internet usage only. Most Jua Kali engineering artisans agree that there are interesting and captivating videos that can be watched mostly through the internet but not on normal TV. Moreover, there are other factors that hinder the use of the digital platform they include the perception that the internet may be sophisticated or that television is only in one form, a home screen, which doesn't offer the information needed. Besides, the internet is considered useful to a certain economic class of people. It was also established that a majority of the Jua Kali artisans only accessed the digital television platform mostly when bored and not as a reference tool. This again pointed to the problem of attitudes on internet usage and the television digital platform usage as well.

Furthermore, Jua kali artisans found it difficult to locate work related content and this could have hampered how much they could use the digital television platform to innovate. The shows were considered difficult to access because of factors such as time and the programs needed a flat fee to watch or pay per view. The other issue is that of ignorance or misconceptions about the internet use in general that could hamper effective use and little or no knowledge on how to use search engines, recommendation program or program guides to access content.

Moreover, media producers also cited issues that can cause necessary content not to be produced. It was found that access to funding was difficult, also a poor policy structure that has led to a poor business environment, tribalism and nepotism as opposed to

professionalism and merit being the priority in giving jobs and working among peers. These were cited as issues that caused producers not to produce captivating content for audiences in general. Consequently, media producers are yet to fully consider other avenues that can be used to sell content. They have not mastered how to deliver content to different audiences through the process of convergence and divergence. It was also found that new avenues such as the whatsap Facebook and other computer and mobile applications may be considered for content sharing.

Additionally, various other challenges have been cited by some media producers: It is difficult for the mainstream media to adapt to new styles of production with most institutional policies encouraging mostly traditional media usage. Most media houses have administrative structures and working structures that don't allow or give room for understanding the use of new media. Again, it was established that some media producers are unable to adopt new ideas due to ties with traditional media stations. It was also cited that tribalism and favoritism ails the media industry to the point where it hampers creativity and quality in production. Again, lack of training in implementing policy is a challenge. This is the case, especially from enabling stakeholders such as Kenya revenue authority, who are not able to execute zero rated taxation in the film production industry. Additionally, the system seems to benefit only the old producers whereas new producers are not able to access facilities or funding easily. They are not able to form guilds to help stabilize the industry and lastly the education levels of media producers and the university curriculum is still wanting in nurturing producers.

7.2 Conclusion

Majority of Engineering Jua kali artisans have access to digital television equipment that could help them access digital content and have already considered that there could be available interesting content that could be useful in applying to their work. Nevertheless, Jua Kali engineering artisans are yet to understand the concept of the digital television and how it could be of use.

Additionally, media producers also cited issues that can cause necessary content not to be produced. It was found that access to funding, a poor policy structure that leads to a poor business environment as well as tribalism and nepotism as opposed to professionalism and quality were issues that hamper the production of innovation programs for engineering Jua kali artisans.

Again it was also established that media producers were yet to fully consider other avenues that can be used to sell content. They have not mastered how to deliver content to different audiences through the process of convergence and divergence. It was also found that new avenues such as the Whatsap, Facebook and other computer as well as mobile applications may be considered for content sharing.

7.3 Recommendations

The findings have shown that engineering Jua Kali artisans need innovation content that they can understand and have access to. Consequently, media producers have cited that corruption, low funding and little understanding of the digital television platform has led to under production of innovation content among media producers. As such the following

recommendations are made for engineering Jua Kali artisans Media producers and the government:-

7.3.0 Recommendations for Jua Kali artisans

Jua Kali artisans are likely to become more innovative if they have ease of access to the content. The digital media platform now assumes that Jua kali engineering artisans are tech survey. However, through various partnerships that encourage training, engineering artisans can be made more knowledgeable on how to access content and find gratification in online and digital television platform use to encourage innovation. Jua Kali artisans should be bold in the use of online resources and discourage themselves from thinking that digital television and the use of the internet is a preserve of the wealthy elite. Rather, it is to nurture and encourage the innovators who are part of the growth of our micro and macro-economic system.

They can also form associations that not only encourage innovation, but also access to information that can be helpful in nurturing innovation. Through these associations, there can be a convergence of content through accessible channels such as Whatsup or Facebook or even other media avenues to communicate and offer instructional and Edu-entertaining materials that can be used to divulge the innovative content on the digital television platform. Through these Jua Kali associations again, partnerships with government bodies as well as non-government bodies can encourage the use of the digital television platform as a tool to nurture innovation with the engagement of local producers as well.

7.3.1 Recommendation for Media Producers

Funds can be accessed by adopting local solutions in the formation of guilds that can partner with banks and other financiers for funding through chamas. Again through the adoption of normal untapped distribution channels like hard selling of producing shows, funds can be created. Again funds can be created by appealing to strong advertisers who have been guaranteed that their audiences would be interested in buying their products. Finally, funds can also be accessed by appealing to the government and also having proper accountability measures that can create sustainability

Law structures should be put in place to address issues of tribalism and nepotism where discrimination is concerned. The government can also offer incentives and various other strategies to reduce the vice. For instance, rewarding the most racially balanced film crews and also sensitizing the industry through seminars discouraging the vice of choosing a cast on the basis of tribe. Film companies with tendencies to choose people from one tribe should be slapped with fines and boycotts led by the guilds.

On content dissemination I recommend the sensitization and establishing the needs of the audiences. So that Jua kali artisans continue to enjoy content that they find useful. Consequently, media producers are yet to fully consider other avenues that can be used to sell content. They have not mastered how to deliver content to different audiences through the process of convergence and divergence. It was also found that new avenues such as the whatsap Facebook and other computer and mobile applications may be considered for content sharing.

Literature review has suggested that the mainstream media can borrow suitable structure that can allow competition in a global platform from either the British system for state owned media; private media also have an obligation to find a structure suitable and adopt to the changing trends from like-minded bodies. It also advised on the various suitable systems that can allow useful content to be diverted so that various audiences not just engineering Jua Kali artisans can access this content. Media producers need also to understand that the global television landscape has been radically changed by the success of factual formats, rapid digitization and new technologies. As interactive media opportunities have arisen, content is now being produced, delivered and consumed in new ways. Therefore, local producers can attempt to factor in all the opportunities offered by different platforms to deliver content to audiences.

Through partnerships with Media producers, there can be initiatives to train them on market trends in the development of content that can nurture innovation. This will ensure that they can tailor content according to Jua kali needs. The partnership can also include universities who are able to work closely with media producers in the field in order to make sure that the curricula is at par with the media product market needs.

Media producers can also be encouraged to adapt not just to the structural changes but also cultural changes. For instance the development of guilds can assist in lobbying for laws against discrimination, laws that encourage funding of the innovative content industry as well as the encouragement of government to offer incentives that allow the

production of such content. The government can also be lobbied to offer funding for the industry.

7.3.2 Recommendations for Ggovernment Practice

A major issue that Jua Kali artisans raised was that access to content was difficult because the content was expensive to access. This issue can be tackled by the government who can ensure that content is cheaper to access by lowering taxation and license charges in the dissemination of content. This could mean that digital content providers find it more profitable to avail content to publics. Again through the ministry of sports, culture and arts, certain content can be encouraged by offering tax and license exemptions, especially when it comes to the production of certain content.

The study has also shown that it is part of the government initiative to encourage the use of the digital television platform to nurture innovation. The ministry of sports, culture and the arts should ensure that there is the promotion of films by the creation of guilds and oversight bodies that do not just issue licenses but also encourage production of innovative content.

The ministry can also come up with award systems that encourage the production of development content that can encourage innovation for the Jua Kali engineers. It should also encourage mainstream media with funding for the production of innovative content such as shamba shape up. The ministry of industrialization can also offer training in conjunction with other ministries like the ministry of sports of culture to Jua kali artisans and media producers to encourage the use of the digital television platform in understanding how to access content and produce content.

Parliament should also be lobbied to encourage the formation of a policy structure that can regulate funding, encourage rewarding, punish offenders and also protect the freedoms to communicate in a way that reduces monopolization of the media industry by extremely wealthy media owners. Rather, it should promote media literacy and awareness of how to own and produce content. Parliament can also strengthen ownership laws such as copyrights that can reduce intellectual theft through creating an enabling environment that prosecutes and takes seriously copyright cases.

7.3.3 Recommendations for future Research

The following recommendations for future studies are made in view of the current study limitations-

I. Future studies can gather data on the changing media of digital television platform in Kenya and how it is affecting viewership

II. Future studies can also evaluate policy implication and whether they create an enabling production environment for media producers.

III. This study focused on Jua Kali artisans and media producers in their use of the digital television platform. It did not focus on other areas of Jua kali artisans. Future researchers can use a national representative sample that can compare Jua kali artisan's innovation for media use.

IV. This study did not focus on the use of focus groups and it was limited to only Nairobi County, future research can also employ focus groups in establishing whether the innovation has really been growing among Jua Kali artisans in other counties and with the application of various other paradigms in conducting research.

V. It should be researched on how media houses, can make alternative frameworks for profit maximization under changing medium terrains.

REFERENCES

Abelman, R., Atkin, D., & Rand, M. (1997). What viewers watch when they watch TV: Affiliation changes as case study. *Journal of Broadcasting & Electronic Media*, 41, 360–379.

Abercrombie, N. & longhurst, B. (1998). Audiences: A sociological theory of performance and imagination. California. Sage publications.

Abuli, w & Odera F. The Impact of Chemistry School Radio Broadcast in Secondary Schools in Vihiga County, Western, Kenya, Bondo University College. *International Journal of Information and Communication Technology Research.* Volume 3 No. 1, January 2013. Pp. 19-26

Adejo, P.E. & Haruna, U. (2009). *Access of farmers to ICTs for Agricultural development in Bauchi Local Government Area*, Bauchi State. Op.Cit. Pp. 704-707

African internet connectivity. (2002). Continental Connectivity Indicators, July 2002. Online . http//www. 3.sn.apc.org/partners/ais/more/index.html.

African Connection, Centre for Strategic Planning (2002). 'The next step'. A rural ICT program for Africa. Draft 2. *Prepared by Intelcom Research and Consultancy Ltd*. Vancouver, Canada.

Akar-Vural R (2010). How Rural Schoolchildren and Teachers Read TV Dramas: A Case Study on Critical Media Literacy in Turkey. *Urban Educ*., 45(5): 740-763

Ali, M., Ullah, S., & Khan, P. (2007). *Managing innovation and technology in developing countries* . Yonhyun-Don, Seoul, South Korea.

Amenya, N. G. (2007). *The informal sector in Kenya*. Paper presented at the University of Nairobi presentation at youth micro finance forum, Nairobi. Retrieved from http:www.nayd.org /PDF/the informal sector in Kenya

Anderson, C. (2006). *The long tail: Why the future of Business is selling less of more*. New York: Hyperion.

Angrosino, M. V. (2005). *Projects in Ethnographic Research.* Illinois. Waveland Press.

Aphunu, A., & Atuoma, C. N. (2011). Extent of use of ICTs by fish farmers in Isoko Agricultural Zone of Delta State, Nigeria. *Journal of Agricultural Extension*. 15(1) retrieved from http://dx.doi.org/10.4314/jae.v15i1.2

Armah, E. Stephen and Lloyd G. AduAmoah (2010), "Media freedom and political stability in Sub-Saharan Africa: A panel data study," *Journal of Economic Development, Management, IT, Finance and Marketing*, 2(2), 41-67.

Armstrong, C. B., & Rubin, A. M. (1989). Talk radio as interpersonal communication. *Journal of Communication*, 39, 84–94.

Arokoyo T (2003). ICT's for agriculture extension transformation. *Proceeding of ICT's – transforming agriculture extension? CTA's observatory on ICT's. 6th consultative Expert Meeting.* Wageningen, 23 – 25

ASDSP. (2015). Nairobi County. Retrieved from http://www.asdsp.co.ke/index.php/nairobi-county

Asnafi A, Hamidi A (2008). The role of ICT in developing of knowledge. Center of Iran information and scientific evidence. *E-Journal*; 3(2). Available at: http://aeizhazmi.persianblog.ir/post/13

Baiya, H. (2003). The quality challenges of Jua Kali Training. Critical perspectives on education and skills in Eastern Africa on basic and post basic levels. *Network for policies and cooperation in education training* retrieved from http://www.norrag.org

Baker, F. W. (2008). *Prime time programs & 30 second ad costs: Historical look 2000-2009*. Retrieved from http://www.frankwbaker.com/prime_time_programs_30_sec_ad_costs.htm

Baldwin, C. Hienerth, C., and Hippel E. (2003). How user innovations become commercial products: a theoretical investigation and case study. Retrieved from http://web.mit.edu/people/evhippel/papers/Baldwin%20et%20al.pdf

Bandalaria, M. D. (2007) *Impact of ICTs on Open and Distance Learning in a Developing Country Setting: The Philippine experience*. egional Focus Issue: Changing Faces of Open and Distance Education in Asia ~ Insung Jung, IRRODL Regional Editor for Asia. *Vol 8, No 1*

Barnett, S. (2006). 'Can the BBC invigorate our political culture?', pp. 58–69, in J. Lloyd and J. Seaton (eds) *What can be done? Making the media and politics better*. Oxford: Blackwell Publishing.

Basey, M. (1999). Case study research in educational settings: Doing qualitative research in Education settings. London. Open University Press.

BBC (2004) *Building public value: Renewing the BBC for the digital world*. London: BBC Media Centre.

BBC News (2006) 'UK "will lead digital TV uptake"', 22 August, URL http://news.bbc.co.uk/2/hi/entertainment/5275718.stm

BBC (2007b) 'Video Nation', URL (consulted February 2008): Retrieved from http://www.bbc.co.uk/videonation/history/today.shtml

BBC (2007c) 'BBC suspends net learning project', 14 March, URL (consulted February 2008): http://news.bbc.co.uk/2/hi/uk_news/education/6449619.stm

BBC (2008c) 'BBC jam and future BBC learning strategy', media release 28 February, URL (http://www.bbc.co.uk/bbctrust/framework/bbc_service_licences/jam.html

Bell, A. (1995) '"An Endangered Species": Local Programming in the New Zealand Television Market', *Media Culture & Society* 17(2): 181–200.

Berman, R. (1987). *How television sees its audience: A look at the looking glass*. Newbury Park, CA: Sage Publications.

Bettig, R., & Hall, J. (2003). *Big media, big money: Cultural texts and political economics.* Lanham, MD: Rowman & Littlefield

Biltereyst, D. (2004). 'Public service broadcasting, popular entertainment and the construction of trust'. *European Journal of Cultural Studies* 7: 341–62.

Brian, S. (2013). *Introduction to mass communication: Media literacy & culture*. (8th Ed.). New York. Mcgraw Hill.

Brown, T. (2003, June). The role of m-learning in the future of e-learning in Africa*? Paper presented at the 21st ICDE World Conference*, Hong Kong.

Bonesteel, M. (2015).You Tube taught Javelin thrower Julius Yego wins gold at World Championships. *The Washington post*. Retrieved from www.washingtonpost.com

Born, G. (2004).*Uncertain vision: Birt, dyke and the reinvention of the BBC*. London: Secker and Warburg.

Borland, J. (2007, April 6). The TV is dead. Long live the TV. *Wired*. Retrieved from http://www.wired.com

Buren ED (2000). Cultural Aspects of Communication for Development. Translator: Falsafi, S. Tehran. IRIB Press. Iran, pp. 110-114.

Bolter, D. & Grusin, R.(1999) Remediation: Understanding New Media Revised ed. Edition. Boston Massachusettes. The MIT Press

Blumler J.G. & Katz, E. (1974). *The uses of mass communications: Current perspectives on gratifications research*. Beverly Hills, CA: Sage.

Bryman, A. (2008) Social Research Methods. Oxford. Oxford University press.

Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. Qualitative Research in Psychology, 3 (2). pp. 77-101. ISSN 1478-0887 Available from: http://eprints.uwe.ac.uk/11735

John R. Carlson and Robert W. Zmud. (1999). Channel Expansion Theory and the Experiential Nature of Media Richness Perceptions. *The Academy of Management Journal*. Vol. 42, No. 2 (Apr., 1999), pp. 153-170

Caldwell, A. E., & Richardson, J. G. (1995). Preferences of a traditional Extension audience for self-directed delivery methods. *Journal of Applied Communications*,

79(1), 31-40.Caracelli, V. J., & Greene, J. C. (1993). Data analysis strategies for mixed-method evaluation designs, *Educational Evaluation and Policy Analysis*, 15(2), 195–207.

Chalhoub, H. (2012). From recyclers to risk takers: the social economic and political challenges of selling second hand clothes in Kenya. *Independent Study Project (isp) collection*. Retrievedfromhttp://digitalcollections.sit.edu/isp_collection/1387?utm_source=digitalcollections.sit.edu%2Fisp_collection%2F1387&utm_medium=PDF&utm_campaign=PDFCoverPages

Channel 4 (2008) 'Medicine Chest', URL http:// www.channel4.com/medicinechest

Charlton, T., and Gunter, B. (2002). Background of the research project. In T. Charlton, B. Gunter and A. Hannan (Eds.) *Broadcast Television Effects In A Remote Community*. Mahwah, NJ: Lawrence Erlbaum Associates, 1-20.

Corrie-Metcalf, G.D. (2005).*The appeal of reality television: a uses and gratifications perspective*. (Master's Thesis, San Jose State University, Minneapolis, United States of America). Retrieved from http://scholarworks.sjsu.edu

Cohen, L., Manion, L. & Morrison, K. (2007). *Research Methods in Education. 6th ed.* London and New York: Routledge. Pp. 638.

Creswell, J. (2009). *Research design: Qualitative, quantitative and mixed methods approach.* Carlifornia: Sage publications.

Creswell, J., & Plano Clark, V. (2007). Designing and Conducting Mixed Methods Research. Thousand Oaks, CA: Sage

Choi, J. (2002) 'Embedding digital television in an IT economy', The Journal of International Communication, 8, 2:26–45.

Simon, H. Comunello, E. and Wangenheim, A. (2013)Enrichment of Interactive Digital TV using Second Screen. *International Journal of Computer Applications* 64(22):58-64,

Communications Commission of Kenya. (2014). Understanding migration from analogue to digital TV broadcasting in Kenya. *Information paper*. Retrieved from www.ca.go.ke

Dhanarajan, T. (2009).Education for all in the digital age. In S. Akhtar & P. Arinto (Eds.), *Digital review of Asia Pacific 2009-2010* (pp. 45-49). New Delhi: SAGE Publications.

Daft, R.L. & Lengel, R.H. (1984). Information richness: a new approach to managerial behavior and organizational design. In: Cummings, L.L. & Staw, B.M. (Eds.), *Research in organizational behavior 6, (191-233)*. Homewood, IL: JAI Press.

Dyer, E. C. (2010). *Reality television: Using para-social relationship theory and economic theory to define the success of network reality programming*. (Master's thesis, university of North Texas, Texas).

Debret, M. (2009).Riding the wave: public service television in the multi-platform era. *Media, Culture & Society*. 31(5) 807-827

Denzin, N.K. (2009) 'The Elephant in the Living Room: Or Extending the Conversation about the Politics of Evidence', Qualitative Research 9(2): 139–60.

Denzin N. K. (2012). Triangulation 2.0. Journal of Mixed Methods Research, 6(2), 80-88.

Dela Pena-Bandalaria, M. (2007). Impact of ICTs on open and distance learning in a developing country setting: The Philippine experience. *International Review of Research in Open and Distance Learning*, *8*(1). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/334/793

Denzin, N. (2006). *Sociological methods: A sourcebook* (5th ed.). New York, NY: Aldine Transaction.

Denzin, N. K. (2009). *The research act: A theoretical introduction to sociological methods*. New York, NY: Aldine Transaction.

Derek Kompare (2010) Publishing Flow: DVD Box Sets and the Re-conception of Television. *Television & New Media* November:335-360

Denzin, N. K. (2012). Triangulation 2.0. *Journal of Mixed Methods Research*, 6(2), 80-88. doi:10.1177/1558689812437186

Dimitri Schuurman et al. (2009). A Living Lab research approach for mobile TV. *Journal Telematics and Informatics*. 28(4) Pp. 271-28

D'Urso, S. C., & Rains, S. A. (2008). Examining the scope of channel expansion: A test of channel expansion theory with new and traditional communication media. Management Communication Quarterly, 21, 486–507.

Elihu Katz, JayBumber & Michael Gurrento (1970) in Rossi, E. (2002). *Uses and gratification*. Retrieved from http://zimmer.csufresno.edu/~johnca/spch100/7-4-uses.htm

Eisenhart, M. (2006). Qualitative science in experimental time. International journal of qualitative studies in education. 19(6). 697-707

Eastman, S. T. (1979). Uses of television viewing and consumer life styles: A multivariate analysis. *Journal of Broadcasting*, 23, 491–500.

Ekoja, I. (2003). Farmer's access to agricultural information in Nigeria. *Bulletin of the American society for information science and technology*; 29(6): 21- 23.

Evans, T., Marez, L. ,Hauttekeete, L. & Biltereyst, D. 2010. Attracting the unserved audience: the sustainability of long tail based business models for cultural television content. *New media & society*. 12(6) 1005-1023

Finn, S. (1992). Television addiction? An evaluation of four competing media-use models. *Journalism Quarterly*, 69, 422–435.

Faiola A, Davis SB, Edwards RL(2010). Extending knowledge domains for new media education: integrating interaction design theory and methods. New Media Soc., 12(5): 691-709.Finn, S., & Gorr, M. B. (1988). Social isolation and social support as correlates of television viewing motivations. *Communication Research*, 15, 135–158

Food matters. (2013). Are you still using a microwave oven? Retrieved from http://www.foodmatters.tv/articles-1/are-you-still-using-a-microwave-oven

Foss, K. A. & Littlejohn, W. S. (2009).*Encyclopedia of communication theory*. Carlifornia. Sage publications Ltd.

Fox, S. (2009). The top 10 failed NASA missions: In space, no one can hear you screw up. Retrieved from http://www.popsci.com/military-aviation-amp-space/article/2009-03/gallery-top-10-nasa-probe-failures

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. The Qualitative Report, 20(9), 1408-1416. Retrieved from http://www.nova.edu/ssss/QR/QR20/9/fusch1.pdf

Gamon JA, Bounaga L, Miller WW (1992). Identifying information sources and educational methods for soil conservation information used by landowners of highly erodible field. J. Appl. Commun., 76(1):

Gay, L. R., Mills, G. E., & Airasian, P. W. (2009). *Educational research: Competencies for analysis and applications* (9th edition). Upper Saddle River, New Jersey: Prentice Hall.

Geddes, S. J. (2004). Mobile learning in the 21st century: Benefits for learners. *Knowledge Tree*. Retrieved from http://knowledgetree.flexiblelearning.net.au/edition06/download/Geddes.pdf

Geraughty, L., &Jancovich, M. (2008).*The shifting definitions of genre*. Jefferson, NC: McFarland & Company, Inc.

Gabert, S. (2010, February). Where fact meets fiction: Scripted vs. reality shows. *Emmy Extra*. Retrieved from http://www.emmys.tv/emmymag/extra/where-fact-meetsfiction

Gunter, B., Nicholas, D., Huntington, p. & Williams, P. (2003). Digital interactive television: health information platform of the future? *Aslib Proceedings*, Vol. 55 iss 5/6 pp. 346-356

Gerbarg, D. (2009). *The economics of information communication and entertainment: The impact of digital technology in the 21st century*. New York. Springer.

Given, L. M. (eds). (2008). *The Sage encyclopedia of qualitative research methods*. New Delhi. India. Sage Publishers.

Gillham, Bill (2000). *Case study research methods*. London: Continuum.

Goodman, K. M. & Johnston, J. (2015) Spectacular foodscapes: Food celebrities and the politics of lifestyle mediation in an age of inequality. *Food, Culture and Society* (18) 2 retrieved from http://www.academia.edu/9132086

Gray, R. (2009).Top 10 innovations that would have changed the world. *The telegraph.* Retrieved from www.telegraph.co.uk

Greenberg, B. S. (1975). British children and televised violence. *Public Opinion Quarterly*, 38, 531–547.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11, 255–274.

Green, J. (2001). *Digital diversions: Youth culture in the age of multimedia*. New York. Routledge

Gluck, M. & Sinn Reich, A. 2005. *Ready to share: Fashion to the ownership of creativity*. Sanfransisco. The Norman Lear center USC ANNEN Berg

Harry Bouwman, B. van den, H. Lidwien van de,W. and Jan van D. (2005). Information and Communication Technology in Organizations: Adoption, Implementation, Use and Effects, by London: Sage Publications. ISBN 1412900905”

Haridakis, P. M., & Rubin, A. M. (2003). Third-person effects in the aftermath of terrorism. Mass Communication and Society, 8, 39–59.

Hill, A. (2005). *Reality TV: Audiences and popular factual television*. New York: Rutledge.

Hirschorn, M. (2007, ~~May~~).The case for reality TV. *The Atlantic Online*. Retrievedfromhttp://www.theatlantic.com/magazine/archive/2007/05/the-case-for-realitytv/5791

Hammersley, Martyn & Atkinson, Paul (1995). *Ethnography: Principles in Practice*, 2nd edition. London: Routledge.

Rubin, R. B., Rubin, A. M., Haridakis, P. M., & Piele, L. J. (2010). Research methods: Strategies and sources (7th ed.). Boston: Wadsworth Cengage Learning.

Haridakis & Whitmore (2006). Research Pioneer Tribute: Alan M. Rubin 76. *Journal of Broadcasting & Electronic Media*/ Vol 1, issue 4

Harrison, J. and B.Wessels (2005) 'A New Public Service Communication Environment? Public Service Broadcasting Values in the Reconfiguring Media', *New Media &Society* 7(6): 834–53.

Harrington, N. (Producer). 2015. *Million dollar rooms*. [Reality TV]. United States of America. Channel 8 Entertainment.

Horton, D., & Wohl, R. R. (1956). Mass communication and para-social interaction: Observations on intimacy at a distance. *Psychiatry, 19,* 215-229.

Internet World Statistics.(2008). World Internet users and population stats. Retrieved from http://www.internetworldstats.com

ILO (2001). Training for work in the informal sector: Evidence from Kenya, Tanzania and Uganda: Retrieved May 18, 2005, from ILO website: http://www.ilo.org/public/english/employment/skills/recomm/publ/014.htm

ITU. (2009). *Measuring the information society*. *International Telecommunications Union*. Geneva, Switzerland: ITU.

Jacka, E. (2006) 'The ABC and the 2006 Federal Media Reforms', *Media International Australia* 120(August): 5–9.

Jacka, E. (2002) 'Digital Spaces, Public Places', *Southern Review* 35(1): 1–8.

Jensen, M. (2000).Making the Connection: Africa and the Internet. Current History, A Journal of Contemporary World Affairs, 99(637), p215-220.

Jenkins A and Healey M.J.(editors) (2002) Linking Teaching and Research: Special Issue of Exchange November, issue3.pdf Article references (rtf) Guide to key reading (rtf)

Johnson, B and Christensen L. (2008).Educational research: quantitative, qualitative and mixed approaches (3rd ed.)Thousand Oaks, California: Sage Publications

Johnson, R.B. and Onwuegbuzie, A.J. (2004) "Mixed methods research: A research paradigm whose time has come", Educational Researchers, Vol. 33, No. 7, pp 14-26Jones, P. H. (1989). Knowledge acquisition. In Barret, J. R. and D. D. Jones. *Knowledge engineering in agriculture.* Minesota. ASAE Monograph, No, 8

Johnson, K. (2008) 'BBC Jam and the Licence Fee Payers', URL (consulted October2008): http://johnsonk.wordpress.com/2008/07/05/bbc-jam-and-the-rights–of-thelicence-fee-payers/Kiss, J. (2007) 'BBC Jam

Johnson, B. & Christen, L. (2008). Educational Research: Quantitative, Qualitative, and Mixed Approaches. London. SAGE Publications

Jwan, J. O. & Ong'ondo, C. O. (2011). Qualitative Research: Introduction to Principles and Techniques. Eldoret: Moi University Press. ISBN: 9966-854-72-X

Kibe, L. (2016). Knowledge sharing techniques amongst Jua Kali artisans in Kenya. *Proceedings of the 11th International Knowledge Management in Organizations Conference on The changing face of Knowledge Management Impacting Society*. Article No. 36 . Retrieved from http://dl.acm.org/citation.cfm?id=2926042&dl=ACM&coll=DL&CFID=823839798&CFTOKEN=50012859

Khan, P., Ullah, S., & Ali, M. (2009). Managing innovation and technology in developing countries. Journal of technology management & innovation. Retrieved from https://www.mendeley.com/research/managing-innovation-technology-developing-countries4/?utm_source=desktop&utm_medium=1.15.1&utm_campaign=open_catalog&userDocumentId=%7B958e7eff-7adf-487c-8ed2-ab5699bf7938%7D

Kothari, C. (2010). *Research methodology methods and techniques.* New Delhi. New Age *international*

Kombo, D., & Tromp, D. (2006*). Proposal and thesis writing*: *An introduction.* Nairobi: Pauline's Publications Africa.

Kukulska-Hulme, A., & Traxler, J. (2007).Designing for mobile and wireless learning. In H. Beetham & R. Sharpe (Eds.), *Rethinking pedagogy for a digital age: Designing and delivering e-learning* (pp. 180-192). London: Routledge.

Kiss, J. (2007) 'BBC Jam Closure Angers New Media Producers', *Guardian Unlimited Online* 15 March, URL (consulted November 2007): http://www.guardian.co.uk/print0, 329746476-103690, 00.html

King, K. (1996). *Jua Kali Kenya: Change & development in an informal economy*. Nairobi. East African Publishers.

Klenke, K. (2008). *Qualitative* research in the study of leadership. Bingley, UK: Emerald Group Pub.

Keiyoro. P.N. (2010). "*An Analysis of the relationship between acquisition of ICT skills and teaching science curriculum in NEPAD e-schools in Kenya. Research paper*.". In: *Presented at e-learning Africa International conference – Zambia and published in the e-learning Africa Book of abstracts 2010.Elearning Africa publication.*

Kim, J., & Rubin, A. M (1997). The variable influence of audience activity on media effects. Communication Research, 24, 107-135.

kilbourne J. (2003)Can't Buy My Love: How Advertising Changes The Way We Think and Feel. New York, N.Y: Touchstone;

Lister, M., Dovey, J., Giddings, S., Grant, I., & Kelly, K. (2009). *New Media: A Critical Introduction*. London. Routledge.

Lee, S.-H.(2008)Communicating through mobile TV. Paper presented at the meeting of the International Communication Association, Montreal, PQ.

Lee, H., Jungho, R., Lee, S., & Kim, D. (2009). Age, identity, gratification opportunities and genre choice in mobile TV viewing: Exploring the effect of college students‖ perceptions of age identification and gratifications on content interest in DMB in Korea. Paper presented at the meeting of the International Communication Association, Chicago, IL.

Lull, J. (1980).The social uses of television. *Human Communication Research*, 6 (3), 1997-209

Lofland, J. & L. H. Lofland *(*1995*). Analyzing Social Settings: a guide to qualitative observation and analysis.* Belmont, CA, Wadsworth Publishing Company.

Looms, P. (2007) 'Public Service Media: All Things to all People – On All Platforms, Anytime?' in C.S. Nissen (ed.) *Making a Difference: Public Service Broadcasting in the European Media Landscape*. Eastleigh, UK: John Libbey.

Laughlin, K. M., & Schmidt, J. L. (1995). Maximizing program delivery in Extension: Lessons form leadership for transformation. *Journal of Extension* [Online], 33(4). Available at: http://www.joe.org/joe/1995august/a4.html

Livingstone, D. W. (2001). Adults' informal learning: Definitions, finds, gaps, and future research: New approaches for lifelong learning (NALL), Working paper # 21-2001, Toronto: Ontario Institute for Studies in Education -- Advisory Panel of Experts on Adult, Learning (APEAL) Applied Research Branch, Human Resource Development, Canada.

Leland, J. (1999). Internet video: Broadening bandwidth coverage on the web's interactivity. In M. Silbergleid & M. J. Pescatore (eds.). *The guide to digital television.* (Pp. 140-147). New York: Miller Freeman PSN. Inc.

Leedy, P.D. & Ormrod, J. E. (2010). *Practical Research: Planning and Design.* (9th ed). New York. Merril.

Lindlof, T.R., & Taylor, B.C. (2011). Qualitative communication research methods (3rd ed.). Thousand Oaks, CA: Sage.

Litchman, M. (2014). Qualitative Research for the Social Sciences. London. Sage publication.

Media, Culture & Society © 2009 SAGE Publications (Los Angeles, London, New Delhi and Singapore), Vol. 31(5): 807–827[ISSN: 0163-4437 DOI: 10.1177/0163443709339466]

Men, L.R (2014).Strategic Internal Communication: Transformational Leadership, Communication Channels and Employee Satisfaction. Management Communication Quarterly, Vol.28 (2) 264-284. Retrieved from http://www.mcq.sagepub.com/content/28/2/264.full.pdf+html.

Meijer, I.C. (2005). 'Impact or content? Ratings v quality in public broadcasting', *European Journal of Communication* 20(1): 27–53.

Manyonzo, Y. (2006). Manifesto for development communication: Nora C. Quebral and Los Banos School of Development communication. *Asian Journal of Communication*, 16(1): 77-79

Masinde (2012).Integrating Technology in language curriculum: The use of information Communication technology in teaching English. Germany: LAP LAMBERT Academic publishing.

Mansell, R., & Wehn, U. (1998). Knowledge Societies: Information Technology for Sustainable Development. Prepared for the United Nations Commission on Science and Technology for Development. Oxford: Oxford University Press.

McLuhan, M (1964).Understanding media: The extensions of man. New York: McGraw Hill. Mbuthia, N. (2010). An investigation into the maintenance of high rise buildings; policies, practices and challenges: A case study of Nairobi. Thesis. Nairobi University. Nairobi, Kenya

Mestrovic, S. (1997). *Postemotional Society*. London: Sage.

Meehan, E. (2005). *Why TV is not our fault: Television programming, viewers, and who's really in control*. Lanham, MD: Rowman & Littlefield.

Meehan, E. (2007). *Why TV is not our fault: Television programming, viewers, and who's really in control*. Lanham, MD: Rowman & Littlefield.

Morgan, D. (1998). Practical strategies for combining qualitative and quantitative methods; Applications to health research. *Qualitative Health Research,* 8, 362–376.

Murdock, G. (2004) 'Building the Digital Commons: Public Broadcasting in the Age of the Internet', the Spry Memorial Lecture, University of Montreal, 22 November, URL (consulted November 2006): http://www.kuturteknikker.hivolda.nofiler/505.pdf

Murdock, G. (2005) 'Public Broadcasting and Democratic Culture', pp. 174–98 in Janet Wasko (ed.) *A Companion to Television*. Malden, MA: Blackwell.

Muchemi, M. W.(2007 October 31st). Kenya: Lack of novelty derails a promising Jua Kali sector. *Business Daily*. Retrieved from http://allafrica.com/stories/200710310935.html

Mugenda, O. M. & Mugenda, A. G. (2003). Research methods: Quantitative and qualitative Approaches. Nairobi: African Centre for Technology Studies.

Morreala, S; Backlund, P and Sparks L. (2014).Communication Education and Instructional Education: Genesis and Evolution as fields of Inquiry. *Communication Education*, *63* (4), 344-354. Retrieved from www.tandfonline. com/doi/pdf/10.1080/03634523.2014.944926.

Miller, K. (2009).Organizational Communication: Approaches and processes.

National Population Commission (2006).National Population Estimates 2006. Abuja, Nigeria.

Nazari, M. R. (2009*). Impact of television on rural development*. (Master's Thesis, University of Malaya, Malaysia. Islamic Republic of Iran, East Asia center, Kuala Lumpur Malaysia).

Nazari MR, Hasbullah AH (2008). Farmers' approach and access to information and communication technology in the efficient use of modern irrigation methods. Europ. J. Sci. Res., (EJSR), 21(1): 38-44

Ndemo, B. (2014, August 18th). Linking Jua Kali innovation for employment and wealth creation. *Daily Nation.* Retrieved from

http://www.nation.co.ke/oped/blogs/dot9/ndemo/2274486-2422360-14ulqqwz/index.html

Nissen, C.S. (2007) 'No Public Service without Both Public and Service – Content Provision between the Scylla of Populism and the Charybdis of Elitism', pp. 65–82 in C.S. Nissen (ed.) *Making a Difference: Public Service Broadcasting in the European Media Landscape*. Eastleigh, UK: John Libbey.

Nyiri, K. (2002, August). *Towards a philosophy of m-learning*. Paper presented at the IEEE International Workshop on Wireless and Mobile Technologies in Education, Vaxjo, Sweden. Retrieved from http://21st.century.phil-inst.hu/eng/m-learning/nyiri_mlearn_philos.htm

Porter, N. (2009, May). Time-shift: Has the digital divide come to prime-time television? Paper presented at *the meeting of the Canadian Communication Association*, Carleton University, Ottawa, Ontario.

Ouma, F. K. (2010). Regularizing the informal sector jua kali activities in Nairobi for sustainable development. Paper presented at the 46th ISOCARP congress, Retrieved from http://www.isocarp.net

Owen, D. (2008). Training workshop on ICT for rural development: Access and application. USAID ICT4D program. Available at: http://go.Worldbank.org/XL89032600.

Orbicom (2007).*Emerging development opportunities: The making of information societies and ICT markets*. Ottawa: IDRC.138

Obuya, J.(2015) Media accountability in the newsroom: A study of policies and practices at two media houses in Kenya. Nairobi (Phd thesis Moi university). Kenya.

Palmer, E. *Television for Learning: Our Foremost Tool in the 21st Century.* Retrieved from http://www.unesco.org/education/lwf/doc/portfolio/opinion7.htm

Papacharissi, Z., & Rubin, A. M. (2000).Predictors of Internet use. Journal of Broadcasting & Electronic Media, 44, 175–196.

Patkin, Terri T. (2003). Individual and Cultural identity in the world of reality television. In Mathew J. Smith & Andrew F. Wood (Eds.), *Survivor Lessons: Essays on communication and reality television.* Jefferson, NC: McFarland&Co.

PBS (2007) 'PSB Financial Highlights 2007', URL (consulted October 2008) http://www.pbs.org/aboutpbs/aboutpbs_corp_financial.html

Porter, N. (2009, May). Time-shift: Has the digital divide come to prime-time television? Paper presented at the meeting of the Canadian Communication Association, Carleton University, Ottawa, Ontario.

Jennings, B. & Beth Oliver, M.Eds. (2009). Media Effects: Advances in Theory and Research. (3rd ed).New York. Routledge

Quail, C. (2012). Television goes online: Myths and realities in the contemporary context. *Global Media Journal*. 12(20)

Rayudu, C. S. (2010). Communication. Mumbai, IND: Himalaya Publishing House.

Reichart, C. S. and Rallis, S. F.(Eds). (1994). The qualitative–quantitative debate: New perspectives. Sanfrancisco: Jossey Bass. 27,43

Robson, C. (2002). *Real world research* (2nded.).Oxford: Blackwell.

Rogers, E. M. (2003). *Diffusion of innovations* (4th ed.). New York: Free Press.

Roy, S. (2010). Media development and political stability: An analysis of Sub-Sahara Africa. The impact of media development worldwide. *The Media Map project*. The World Bank Institute. Retrieved from www.mediamapresource.org

Roscoe, J. (2015). Big Brother Australia Performing the 'real' twenty-four-seven. *International Journal of Cultural Studies.* vol. 4 no. 4473-488.

Roscoe, J., & Hight, C. (2001). Faking it: mock-documentary and the subversion of factuality. Manchester: Manchester University Press.

Rogers, C. (1951). Client-centered therapy. Boston: Houghton-Mifflin

Rubin, A.M; Rubin, A.M; Haridakis P.M and Piele, L.J (2010).Communication Research: strategies and sources (7th ed.). Wadsworth Cencage Learning.

Richard, D. (2003). *More than Words: An Introduction to Communication (4th Edition)* Florence, KY, USA: Taylor and Francis. Retrieved from .http://partners.ebrary.com/ebopapi? Doc ID=10951873

Rubin, R. B., Rubin, A. M., Haridakis, P. M., & Piele, L. J. (2010). Research methods: Strategies and sources (7th ed.). Boston: Wadsworth Cengage Learning.

Rubin, A. M. (1978). Child and adolescent television use and political socialization. Journalism Quarterly, 55, 125–129.

Rubin, A. M. (1979). Television use by children and adolescents. Human Communication Research, 5, 109–120.

Rubin, A. M. (1981). A multivariate analysis of 60 Minutes viewing motivations. Journalism Quarterly, 58, 529–534.

Rubin, A. M. (1983). Television uses and gratifications: The interactions of viewing patterns and motivation. Journal of Broadcasting, 27, 37–51.

Rubin, A. M. (1984). Ritualized and instrumental television viewing. Journal of Communication, 34(3), 67–77.

Rubin, A. M. (1986). Television, aging and information seeking. Language & Communication, 6, 125–137.

Rubin, A. M. (1994). Media uses and effects: A uses-and-gratifications perspective. In J. Bryant & D. Zillmann (Eds.), Media effects: Advances in theory and research (pp. 417–436). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Rubin, A. M. (2002). The uses-and-gratifications perspective of media effects. In J. Bryant & D. Zillmann (Eds.), Media effects: Advances in theory and research (2nd ed., pp. 525–548).

Rubin, A. M., Haridakis, P. M. & Eyal, K. (2003). Viewer aggression and attraction to television talk shows. Media Psychology, 5, 331–362. Rubin, A. M., Haridakis, P. M., Hullman, G. A., Sun, S., Chikombero, P. M., & Pornsakulvanich, V. (2003).Television exposure not predictive of terrorism fear. Newspaper Research Journal, 24, 128–145.

Rubin, A. M., &Perse, E. M. (1987a). Audience activity and soap opera involvement: A uses and effects investigation. Human Communication Research, 14, 246–268.

Rubin, A. M., &Perse, E. M. (1987b).Audience activity and television news gratifications. Communication Research, 14, 58–84.

Rubin, A. M., Perse, E. M., & Powell, R. A. (1985).Loneliness, parasocial interaction, and local television news viewing. Human Communication Research, 12, 155–180.

Rubin, A. M., & Rubin, R. B. (1981). Age, context and television use. Journal of Broadcasting, 25,1–13.

Rubin, A. M., & Rubin, R. B. (1982). Contextual age and television use. Human Communication Research, 8, 228–244.

Rubin, A. M., & Rubin, R. B. (1985). Interface of personal and mediated communication: A research agenda. Critical Studies in Mass Communication, 2, 36–53.

Rubin, A. M., & Rubin, R. B. (1986).Contextual age as a life-position index. International Journal of Aging and Human Development, 23, 27–45.

Rubin, A. M., & Rubin, R. B. (1992).Call-in talk radio in den USA. Rundfunk und Fernsehen, 40, 385–397.

Rubin, A. M., & Rubin, R. B. (2001). Interface of personal and mediated communication: Fifteen years later/Interface de la communication personnelleet de la communication assistéeparordinateur: Quinzeansaprés. Electronic Journal of Communication/La Revue Electroniquede Communication, 11(1). Retrieved June 26, 2006, from http://www.cios.org/getfile/Rubin_V11n101

Rubin, A. M., & Step, M. M. (2000). Impact of motivation, attraction, and parasocialinteraction on talk radio listening. Journal of Broadcasting & Electronic Media, 44, 635–654.

Rubin, A. M., West, D. V., & Mitchell, W. S. (2001). Differences in aggression, attitudes toward women, and distrust as reflected in popular music preferences. Media Psychology, 3, 25–42.

Rubin, A. M., & Windahl, S. (1986). The uses and dependency model of mass communication. Critical Studies in Mass Communication, 3, 184–199.

Rubin, R. B., Rubin, A. M., Perse, E. M., Armstrong, C., McHugh, M., & Faix, N. (1986).Media use and meaning of music video. Journalism Quarterly, 63, 353–359.

Rubin, R. B., Rubin, A. M., & Piele, L. J. (2005). Communication research: Strategies and sources(6th ed.). Belmont, CA: Thomson/Wadsworth.

Sattler, M.(2014). High rise buildings: is it wise to continue to explore such building typology? *Universidad Federal do Rio Grande do Sulk (UFRGS)*, Brazil. http://wsb14barcelona.org/programme/pdf_poster/P-120.pdf

Taylor, J.,Sharples, M., O'Malley, C., Vavoula, G., & Waycott, J. (2006) Towards a Task Model for Mobile Learning: a Dialectical Approach. International Journal of Learning Technology, 2, 2/3, 138 - 158.

Seung Hyun lee (2008) Digital Literacy Education for the Development of Digital Literacy. *Journal of international digital literacy and digital competence*. Vol 5 (3) pp 29-43

Saunders. M., Philip, L, and Adrian, T. (2007). *Research methods for business students (5th ed.)*. UK Prentice Hall.

Scoop (2007) 'TVNZ Proposes to Gut Journalism', 12 April, URL (consulted March 2008): http://www.scoop.co.nz/stories/PO0704/S00152.htm

Sharples, M., Taylor, J., & Vavoula, G. (2007). A theory of learning for the mobile age. In R.

Andrews & C. Haythornthwaite (Eds.), *The Sage handbook of e-learning research* (pp.

221-247). London: Sage Publications.

Ball-Rokeach, S. & Defleur, M. (1970). *Theories of mass communication.* New York : McKay

Seiler, W.J and Beall, M.L (2002).Communication: Making connections (5th ed.). Allyn and Bacon. A Pearson Education Company.

Smith, A. (1976) *The Shadow in the Cave: The Broadcaster, the Audience and the State*. London: Quartet Books.

Smyth, D. (1977). Communications: Blindspot of Western Marxism. *Canadian Journal of Political and Social Theory, 1*(3), 1-27.

Steckler, A., McLeroy, K. R., Goodman, R. M., Bird, S. T., & McCormick, L. (1992). Toward integrating qualitative and quantitative methods: An introduction. *Health Education Quarterly*, 19(1), 1–8

Stavros, C., & Westberg, K. (2009). Using triangulation and multiple case studies to advance relationship marketing theory. Qualitative Market Research, 12(3), 307-320. doi:10.1108/13522750910963827

Samarajiva, R., & Zainudeen, A. (Eds.). (2008). *ICT infrastructure in emerging Asia*. Ottawa:

IDRC.

Soares, M. & Viana, p. 2015. Tuning metadata for better movie content-based recommendation systems. *Multimedia Tools and Applications*. 74,(17), pp 7015-7036

Suvedi M, Campo S, Lipinski MK (1999). Trends in Michigan farmers' information seeking behaviors and perspectives on the delivery of information. J. Appl. Commun., 83(3): 33-50

Sharples, M. (ed.) (2006) Big Issues in Mobile Learning: Report of a Workshop by the Kaleidoscope Network of Excellence Mobile Learning Initiative. Nottingham: Learning Sciences Research Institute

Economist, The. (2008, May 29). Halfway there: How to promote the spread of mobile phones among the world's poorest. Retrieved from http://www.economist.com/

Taylor, J (2004). A task-centred approach to evaluating a mobile learning environment for pedagogic soundness in: J. Attewell & C. Savill-Smith (Eds) Learning with mobile devices (Learning and Skills Development Agency) 167 –171

Tashakkori, A. &Teddlie, J. B. (1998).*Mixed methodology: Combining Qualitative and Quantitative approaches*. Thousand Oaks, California. Sage 6,43, 374

Thompson, M. (2006) 'The Future's Creative', *Television* May: 4–8 (Royal Television Society, London).

Tracey, M. (1998) *The Decline and Fall of Public Service Broadcasting*. London: Oxford University Press.

Traxler, J. (2007). Defining, discussing and evaluating mobile learning: The moving finger writes and having writ . . . *The International Review of Research in Open and Distance Learning*, *8*(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/viewArticle/346

USinternet council 2000

UNESCO. (1997). *National policy definition in technical and vocational education: Beyond the formal sector*. Paper presented at a sub regional seminar for Eastern and Southern African countries. Retrieved from http://www.unevoc.unesco.org/fileadmin/user_upload/pubs/iug014e.pdf

United Nations. (2008). *The Millennium Development Goals Report*. New York: UNDESA. Retrievedfromhttp://mdgs.un.org

Van Zoonen, L. (2001). Desire and resistance: Big brother and the recognition of everyday life. *Media Culture and Society* 23

Valk, H. M., Rashid, A. T., & Elder, L. (2010).Using mobile phones to improve educational outcomes: An analysis of evidence from Asia. *International Review of Research in Open and Distance Learning. 11(1)*

Wangare, J. B. (2015). Knowledge management in the informal sector. A review of Kenya's Jua Kali industry. *International Journal of Economics, Commerce and Management*. Vol 3(10) retrieved from http://ijecm.co.uk/wp-content/uploads/2015/10/31017.pdf

Wambaria,W. W (2014). Professional use of electronic communication media in education: a study of secondary schools in Machakos county, Kenya: Nairobi (PhD Thesis). Moi University, Kenya.

Wagner, D., &Kozma, R. (2005).*New technologies for literacy and adult education: A global perspective*. Paris: UNESCO Publishing.

Wsis. (2005). *Outcome Documents: World summit on the information society*. Geneva. International Telecommunication Union

Wanjala, M, Khaemba E & Mukwa C (2011).Significant factors in professional staff Development for the implementation of ICT Education in Secondary schools: A case of schools in Bungoma District, Kenya. *International Journal of curriculum and Instruction, 1* (1), pp.30-42.Retrieved from http:www.muk.ac.ke/ijci/.

Ward, D. (ed.) (2004) *Public Service Broadcasting. Change and Continuity: A Special Issue of Trends in Communication*. Mahwah; NJ: Lawrence Erlbaum Associates.

Weaver, J. (2011, July 24). Teens tune out TV, log on instead. *MSNBC*. Retrieved from www.msnbc.com

Weins, M. (2011). *The informal Kenyan sector*. Retrieved from www.migrationology.com

Westcot, R. (2013 October 24th). Could Concorde ever fly again? No, says British airways. *BBC*. Retrieved from http://www.bbc.com/news/business-24629451

Williams, A.(Producer).(2014). *Top Gear* [TV series]. Unite Kingdom. British Broadcasting Corporation

World Championships: You tube inspired Julius Yego enjoys win. (26th August 2015) BBC Athletics retrieved from http://www.bbc.com/sport/0/athletics/34067780

Whittle, S. (2004) 'Public Service Broadcasting in the New Media Age', pp. 3–14 in D.Ward (ed.) *Public Service Broadcasting: Change and Continuity: A Special Issue of Trends in Communication*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Weru, J. (2015, June 9th). Kenyan who made and flew aeroplane. *Standard Digital*. Retrieved from http://www.standardmedia.co.ke/article/2000164999/kenyan-who-made-and-flew-aeroplane

Stavros, C., & Westberg, K. (2009). Using triangulation and multiple case studies to advance relationship marketing theory. Qualitative Market Research, 12(3), 307-320. doi:10.1108/13522750910963827Wood, J. T. (2004).Communication theories in action: An introduction (3rd ed.), Wadsworth.

Yin, R.K. (2014). *Case study research: Design and methods.* (5th Ed.) Thousand Oaks, CA: Sage.

Yin, R.K. 2009). *Case study research design and methods.* (3rd Ed.). Thousand Oaks, CA: Sage.

Yang, Y., & S. Chan-Olmsted.(2009, May). Alternative platforms and the audience: Exploring the predictors in the audiences adoption of online media platforms. Paper presented at the meeting of the International Communication Association, Chicago, IL.

Young, J., Hawkin, R., Sharlin, E., & Igarashi, T. (2013). Toward acceptable domestic robots: Lessons learned from social psychology. Journal of social robotics manuscript. Retrieved fromhttp://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.383.2110&rep=rep1&type=pdf

Yun, L & Daladier, T. (2013). Africa on the way to global wireless digital television. International journal of soft computing and engineering(IJSCE). (3), 3 ISSN:2231-2307

Zohrabi. M. (2013).Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings. *Theory and Practice in Language Studies*. Academy Publishers. Finland Vol. 3, No. 2, pp. 254-262,

APPENDICES

APPENDIX I: QUESTIONNAIRE

My name is Martin Kuria. I am pursuing a doctor of philosophy degree in communications at Moi University. I am conducting a research to determine the use of digital television platform in nurturing innovations in Nairobi's Jua kali artisans in the field of engineering. Your responses are confidential and hence, you do not need to write your name on it. The information collected will be used solely for academic purposes and will not be used elsewhere. Where choices are provided, please put a tick on the appropriate box. Where choices are not provided, answer in your own words.

1. Kindly indicate your gender Male ☐ Female? ☐
2. Kindly indicate where your age falls

15-20 years ☐
20-25 years
25-30 years ☐
Over 40 years ☐

3. For how long have you worked in the Jua Kali industry

0-5years ☐
5-10 years
10-15years ☐
15-20years ☐
20-25years ☐

4. Indicate the engineering field category that you believe you are involved

Sound engineering ☐
Mechanical engineering
Electrical engineering ☐
Motor vehicle engineering ☐
Machine engineering ☐
☐

5. What form of Broadcast media do you have access to most among these?

Just TV, CD/DVD, and Mobile phone ☐
Just a Mobile phone with internet, TV with set box, and DVD
Just DVD and TV ☐
Just DVD, TV with set box, computer with internet, mobile phone with internet

6. Do you consider that there is available content that could be useful in applying your work

Strongly consider, ☐ consider ☐ Neutral ☐ never considered ☐

7. At what time do you access the programmes from your channels

During work ☐ At home ☐ When I am bored ☐ When resting at work ☐
When I need to look for information on how to do something
☐

8. I know I can look at my broadcast devices for videos that can tell me what to do when I want to assemble something

Agree ☐ Strongly Agree ☐ Neutral ☐ Disagree ☐ strongly ☐ disagree

9. There is content for me to look at and refer to in the digital TV broadcast content that helps me innovate and also helps me understand my work better

Agree Strongly Agree Neutral Disagree strongly disagre ☐ ☐ ☐ ☐ ☐

10. I find It difficult to locate work related content that can assist me in innovation and to understand my engineering work

Agree ☐ Strongly Agree ☐ Neutral ☐ Disagree ☐ strongly disagree ☐

11. What kind of information related to your work would you like to see for development purposes

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APPENDIX II: INTERVIEW GUIDE

Semi-structured interview questions for Jua Kali artisans
Research Issue: To establish the use of the Kenya digital television platform in nurturing innovations: A study of Nairobi's jua kali artisans in the field of engineering
Warm up question: The Jua kali sector has changed adversely because of information that we can access. In what way is this true or false?
Has Information from television on your engineering field been existing?
Semi- structured
Probe Questions

i. What area in engineering are you involved in?

ii. What is your understanding of the digital television platform?

iii. How has the digital television platform changed your work, life and family?

iv. How have you found the digital television platform useful in your Jua Kali work?

v. In what ways do you use either your phone, your television, your DVD at home or at work to find information on what you do?

vi. Have you ever encountered programmes that are useful to your work on the digital television platform?

vii. In what way would this digital television content become useful to your work?

viii. Do you feel that if there was material for you to refer to, then Jua kali work would be more innovative and easier to do?

ix. In what way do you feel this digital television platform will be useful to you in your work?

APPENDIX III: INTERVIEW GUIDE

Semi structured interview guide for Media practitioners
Research Issue: To establish the use of the Kenya digital television platform in nurturing innovations: A study of Nairobi's Jua kali artisans in the field of engineering

Warm up question: As a media practitioner has the digital television platform changed the media terrain and in which ways?

In what way is your production company or house which you represent contributing to the digital television platform?

Semi structured probe questions

i. What do you understand with the concept of the digital television platform?

ii. How has it affected the issue of advertising and viewership?

iii. If you were to make content for niche audiences like the Jua Kali artisan what would you have to consider in the Kenyan context?

iv. What efforts are in place to help the media practitioners understand how to make use of the digital television platform?

v. As a practitioner in Kenya, in what way have you experienced evidence of producing educational content for niches that can improve innovations?

vi. What content can you term as innovation if you can name?

vii. Being a producer or working in the media how does the digital television platform work to encourage economic growth and profit as well as increase in viewership for such niche groups?

viii. What key specific activities in production do you believe would influence the making of television programmes that would encourage production for a niche group like that one of Jua kali artisans?

APPENDIX IV: SAMPLE INTERVIEW WITH JUA KALI ARTISANS

Interviewer : Kuria

Interviewee: SO1

Interviewer: Naitwa Martin kuria nafanya phd doctoral research ya digital television. Unakumbuka digital television hizi ma tv mpya, set box, internet vitu kama hizo. Halafu umuhimu wa hiyo research ni kujua kama research itasaidia jua kalis kutengeneza vitu. Unataka kujua kama programs zitatengenezwa zioneshwe kwa tv. Swali ya kwanza ni what exactly are you involved in
S01: engineering ya kutengeneza hizi magari
Interviewer: kwa hiyo kazi wewe unaielewa aje kwa kazi yako
S01: kwa digital hakuna kitu kama hiyo, hawaletangi, sasa tutasaidika namna gani na hawaletangi.
Interviewer: Kitu ingine ni wakati hiyo digital tv ilikuja, iliwasaidia ama iliwasaidia vipi
S01: hakuna kitu wanaletanga, unaweza onyeshia hii kitu inaendaga hivi ama hivi, lakini hawaletangi vitu kama hivyo.
Interviewer: tuseme kuna kitu kama simu
S01: simu iko, kwa simu unaweza pata, unaweza ingia google.lakini shida moja ya google ni ngumu, inafaa mtu anaelewa ile kitu anafanya, kama kungekuwa na namna rahisi, ingekuwa bora, vile unaenda direct pale, unataka hii unaingia direct, juu ni ngumu sana yani kwa simu ni ngumu sana.
Interviewer: kama hii vitu kama dvd, tv, simu na nini uko nazo nyumbani ni za nini
S01: kitu muhimu ni simu, kitu kama dvd, ni ya kukaa kidogo unaondokea watoto, kama simu ni ya kuchokora,
Interviewer: kama hizi programs ni za kurelax ungekuwa unawatch saa ngapi
SO1: saa mbili mpaka saa tatu unusu mpaka saa ine. Unajua ukiwa hapa huwezi angalia. Ukiwa hapa san asana hapa ni pahali ya kufanya kitu. Kama ni kitu inakusumbua unakumbuka jana niliona kitu flani pale. Lakini hapa huwezi ona tv. Ushaona tv hapa, huwezi ona watu wakiangalia tv hapa
Interviewer: unaona uwezekano wa kuweka kitu kama hiyo hapa kama tv
S01: wacha niseme sijawahi kuona, lakini kama ingekuwa ingekuwa saw asana. Tuseme sijawahi ona lakini pale buru buru hata kama sijawahi ingia naskianga wameanza kitu kama hiyo. Sana sana tv sio useful sana kwa kazi, kwa sababu hawaleti vipindi. Mimi ile programs ningetaka ni zile zinaonyesha kuhusu mechanism, yani hapa hii inafanywa hivi, na hii inaingizwa vile
interviewer : je watu wanaweza afford, hii vitu ama ni programs haina
SO1: so sasa tuseme hizo vipindi za mechanism zikiletwa zitaimprove aje kazi yako
Sana sana, simu ndio iko muhimu sana kwa sababu ikoo karibu na mfuko. Yani tuseme uko na gari kama Subaru, ambayo inasumbua watu sana na shida ya timing, kama kitu kama hiyo tungeona timing, ingetusaidia sana
Interviewer: Sasa kijumla hiyo concept ya digital tv unailewa aje sasa
S01: Digital tv,sijawahi ielewa hata kidogo, lakini kama ni phone at least.
Kitu kama tv ingekuwa wanaleta hii ndio gari fllani na engine yake iko hivi na hivi pande hii ingine iko hivi na hivi, lakini wangekuwa nayo kwa tv. Lakini kwa simu kama uko na

mteja na anataka utengeneze gari aende, huwezi angalia, lakini kama ingekuwa kwa tv, kama ni Thursday hivi ama siku flani, ungekuwa ushajua vile shida flani inaweza tengenezwa na ikiwa hivyo inaweza kuwa inasaidia sana
Interviewer: tuseme hapap kuna watu wengi, wengine ni wa body, wengine wiring wengine engine sasa tv ingewasaidai aje
S01: unajua huwezi enda engineering peke yake, kuna parts za wire, dakika tano tano, kumi kumi, ili watu waweze kuona. Kama ni kipindi cha tv, two hours is enough, two hours engineering, two hours, wiring, hivi
Interviewer: saa ingine ukitaka kurevise
S01: nitajaribu kurudi nyuma pale kama ile kitu niliona jana usiku, kwa hivyo namna ingine ina weza kutafutwa kuangalia vile kitu inaweza rudiliwa. Kuleta najua zinaweza letwa lakini zinalingana na masaa. Huwezi leta tv mchana, juu mwenye unaletea akona na masaa. Massaaa ile sawa ni ya jioni
Interviewer: hizi gari zinakujanga zinakuja na car manual. Hii manual inawekwa kwa cd, cd inawekwa kwa dvd
S01: Kwa cd, ni kitu ingekuwa inaletwa kwa tv live. Siwezi sahau. Kama hizi gari mpywa zinakuja. Kuna gari zinasumbua watu sana sana, kitu kama wiring inasumbua watu sana, unatoa gari unaipeleka kwa kampuni. Kuna kagari hapa, funguo zilianguka kwa choo, na ukitengeneza funguo, gari inakuambia funguo sio yangu. Ilibidi tupeleke gari kwa kampuni. Hiyo sio shida ya mechanism ni wiring. Kuna hata landrover imekaa hapa, shida ya hiyo gari haikuwa kubwa sana, ni vile walifungua wakashindwa kurudisha, kama angeona vile imefunguliwa na ikarudishwa ingerudishwa
interviewer: Kwahivyo shida kubwa ya jua kali ni nini
S01: ni kukusa namana ya kujua vile vitu kama hizo zinaonyeshwa. Kuna shida katikati kazi ya digitali na jua kali zinafaa kuandamana. Watu wapewe ujuzi. Hata kama inaonekena hii mambo ya tv, inaweza peana experience. Kama tunaweza saidiwa ingekuwa bora. Kusema ukweli, hii magari inatusumbua. Unakuta mtu ananunua gari, hajui gari vizuri, unaletea makanika munaanza kusumbuana , lakini sio ati ni kushindwa, ni makinika hajua, sasa munasumbuana
Interviewer: kuna example ingine
S01: kulikuwa na bmw amabayo ilikuwa na shida ya kuchukua res. Tukapeleka ikafanyiwa car diagnosis. Na unajua car diagnosis haisemi shida za mechanical, hapana, tukapeleka gari kwa bmw, dtdobbie, na wakashindwa, wakasema hiyo gari iwachwe hapo, wakampea gari ingine. Wakampea gari ingine hii ikiwa mzuri tutakuita, ikaa kaa huko miaka mbili, wakashindwa, sasa mwishowe, wakakata kata wakauza, kama wangewaonyesha wangejua. Sasa hii ingine, pia ikaharibika, lakini tukajua shida ingine ilikuwa ya ignition, sasa hii sasa tukajua shida ile ingine ni ilikuwa ni ignition, tungeonyeshwa tungejua. Hata vitu kama spare,shida ni pesa, lakini ni ingine lazma utumane kutoka hapa mpaka Uganda, na itakanga ujuzi.
Interviewer: soi nashukuru sana, hii utafiti haitatumiwa kwa udanganyifu ama kwa kuumiza mtu. Hii mambo ilitoka kwa kutengeneza gari. Nilikuwa najiuliza huyu mtu anaweza fanywa vipi asaidiewe na kazi
S01: inalingana na gari, kama unaijua mzuri, utafanya nini ili ujue, hizi mpya zinataka kalamu na kitabu, juu experience ya gari mzee sina lakini ya hii ingine niko nayo.

APPENDIX IV: SAMPLE INTERVIEW WITH MEDIA PRODUCERS

Interviewer: Kuria
Interviewee: E01
So my first question would be in the line of your work. What really inspires your business, what makes you do a production on a daily basis to begin with?
E01: I think for me its first the love for what I do, I really enjoy doing my work, there is nothing else I would rather be doing first. I have the desire just to do productions, interesting stories , secondly it's a sources of livelihood. That is our bread and butter. Third and most important is that we are out to portray our continent in a better light by telling our own stories and telling them the way we want it told. We know there is a saying that says, until the lion tells the tale, the hunting story shall always glorify the hunter. So if other people from the outside world always come and tell our stories we will always be glorifying them. So until we say the stories, the heroes and heroines will be from a different region.
Interviewer: Where do production ideas come from?
E01: I think ideas come from different places, as she mentioned, they have very creative people, so they share these ideas with some of us and they say you know you should come we do this, come we do that. Other ideas come from somebody from cultures, for instance the culture of photographers, where they travel the country and they see the goats of Garisa, mountains of africa, you know whatever is fine. That's another place where ideas come from. Then you find other people are just talking with the friends, the family and then they are told about these stories that have history, historical legends or something and they try to turn that into a script which can be turned into a story. But this is particularly for entertainment content. like drama, or that which, anything commercial more so more so time originates from the client for example you have a bar soap, a brand of bar soap that you want to advertise, so you generate a story from that, either you go to an advertising agency that draft a story or a script and that is brought to us. So whether you start early or you like action, drama and entertainment.
So your company where do you fit in the whole role or whats your role in it? Is it just applying content? do you also play a role of syndicating for other organisiations producing?
E01: For now I think we are just creating the content for different people regardless of what they broadcast because of the state that we are in now. That's what we have mastered or that's what we are trying to master so we are tyring to concentrate what we know then we can walk together. So for us the unknown is broadcasting the digital content for who knows what tomorrow or the day after will bring. We can have tv stations broadcasting from our bedrooms or something but until then, we are just creating content in the digital platform or the online platform.whatever platform there is.
Interviewer: Okay, so here I am, I have this bunch of people I call jua kali workers. Incredible people and we both know that and we all know that sometimes, jua kali artisans have or could be literate isn't it, it could be that the last time they were in school was like in their polytechnic days isn't it? So afterwards they come out of school and they don't have anything but television to watch okay for knowledge sake, so what I am trying to understand is if these people are to get knowledge for that kind of work, from tv alone,

what would exactly would go into play for you or what would it take, because your organization would come up with a good idea for more educative and innovative content
E01:. Timing would be critical because of the nature of the work. These are people who might have left the house by 6 or early and after, they come in the wee hours, because they are walking back, so its difficult to put that during 6 am to 6 pm. If you push it evening, it's a very small niche market and the general audience would endure and enjoy a comedy show, so it would be very hard to put it between prime time because of the work that they are doing, it means that by 9pm they are very tired so they want to to go to bed. So you cannot put it at nine. So my option would be a Sunday afternoon, when they have gone to church and they have come back, there is nothing much happening so that can be a good time. The important thing is to just understand and emerse yourself in their world, that is just a little bit of what wethink. The other thing would be how they talk, what do they enjoy, these are the kind of people who listen to a lot of radio in their work place they have these radio on, probably playing you know, after really showing whatever they enjoy either benga or loise kim or whatever it is they are very niche market, but how do they talk? How do they walk? What kind of language do they share amongst themselves, is there like noise coz at times, there are shows that are just quiet or the surrounding is there are patterns of noise like (ping ping ping) it means their ears are used to certain levels of noise and they are able to know this is the kind of content that we are going to make, it has to run for this period of time, they have a long concentration span, they have a short concentration span, you need to drop in a few vernacular jokes, we need to find or put it in a certain way, sometimes its anything that looks very good it must be something they can be in touch with. So emersing of yourself in their environment would be very key and because that would determine all these other things
Interviewer: Can you research and how about getting this content to them, you do realize that traditional television like what we have meant that you have to sit infront of a screen and know when a show comes, but in digital television content and audiences are diversified, it could be the smart tvs that are coming up, the set boxed such like dishes isn't it, are there ways of watching through electronic program guides and even have the mobile phones but in your experience when you want to target particular audiences how do you go about it?
E01: Well now its funny, because our country is in that transition, we have just moved to digital officially as the whole country so we have all these tv stations that are churning content left right center but majority of them have not found that solid way that you can say we have one point five million viewers. Next year each country will have one point seven so we are still trying to find our footing in that area but before that happens the culture has already started going into the internet, facebook, you tube and watsup so the thing about the internet is that it is much diversified and it can be narrowed down for use. Say for example something like watsup on the phone, so you find every chama has a watsup group. Every production house has a watup group, every where you go probably even the present or republic has a watsup group because they share a common trend because they share a common material. So you find material jumping from one group to the other depending with the interest of the group. So that is one way that is very very particular that could work very well, before tv gets its footing, because television Is restricted by time and as we said earlier they have to decide when the station decide. I don't know what will happen when the jua kali artisan is on lunch break and he wants to

picture a ten minute video or when he wants a particular problem that he saw on a certain video and he wants to revist it again because its like sleeping through a book, so television does not give you that freedom yet. But internet does because you can save all these short videos on your phone and you can quickly go on you tube and watch again and the suprising thing is, in the yester years the jua kali people were not as close to the internet as they are now. They are very exposed, they just don't know what content to access. I am sure even like my grandmother has watup it means she has found interest in it, and jua kali people have found interest, every mechanic has a time where he can accesss watsup. So if there was need for them to buy a phone with internet, and have maybe two gb memory and above so that they can save ten to twenty videos they would go out of their way to get that because it does make easier their life. But in the western world, its yet to come, its still developing you find they have Netflix, pay per view kind of thing when one comes back home and you want to watch a ten minute video about changing a tyre, you just pay and there is a ten shilling charge and you quickly watch the video save up in your decorder in the next fourteen days and you can pay for any other you want and I think that narrows it down to the specific needs but still we are not there yet. We might be in the next 3 or 2 but until that happens, I think internet is the way to go.

Interviewer: Perhaps it prompts you to think on other ways si he talks about internet and he also look in at the possibility that though the internet culture is still growing there are people who find it difficult to access this content, I am not used to anything that would induldge illiterate people if you know what that means. So how do you go about such a challenge?

E01 : Allow me to say that on the field, that on the field these are people that have already earned themselves the internet concept is a new ball game so that might be abit difficult for them but epg is something that would be for their concept zoen. So if you were to bring them something at a particular time. Whether your father says this is likely to go , they are known to be very loyal to a certain radio station, a certain program, a certain tv station at a particular time. So this could be another interaction, so you can introduce enjoy and make it constant at this particular time for you know saloonists, for mechanics, carpentars whatever it is, I think when you make that culture then you are able to create that following that you want over a certain period of time.

Interviewer: so here is my question, Toyota makes a car, a beautiful car, so when it is damaged you have to rush it to Toyota Kenya, ideally you are a producer who is working with audiences like your mechanic who are from Kisumu how about linking up with companies who are linking up with such people any such prospects In a sense how would such concept be useful, how do you relate that to the chain of business how does it make money sense?

E01: Robs magic rims can run on the show, mechanics can talk about how robs magic rims are good, more just like testimonials but you have covered it as entertainment, but you have a pay check pushed into the show so you can push certain brands in certain directions. Or you can do a cooking show and this amazing chef that people love is cooking with kimbo, even though he doesn't talk about the kimbo the idea is growing with house wives. That makes money for the tv show. The tv show generates money for the production company which employs tones of people and the same breadth it creates money for the television station because of commercials running during the commercial

break. You can imagine 6 years ago when we made the big move to local content. an year before that people could not imagine that after tausi anything could be better. It basically opens more doors to more opportunities. So we are doing a mechanic show and your husband is a mechanic the salonist who happens to be the wife will push to have her own show and the kids who wants to be swimmers may want to have their own thing.
Interviewer: Im trying to wonder how our current media structure can limit our projection of such a concept?
E01: so now the biggest problem is you have all these people, tv managers who are inclined to certain content because it has worked before and they are not crazy enough to accept new ideas that are coming up. We can tell you of how we have seen pilots and pilots which don't go far because there is a cap put by broadcasters that they say this cannot go on air and when your idea is good they know some one elese who can do that, so they slide them the dvd and say niaje si ufanye hii coz huyo msee alifanya hii.(Hi could you produce this program coz that guy wanted to do it) So that idea can run but it does not run to its fullness becaue Joseph who had the full idea had vision that it could run for longer. But because of intellectual theft, you find this copy cat of a show can only run for a year and a half because of the decision being put at the begining. So that ceiling constantly creates a creative block for us content providers because we are only restricted to certain forms of thinking that only dramas soaps of a certain nature can work . We are also inclined to certain names that can work. You know it even goes down to that, so you find a funky actress but because they have contact with the broadcaster they have to be the star in the show even though the ratings will go down, and the broadcaster keeps running it over and over again because of their extra television relations with the actor or the actress. So that creates the blocks. But for us, creative I think we need that space to think outside the box, to try and keep up with what is happening in Uganda, in Nigeria in philipines and the us, you need to try and keep up because we know we spend a lot of time trying to unearth that, so we know but there is the ceiling of broadcast that is always there that is why you are seeing many creatives trying to end that to go online with that freedom, but again there is the challenge of that constant income to build that feeling. So if the three main broadcasters were open to creating fresh new ideas that are not affiliated to certain broadcasting houses that are purely on the creative basis and business understanding then I think the industry can develop way much faster than it is now.
E01: yeah let me expound abit, the men and women that are investing financially into production, they want to create the most profits out of it, but they do not want to pump resources at the beginning, as my collegue said, creative work, needs a lot of resources, one resource is time, people and the other is money. For you to have a good show you need to have a good actress, you need to pay her well to keep her there, when you give a supervisor half of what her rate is, she is likely to have her mind elsewhere and so your story keeps lacking continuity and keeps having gaps and she will not give it her best, and you will get a director who gives you a lousy show and lousy ratings and in a years time your show has dipped. From broadcasters who have all the money you are looking at spending two hundred thousand but lookingat making 2m from advertising revenue it cannot match that, if you did that 50 50 then you are guaranteed that your show can run 10 years 15 years. If you look at it long term then I think you can have a really good game where it's a win win for all rather than a win loose for all the parties.

What changes could be effected to allow for production to happen/ understanding of the system

E01: we need to invest in good institutions, people go to local school but they still come out with this blank face, they would have rathered combined that school fees and go to india or us, for six months. They could have gotten that knowledge quarter the time. We need to maximize in practicality. Seventy percent of the theory does not apply on set, we need good instituions and good lectures and maximize a lot and if theory applies it changes tomorrow so what is reality today tomorrow is fallacy, so knowlegde that is current so we need more practicals, you can learn about a million cameras but if you cannot hold one, it doesn't help you. Then we need to create film associations, guilds with that it creates odder look at all the film industries in the world they have associations, guilds where you lobby the world the indias the Germanys the us they have guilds that can lobby for policy that are helping. For example there was apolicy that was passed four five years ago when kalonzo was vice president about shiping in film equipment duty free, kra people don't even know what a film equipment leave alone emphasizing what a jip is they don't even know, but wen you have an association they can be trained., the moment they see a camera they see money so you cannot import cameras. To get cheaper cameras it means they are generic but with associations, you can buy better cameras and they can help you as associations, to make sure whatever you buy Is proper, universal and standardized across the whole country . government policies can help in managing award ceremonies. They can help in managing say for example Licenses. you have an association you can train people. The problem is the only thing. Government policy can help in managing award ceremonies. You find film makers from abroad, shiping in a crew of 100 people and ¾ can be done by people locally and because you do not have association that can lobby the government to enforce certain laws you find people coming here shooting and being taken back home and you say a whole episode was shot in Kenya but the best a Kenyan did was holding a camera when a camera man has gone on break . it becomes so saddening. How about having proper training from this country to get experience but to rain the industry so that the industry can grow. Lastly when traveling film and tv needs a lot of scenary, you cannot use camera you cannot travel becauce of insecurity and when you go there you have to bribe the governor, the chief, the ap. And you are going to shoot a one minute video to shoot your own portforlio and the bribe has to be hefty so you try and look away from that. So much as we are so concerned about security can we even have us creating assocationas that can talk to the governemtn on how both parties can grow and benefit. that can be done locally, but because we don't have association that can lobby for certain laws,

APENDIX VI: PHOTOS OF VARIOUS JUA KALI SET UPS

A typical Jua Kali work station, in kamkunji. Here people work with all forms of material from scrap to metal, they fabricate it to different items. Through digital innovation they can find access to information that can lead to better innovations. Photo taken by Martin Kuria

Jua Kali automotive engineers in outering estate fixing a truck's suspension system; these are skills mostly learned through apprenticeship or from technical institutions. However more and

more Jua Kali artisans are learning these skills through self-training and the mobile digital television platform can create an alternative learning avenue. Photo taken by Martin Kuria

A work station in Buruburu Nairobi has an installed smart television for purposes of motor vehicle digital diagnosis. This is showing the beginning of a future of well-organized work stations with digital television platforms for information on how to fix cars and computerized referenced systems on how to innovate on various projects. This combined with mobile gadgets can prove useful to diverging content for Jua Kali artisans Photo taken by Martin Kuria

APPENDIX VII: WORK PLAN

Activities	Months
Writing proposal	August 2014 - March 2015
Refining Proposal	March- August 2015
Proposal Defense	August –October 2015
Correcting Proposal After defense	October- Nov 2015
Data Collection	November- December 2015
Data analysis	January 2016
Report Writing.	Feb 2016
Seminar presentation	March 2016
Corrections on the Report	April – June 2016
Submission of intent	July 2016
Submission of Theses	August- September 2016
Defense	November – Dec 2016
Correction after defense	December- 2016

APPENDIX VIII: RESEARCH BUDGET

Specific Activities / Items	Budget in Kshs.
Typing	50, 000
Lunch for interviewees	70,000

Stationary	50, 000
Textbooks	50, 000
Photocopying	30, 000
Editing	20, 000
Computer Data Analysis	30, 000
Internet	20, 000
Defense of thesis	
Binding of Thesis	50, 000
Subsistence	50,000
Contingencies	50, 000
Total	**460, 000**

APPENDIX IX: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MR. MARTIN KURIA GITHINJI
of MOI UNIVERSITY, 69287-622
Nairobi,has been permitted to conduct
research in *Nairobi County*
on the topic: *USE OF DIGITAL TELEVISION PLATFORM IN NURTURING INNOVATION IN KENYA: A STUDY OF NAIROBI'S JUA KALI ARTISANS IN THE FIELD OF MECHANICAL ENGINEERING*
for the period ending:
27th June,2017

Permit No : NACOSTI/P/16/58816/11683
Date Of Issue : 27th June,2016
Fee Recieved :ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

RESEARCH LETTER FROM NACOSTI

MOI UNIVERSITY
SCHOOL OF HUMAN RESOURCE DEVELOPMENT
OFFICE OF THE SCHOOL COORDINATOR
NAIROBI CAMPUS

Tel: (053) 43153
Fax: (053) 43153

P.O Box 63056-00200
NAIROBI
KENYA

MU/NRB/SHRD/SA/01

22th January 2016

National Commission for Science, Technology and Innovation
Utalii House
NAIROBI

Dear Sir/Madam,

RE: REQUEST FOR RESEARCH PERMIT
MARTIN KURIA – REG. NO. SHRD/DPHIL/18/14

This is to confirm that the above named is a bonafide Postgraduate student of Moi University, School of Human Resource Development, Department of Communication Studies. The student is pursuing a Doctor of Philosophy in Communication Studies offered at Nairobi campus.

The student successfully defended his proposal and is due to proceed for his research data collection.

The research Title is – **"Use of Digital Television Platform in Nurturing Innovation in Kenya: A Study of Nairobi's Jua Kali Artisans in the Field of Mechanical Engineering".**

The student is in the process of obtaining a research permit to enable him visit the identified research centers. The University shall highly appreciate any assistance accorded to him.

Yours faithfully,

S. GACHEWA
COORDINATOR, SHRD
NAIROBI CAMPUS

COORDINATOR
SCHOOL OF HUMAN
RESOURCE DEVELOPMENT
NAIROBI CAMPUS

RESEARCH LETTER OF AUTHORITY – MOI UNIVERSITY

Moi University
P.O. Box 3900-00100
ELDORET.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Use of digital television platform in nurturing innovation in Kenya: A study of Nairobi's jua kali artisans in the field of mechanical engineering,"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **27th June, 2017.**

You are advised to report **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.