

# International Journal of Communication and Public Relations (IJCPR)

## INFLUENCE OF CHARACTER ROLES IN COMEDIC MOVIES ON ATTITUDES TOWARDS SEXUAL ORIENTATIONS OF UNIVERSITY STUDENTS IN KENYA

Francis Maina Mararo, Professor Hellen K. Mberia and Dr. Lillian  
K. Omoke



## **INFLUENCE OF CHARACTER ROLES IN COMEDIC MOVIES ON ATTITUDES TOWARDS SEXUAL ORIENTATIONS OF UNIVERSITY STUDENTS IN KENYA**

**<sup>1</sup>Francis Maina Mararo**

Ph.D. Student: Department of Media Technology and Applied Communication: Jomo Kenyatta  
University of Agriculture and Technology (JKUAT),

**Corresponding author** Email: [francoliswamaina@gmail.com](mailto:francoliswamaina@gmail.com)

**<sup>2</sup>Professor Hellen K. Mberia**

Lecturer: Department of Media Technology and Applied Communication: Jomo Kenyatta University  
of Agriculture and Technology (JKUAT), Kenya

[hellenmberia@gmail.com](mailto:hellenmberia@gmail.com)

**<sup>3</sup>Dr. Lillian K. Omoke**

Lecturer: Department of Humanities University of Embu (UoEm), Kenya.  
[omoke.lilian@embuni.ac.ke](mailto:omoke.lilian@embuni.ac.ke); [mokeira2012@gmail.com](mailto:mokeira2012@gmail.com)

### Abstract

**Purpose:** This research intended to determine the influence of character roles in Comedic movies on attitudes towards sexual orientations such as lesbians, gays, bisexuals and transgenders (LGBTs) of University students in Kenya. Comedic movies have exploited and portrayed various controversial topics including LGBTs using satire, irony, sarcasm, and stereotypes for humor purposes. The study used social learning theory (SLT) as the underlying proposition.

**Methodology:** The study used mixed methods research design that further used a convergent parallel mixed method model to obtain quantitative and qualitative data. It targeted University students sampled from 7 main chartered public and private Universities in Nairobi County. A sample size of 467 students was used. Focus group discussions involving 30 FGDs participants were also involved. Further, content analysis of the Modern Family comedic movie containing sexual orientations contents was also done. Inferential statistics used were descriptive, correlation, regression and ANOVA analysis.

**Findings:** The study revealed that indeed comedic movies use humor to introduce and thus influence attitudes towards sexual orientations of University students in Kenya. For instance, majority of the respondents agreed that there are more comedic movies containing positive sexual orientations character roles contents which eventually influenced the attitudes towards sexual orientations of University students in Kenya. Additionally, a majority of the respondents agreed that they are more tolerant and accepting of sexual orientations/LGBTs because of watching comedic movies containing sexual orientations. The study also noted that there is an increasing number of University students who openly admitted to be LGBTs.

**Unique contribution to theory, practice and policy:** This study identified the media's role in changing the youths' attitudes towards sexual orientations. Evidence from media contents and societal occurrences, indicated that such sexual orientations are no longer hidden. Also, there have been increased open discussions of LGBTs plights and rights in the Kenyan media recently. Therefore, media contents in Kenya have become a ready platform through which contents with these sexual orientations have been exposed to the broader audience. However, the study also noted that this exposure has been met with diverse views splitting opinions with some opponents being homophobic.

**Keywords:** *Comedic Movies, Attitudes, Sexual Orientations.*

## 1.0 INTRODUCTION

Across the world, comedies are seen as vital part of negotiating the interruption of interrupters in placing the social and cultural measures between issues that are acceptable and unacceptable as humorous in stand-up comedy (Rao, 2011). This means that comedy or humor can therefore be used by disadvantaged or marginalized groups such ethnic groups as humorous gibes to help reduce the hurt or pain in them as well as make a point or express their views. Such groups can include the Gays, Lesbians, Bisexuals, Transgenders and Queers (LGBTs) who use the word “queer,” which was once considered as an insult, for raising and expressing their rights to better lives and respect (Goldman, 2013). For example, a comedy-Will & Grace, has been praised in many reports across the media as a having represented gay men in a positive way by placing the issues around homosexuality that are often considered contentious within respectful and known modern cultures of situation comedies types.

Over the years, comedic movies such as situation comedies genre use sexual orientations contents as a plot and comedic device in making their programs (Fouts & Inch, 2005). Indeed, findings from a study involving programs produced between 2001–2002 and 2002–2003, showed that sexual content featuring sexual minorities/orientations occurred in 15% of programs overall (Fisher, Hill, Grube, & Gruber, 2007). Most of these sexual minorities/orientations were portrayed in movies or in situation comedies. Seif (2017), also noted that there has been a visible rise in the number of gay characters being featured in several television series during the last decade. Also, Fisher, Hill, Joel and Gruber, (2007), observed that after the year 1997 when the first television show called *Ellen* became the first show featuring a gay leading character, it is now common for more gays and lesbian individuals to be featured on television. Consequently, many other comedic shows such as *Spin City*, and *Dawson's Creek* followed with others like *Will and Grace*, *Queer as Folk*, *Six*, and *Oz* depicting gay characters in more complex plot lines and with more explicit sexual behaviors. However, featuring homosexuality characters and contents in comedies tend to be one-sided with the homosexual characters and homophobia being exploited often for comic effect (Cooper, 2003; Fouts & Inch, 2005).

In Kenya, researchers Ndonye, Yieke and Onyango (2015), noted that television comedy has over the last twenty years become really prevalent with the advent of the popular *Redykulass show* which was followed by many other programs in many other media stations. They further noted that today, many local channels feature programs with comic content. However, according to Fisher, Hill, Grube, Joel, and Gruber (2007), argued that even though sexual content is popular in media contents, most of the contents featured heterosexuals with only about 15% of programs overall featuring non-heterosexuals. Further, from the 14 genres considered, it was noted that in movies and variety/comedy shows had considerable amounts of contents in the programs that had non-heterosexuality like LGBTs contents in them. Additionally, according to Hicks (2002), most non-heterosexuals such as gays and lesbians in the modern society identified the media as the most important contemporary factor in learning about their socialization. The presence of non-heterosexuality content in movies and in this case comedic movies, which in this study refers to sexual orientations, potentially exposes audiences to different outlooks to sexual identities through humor and laughter.

Further, in a study involving a sample of 100 top films produced in 2015, researchers Smith, Choueiti, & Pieper (2016), observed that there were 32 non-heterosexuals/LGBTs speaking or named characters

being featured. This is was a noted increase of 13 portrayals from the previous year's report. From the report, only one transgender character appeared from the sample while 19 were gay men, 7 were lesbians, and 5 were bisexuals (3 males, 2 females). Further, in the representation, there were more racial/ethnic diversity across LGBT characters. This noted increase in the representation and diversity of LGBTs in the media as well as in the contemporary Kenyan societies, coincides with the scenario in the Kenyan universities as noted by Omondi, Kiptiony & Chemwei (2016). These observations prompted this research.

However, according to Chi & Hawk (2016), research on attitudes toward same-sex attraction, behavior, and relationships has it that although acceptance levels are on the rise in many Western countries, negative attitudes remain widely spread across many other cultures. Yet, research studies done by Calzo and Ward, (2009); Dunn, (2010); and Chi and Hawk, (2016), indicated that consistently, young persons with higher family social economic status-SES (measured in terms of family income and parental education level) generally hold more tolerant attitudes than individuals from lower SES families. Meaning that those individuals who are more educated, rich and have higher status in society are more accepting, understanding and tolerant to diverse sexual orientations like LGBTs.

In Africa, according to Wittgenstein, (2007), because of the portrayals, visibility and real cases of homosexuality and same-sex marriages, LGBTs have become a hot subject. Indeed, Mbugua and Mbindyo (2010) noted that there are cases of homosexuality in Kenya in spite of the practice being a crime in the country. For instance, there were cases of sodomy and lesbianism especially in boarding schools even though most of the school's administrators suppressed the issue and refused to admit it due to the consequences (Kodero, Misigo, Owino, & Mucherah, 2011). Yet, a research done by Pew Research Global (2014) found that 88 percent of Kenyans feel that homosexuality is "morally unacceptable". However, compared to previous surveys that reported over 90 percent scores, these statistics progressively indicates that Kenyans' attitudes towards sexual orientations such as homosexuals are shifting towards the positive. According to a study by Dyer (as cited in Natalie, 2010), noted that how culture shows sexual minorities indicates how the world regards them as well as how they have to portray and refer themselves. This means that reduced portrayal gives reduced showing of images or representations with which individual gays, lesbians and queers might identify themselves with. Natalie also noted that increased portrayal equally shows not just their increased acceptance in social circles, but also their pointed aspect as being acceptable by cultural designers especially in broadcast media.

Specifically, according to Bufin and Eschholz (2000), a study evaluating content containing sexual materials in the 50 top-rated and best the selling films in 1996 found 30 sex scenes in films rated; R (13 scenes) through PG (five scenes); 17% of the scenes, which had only two scenes showing homosexual behaviors, showed rapes. Further, previewing movies in DVDs showed that there was often no matching to the rating of the movie. This misrepresentation is quite misleading to the audiences who buy such contents innocently based on previews. In addition, a study by Oliver and Kalyanaraman (2002) observed that 56% of the movies previews shown before G-rated films included sexual imagery at an average rate of 1.5 scenes per minute. Such mistakes, whether done deliberately or not will most likely eventually expose audiences that can easily be influenced negatively by explicit

content they never had intentions to consume. Such gaps maybe exploited to expose youths to not only sexually explicit contents such as sexual orientations like LGBTs.

Indeed, in recent years, gays and lesbians have become more visible and predominant in the media and has been a key tool used to measure the homosexual communities' social status (Evelyn and Kupa, 2015). This is a significant change as compared to earlier analyses of television's sexual content that showed minimal to zero references to homosexuality across the episodes coded, (Greenberg and Busselle, 1996). For instance, in the analysis of prime-time network programming produced in the fall of 2001, Raley and Lucas (2006), noted that 7.5% of the dramas and comedies contents on the schedule comprised of gay males and lesbian characters. This is a notable increase in the portrayal of such sexual orientations which projects a possible increase in the future because entertainment television such as situation comedies offers familiar and consistent emotional involvement with characters which results in greater receptivity to various themes, values, and information (Pearl & Pearl, 1999). Therefore, the presence of these sexual orientations in comedic movies very likely ends up closer to audiences consuming them such as youths and hence have an influence on their values, perceptions, attitudes and behaviors.

### **1.1 Research Objective**

To determine the influence of character roles in comedic movies on attitudes towards sexual orientations of University students in Kenya.

### **1.2 Research Hypotheses**

H01: There is no significant influence of character roles in comedic movies containing diverse sexual orientations/LGBTs on attitudes towards sexual orientations among Kenyan youths.

## **2.0 LITERATURE REVIEW**

According to Chambers (2009); Davis (2007); and Streitmatter, (2009), nowadays, more television shows feature recurring or main homosexual characters who are not denied love, sex anymore, or a network of gay partners unlike previous years. Such portrayal differs significantly from the representation of gay characters as asexual, lonely, and pitiful in 20th century television fiction according to Deiter (1976); Fejes and Petrich (1993); and Gross (2001). Consequently, more television programs globally have become more open to airing content containing sexual orientations and are gradually tackling the political consequences of adopting and assuming a gay identity. Even Kenyan media has not been left behind. Severally, the media have had a run-in with some of the Kenyan audiences as well as KFCB because of airing contents with LGBTs contents. Sometimes it seems innocent, unintentional although some other times, it seems like defiance or ignorance. On the other hand, it seems unavoidable since most of the media contents are foreign sourced and in particular from the western world and comes with such sexual orientations.

In September 1998, a movie called *Will & Grace* broke new ground, offering the first gay male lead character on U.S. broadcast television. When the show got to its third season, it was one of the 22 shows that featured gay or lesbian characters in leading, supporting or recurring roles as noted by the

Gay and Lesbian Alliance Against Defamation-GLAAD, (2000). Since its premiere, *Will & Grace* has won numerous awards, including a People's Choice Award as Favorite New Comedy Series, a Golden Globe nomination for Best Comedy Series, an American Comedy Award nomination for Funniest Television Series, two GLAAD (Gay and Lesbian Alliance Against Defamation) Media Awards for Outstanding TV Comedy Series and a Founders Award from the Viewers for Quality Television. Having such gay and lesbian characters premier in the mainstream media as lead characters opened up a path that many movie makers and television channels had not travelled before. Appreciation through these awards prompted many other script writers, movie producers and television stations to embrace this story line.

Movies containing such sexual orientations and orientations preferences have received increased visibility ever since and for some, it is a sign of society's growing acceptance of the gay community. In an issue of *Entertainment Weekly* devoted to "Gay Hollywood," Svetkey (2000) said, "today, in 2000 A.D. (After DeGeneres), gay characters are so common on television, so unexotic, that their sexual orientation has become all but invisible to most viewers. It is, in a sense, the ultimate sign of acceptance." Since then, LGBTs persons have gone on to be included even in the Animated films including but not limited to: *The Simpsons, Superman, South Park, Family Guy, X-Men, and Gargoyles*. Similarly, in Kenya, televisions programs with a variety of gay themed shows to the Kenyan audience have been showed to date as indicated earlier.

Ochman (1996), found that showing children same-sex storybook characters that strong and in positive roles improved the children's positive self-concepts. These findings are significant in part because they established that positive representations of characters in media who happen to share similar traits with a viewer can yield changes in the viewer's self-perception which essentially means also normalizing sexual orientations. The characters in the songs and movies focused largely on homosexuality, rape, transactional sex, HIV testing, stigma, condom use, gender inequity and multiple concurrent partnerships. Despite the controversy surrounding homosexuality in Kenya, the show (*Shuga season 2*) aired with open gay scenes but aimed at tackling the spread of HIV/AIDs among the gay people. Additionally, there are organizations established to represent various sexual orientations in Kenya such as the Integrated Orientation Gender Identity and Expression (SOGIE) and community online platform acronym ICOP, Gays and Lesbian Coalition of Kenya (GALC), National Gay and Lesbian Human Rights Commission (NGLHRC) among others. They are leading online and activist's groups in Kenya that serves the local LGBT community as Kenya's sexual and gender minorities' news service.

Further, researchers Wohlford, Lochman and Barry, (2004), found that respondents were more likely to have better levels of self-esteem if they believed they shared many characteristics with their character role models than if they believed they shared few traits with them. Therefore, since being with role models with similar characteristics leads to high self-esteem, it is reasonable to expect that GLB persons who have access to similar role models may have higher self-esteem than those who lack access to such role models. Additionally, having role models has also been demonstrated to be related to self-efficacy in Cheung and Yue (2003) who argued that repeating behaviors of accomplished and renown individuals leads to a higher sense of self-efficacy amongst adolescents. This means that most adolescents and youths would like to be closely associated, act like, behave like the persons they hold highly and if they are LGBTs, then they are likely to adopt such behaviors.

However, according to Clum, (2000); Dyer, (1986); and Gross, (2001), there is still scanty data available specifically focusing on the influence of media personalities and the characters of LGBT individuals' identity. However, theoretical work has pointed to the significance of media personalities in shaping LGBT's identity. The scholars argue that the often-hidden aspect of sexual minorities' identities and their years of exclusion from conventional culture has given many of them an increased awareness of theatricality and performativity, which, in turn, raises their close attachment with film and television famous actors. Further, the few exploratory empirical studies available in this area provide fascinating qualitative indication of the media's influence on LGBTs identity. For instance, in one such study by Kivel and Kleiber (2000) showed that lesbian and gay youths use diverse media outlets to learn about lesbian and gay identity and to discover individuals with whom they can associate with. From these media sources, respondents also found role models who gave them motivation to be successful and overcome their challenges. Relatedly, Dobinson and Young (2000) noted that lesbian film audiences related most with female characters who did not imitate the known traditional feminine roles and that they responded positively to those characters who were alleged to be lesbian and to films showing close positive relationships among women.

Indeed, scholars Dobinson, and Young, (2000), and also Kivel and Kleiber (2000), recognized a number of ways in which LGBT individuals interrelate with the media platforms in such a way that raises their comfort with their LGBT identity. Therefore, there are some previous research studies which have suggested possibilities for the manner in which the media may influence LGBTs individuals, (Basow & Howe, 1980; Boon & Lomore, 2001; Karunanayake & Nauta, 2004; Lockwood, 2006; Matthews, 2005; Ochman, 1996; Wohlford et al., 2004). As well, some qualitative research studies also examined the influence of the media on GLB subgroups such as lesbians. However, according to Dobinson and Young, (2000); Kivel and Kleiber, (2000), there is still a scarcity of empirical research studies that has systematically examined the influence of the media on LGBT individuals' identities. Therefore, analyzing comedic movies would help to further provide knowledge and information describing their influence on attitudes towards sexual orientations of University students in Kenya.

## **2.2 THEORETICAL FRAMEWORK**

According to Udo-Akang (2012), the importance of theory in research cannot be underestimated because theories are important in three main ways: theories provide a framework for analysis, provides efficient method for field development, and finally provides a clear explanation for the pragmatic world. This research study used the Social learning theory-SLT:

### **2.2.1 Social learning theory (SLT)**

The theory of social learning argued that learning is a cognitive process taking place in a social context and can happen purely by observing or direct instruction, even if reproduction/modelling and direct reinforcement are absent (Bandura, 1971). The theory was proposed by Albert Bandura and argues that much learning takes place through observing the behavior of others (Anaeto, et al, 2008). It explains how people adopt and maintain recommended behaviors through observation. At its core, SLT argues that individuals are motivated to adopt the recommended behavior to the extent that they perceive the



latter will bring about positive outcomes. First-hand experience is not a necessary condition for the behavior changes to happen. In the context of comedic movies containing sexual orientations, it means that if the youths are exposed to positive scenes and language that portrays successful LGBTs actors who are also rich and famous, have happy relationships as gays, lesbians, bisexuals or even also transgenders, they may be mentally twisted or reinforced to think that such sexual orientations are to be admired, aspired and even modeled. This theory was therefore, used to describe the influence of character roles in the comedic movies on attitudes towards sexual orientations of Kenyan university students.

### 3.1 METHODOLOGY

The study applied mixed methods research design that further used a convergent parallel mixed method model involving combining or integration of qualitative and quantitative research and data.

#### 3.1.1 Target population

The area of study was in Nairobi County targeting the 9 main, chartered private and public Universities. This county was selected because it is Kenya's capital and a host to the majority of the chartered, main public and private Universities, as well as the largest percentage of University students (69,345) in Kenya, according to the National Bureau of Statistics (2013). The study population was University students sampled from 7 main chartered public and private Universities in Nairobi County. A sample size of 467 students was sampled through probability sampling techniques involving stratified sampling and simple random sampling. Also, non-probability sampling techniques involving purposive and snowball sampling was used to select 30 focus group discussions-FGDs participants. The research instruments used were questionnaires, and focus groups discussions interviews.

#### 3.1.2 Sample Size

The study population was determined by Yamane (1973) formula which is most applicable when one is working with a finite population and the population size is known.

*Thus, considering the population of university students as respondents, a sample size was derived with the formula below;*

The Yamane formula for determining the sample size is given by:

$$n = N / [1 + N (e^2)]$$

**Where:**

**n** = Sample size, **N** = Total population, **e** = Error tolerance which is (5%)

Therefore; **n=168,265/ [1+168,265(0.05)2] = 399.99 which is =400**

However, due to the likelihood of poor return rate of questionnaires in research involving a population like that of University students, oversampling was done. Also, considering that the population of the

study was 168,265, the sample size of 400 respondents was used. This figure was further over sampled in order to achieve a response rate of at least 80 percent thus;

$$\text{Number of tools} = \frac{100}{80} \times 400 = 500$$

Therefore, the sample size was **500** respondents.

No of females and males was calculated as;

$$99,593 \times 500 = 296 \text{ MALES}$$

168,275

$$68,672 \times 500 = 204 \text{ FEMALES}$$

169,275

From the formula above, a sampling error or error tolerance of 5% was allowed. This sampling error therefore allows 95% of confidence level in which samples have the true population value. Renze and Weisstein (2018), as the number of trials of a random process increases, the percentage difference between the expected and actual values goes to zero. This means that according to the law of large numbers, the larger the sample size the better the results. Therefore, the researcher chose to use such a sample size of more respondents for better results.

**Table 1: List of Population Size in Public and Private Universities in Nairobi County**

UNIVERSITIES	THE POPULATION SIZE OF STUDENTS				
	Males	Females	Sampled males	Sample females	Total sample
<b>PUBLIC UNIVERSITIES</b>					
University of Nairobi	49,998	31,591	148	94	242
Kenyatta University	33,755	25,964	100	77	177
Technical Univ. of Kenya	7,586	2,446	23	7	30
<b>PRIVATE UNIVERSITIES</b>					
Strathmore University	1,946	1,884	6	5	12
Catholic University	1,772	2,718	5	8	13
United States International Universities	2,326	2,491	7	7	14
Pan Africa University-PAC	223	160	1	1	2
KCA University	1,987	1,418	6	4	10
<b>Total</b>	<b>99,593</b>	<b>68,672</b>	<b>296</b>	<b>203</b>	<b>500</b>

### 3.1.3 Focus Group Discussion

Therefore, from the **30** respondents selected for focus group discussions (FGDs) participants were placed into groups of at least **6** members and placed in **5** groups. Each group had 2 gays, 2 lesbians, 1 bisexual and 1 transgendered person. Because of the sexual nature of the content obtained from interviewees, the legal restrictions, the societal bias towards sexual orientations, it was difficult to obtain larger numbers for FGDs.

## 4.0 RESULTS AND DISCUSSION

### 4.1 Descriptive analysis of character roles

Table 2 shows the respondent's feelings about the portrayal of LGBTs in comedic movies. A majority of the respondents 31.5% indicated that they do not like it at all. However, 19.7% indicated they like it somehow while 23.9% were not sure. Therefore, a majority of youths sampled with total of 51.9% comprises of those who indicated they like it, like it somehow and those not sure. This means that currently and probably in the near future, these contents will likely have more people accepting them and actually liking them.

**Table 2: Respondent's Feelings about Portrayal of Sexual Orientations/LGBTs in Comedic Movies**

Feels about portrayal of LGBTs	Frequency	Percent	Valid Percent
I like it very much	37	8.0	8.0
I like it somehow	92	19.7	19.7
I am not sure	112	23.9	23.9
I do not like it	79	16.9	16.9
I do not like it at all	147	31.5	31.5
<b>Total</b>	<b>467</b>	<b>100.0</b>	<b>100.0</b>

These findings are in tandem with those made by the Advisory Group on Country Information-IAGCI (2020), that societal norms based on culture, religion or the concept that homosexuality is a 'western' import mean that attitudes are generally conservative and intolerant of LGBTI persons. However, a 2016 survey reported that 53% of Kenyans do not agree that homosexuality should be considered a crime and 46% of people had no concerns about their neighbor being gay or lesbian. There are also signs that attitudes may be changing and, in an ethnically and culturally diverse society, attitude varies between groups and locations, with tolerance greater in the capital, Nairobi.

### Youths Awareness of a Friend or Relative who is an LGBT

Results in Table 3 shows that the majority of the respondents about 59.5% respondents are aware of a relative, friend who is gay, lesbian, bisexual or transgender-LGBTs while a minority 40.5% respondents are not aware. This is an indication that LGBTs persons are no longer hidden/in the closet in Kenya despite the practice being a crime/illegal in the country.

**Table 3: Awareness of a Friend or Relative who is an LGBT**

<b>LGBT Friend or Relative</b>	<b>Frequency</b>	<b>Valid Percent</b>
Yes	278	59.5
No	189	40.5
<b>Total</b>	<b>467</b>	<b>100.0</b>

These findings are similar to those noted by Evelyn and Kupa (2015), that visibility of gays and lesbians in media has largely improved in recent years, and the media have been a fundamental tool when measuring the homosexual communities' social status. Such positive portrayals are also signs that attitudes may be changing and especially so in an ethnically and culturally diverse society, attitude varies between groups and locations, with tolerance greater in the urban areas.

#### **Youths Opinions on Sexual Orientations Portrayal in Comedic Movies**

Results on how sexual orientations are portrayed in the comedic movies indicates that a majority 28.5% was about experimenting/exploring, 22.5% as fun, while 16.9% was exciting. This means that many movie producers and creators are changing their story lines and increasingly showing a more positive aspect of sexual minorities. However, 16.3% of the respondents indicated that sexual minorities are portrayed as bad in the comedic movies. Also, combination of both positive and negative portrayals was also indicated.

**Table 4: Opinions on Sexual Orientations Portrayal in Comedic Movies**

<b>Sexual Orientation Portrayed</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>
Explorative/Experimental	133	28.5	28.5
Fun	105	22.5	22.5
Exciting	79	16.9	16.9
Bad	76	16.3	16.3
Dangerous	38	8.1	8.1
Glamorous	36	7.7	7.7
<b>Total</b>	<b>467</b>	<b>100.0</b>	<b>100.0</b>

The findings thus agree with the views of (Bond et al. 2009; Gomillion and Giuliano 2011), that exploring and solidifying sexual beliefs and attitudes is an arduous endeavor for all adolescents, but sexual socialization can be an even greater struggle for lesbian, gay, or bisexual (LGB) teens who fear that inquiring about sex would have detrimental outcomes for their social relationships. Therefore, instead of turning to fellow LGBTs, the adolescents often search and obtain vital information such as sex and sexuality from the media. The salient role media plays in the lives of LGB youth is largely due to the absence of any interpersonal resources willing to provide information, validation, or support for this vulnerable population (Gross 2001).

#### **The Positive Consequences Portrayal of Sexual Orientation**

Results on the positive consequences of the sexual orientations portrayed in the comedic movies indicates that a majority 40.9% was about Love and Intimacy, 22.1% as Happy couples, 1.7% chose

others not indicated while 11.8% indicated they see them shown as living a good life. However, a combination of various options such as successful life, happy family etc. were positive portrayals that were also reported.

**Table 5: The Positive Consequences Portrayal of Sexual Orientation**

Positive consequences	Frequency	Percent
Love and Intimacy	191	40.9
Happy couples	103	22.1
Successful life	74	15.8
Good life	55	11.8
Happy family	36	7.7
Others	8	1.7
<b>Total</b>	<b>467</b>	<b>100.0</b>

These findings are in agreement with those made by Rudy (2016), that in the American gay movies, there are happy gay partners with more affection, love, expectations and happy endings being featured. An example of such films are, *The Broken Hearts Club* (2000), *Adam and Steve* (2004), *Another Gay Movie* (2006), *Wedding Wars* (2007), etc. Also, in Europe, there are also gay-themed movies such as *Touch of Pink* (2003) from the UK, *3 Guys, 1 Girl, 2 Weddings* (2004) from France, *Bear Cub* (2004) from Spain, as well as *His Secret Life* (2002) from Italy portrays happy-ending gay love couples.

### Character Role Models and Attitudes towards Sexual Orientations/LGBTs

Findings on the presence and use of positive portrayal of sexual orientations/LGBTs characters role models, a total of 58.7% (24.4% strongly agree and 34.3% agree) of the sampled University students indicated that there are positive sexual orientations/LGBTs character role models used in the comedic movies while 19.9% were neutral.

**Table 6: Comedic Movies Character Roles and Attitudes towards Sexual Orientations/ LGBTs**

Sexual orientations/LGBTs character roles in Comedic movies....	Agree %	Neutral %	Disagree %
1. There are positive portrayals of sexual orientations/LGBTs role model characters...	58.7	19.9	21.4
2. Positive sexual orientations/LGBTs role models introduce, promote sexual orientations...	51.6	19.5	28.9
3. I prefer watching positively portrayed sexual orientations/LGBTs characters as role models...	48.6	20.6	30.8

These findings are in line with that made by Gross, (1994), and Hart, (2000) that since Ellen DeGeneres made television history by coming out of the closet on her popular primetime sitcom *Ellen* in 1998, gay and lesbian characters have become more and more visible in the media. On the other

hand, a total of 21.4% disagreed with 12.6% disagreeing and 8.8% totally disagreeing on the presence of positive sexual orientations/LGBTs characters in comedic movies.

Relatedly, findings on the use of positive sexual orientations/LGBTs characters role models to introduce, promote diverse sexual orientations/LGBTs, a total of 51.6% (25.3% strongly agree and 26.3% agree) of the sampled University students agreed. However, a total of 28.9% disagreed with 15.0% disagreeing and 13.9% strongly disagreeing. About 19.5% of the respondents were neutral. These findings are similar to the theoretical work that showed the importance of media personalities in shaping GLB identity (Clum, 2000, Dyer, 1986, & Gross, 2001). This is because of the often-hidden nature of sexual minorities' identities and their years of exclusion from conventional culture which has given many of them a heightened alertness to theatre and performing, which, in turn, increases their closeness and liking for film and television stars.

Finally, findings on respondent's preference of watching positively portrayed sexual orientations/LGBTs in comedic movies, a majority-total of the respondents 48.6% agreed comprising of 24.6% strongly agree and 24.0% agree. Therefore, a majority of the sampled Kenyan university students confirmed that they prefer watching such comedic movies. However, a total of 30.8% did not agree with 14.3% disagree and 16.5% strongly disagree. Also, 14.3% were neutral on this issue.

In addition, results from the FGDs of the LGBTs University students indicated that there are more positive LGBTs characters in comedic movies and media in general like in soap operas. For instance, the following LGBT respondents indicated that:

**Q:** In comedic movies such as the Modern family, how are leading characters such as Mitchel and Cameron used as protagonists/main, role models and antagonists?

**R22:** Recently, there have been more LGBTs characters in the comedic movies from western world like America which the local media easily plays.... these international contents take care of LGBTs issues globally but not the local ones...so international comedies have LGBTs role models but not locals....

**R27:** Most of the comedic movies being released recently are trying to bring up more LGBTs characters as role models considering or with respect to the prevailing environment that has been largely against us LGBTs...

**R30:** Unfortunately, most of the comedic movies still restrict positive portrayal of the LGBTs. This limits the number of good/positive LGBTs characters in the media and in Kenya the media just concentrates on spreading rumors and not education about LGBT...

**R6:** There is very little support coming from the media and contents creators for our course. However, there are positive role models even if few and far between but since this is a natural process with or without them, LGBTs will keep growing...

**R9:** Additionally, there are more positive characters in the media today than before. They can be found in the comedic movies as well as Soaps- like in the Phillipino soaps showing in Kenya

shows LGBTs characters, portrayed as best friends to a lady main character, largely the gays. The gay characters often advice the lady well, and thus they are portrayed well...

**R11:** I have seen LGBTs being featured more and more today in many comedic movies from Hollywood. For instance, in the program called The Dirty Sexy Money which is a series, there is a transgender character who is shown in a positive way through out....

From the FGDs results therefore, the respondents identified the positive use of LGBTs characters in the comedic movies.

**Correlation Analysis for Sexual Orientations/LGBTs Character Roles as Role Models, Protagonists and Antagonists**

The researcher also conducted a correlation analysis in order to determine the relationship between character roles and attitudes towards sexual orientations. Findings shows Pearson correlation coefficient (r) is 0.217 with p-value of 0.000 which indicates that there is a significant positive relationship between character roles and attitudes towards sexual orientations/LGBTs since the correlation coefficient is 0.217 (r=0.217, p=0.000<0.05).

**Table 7: Correlation Analysis for Character Roles and Attitudes towards Sexual Orientations.**

		Character Role	Sexual Orientation
Character Role	Pearson Correlation	1	.217**
	Sig. (2-tailed)		.000
	N	467	467
Sexual Orientation	Pearson Correlation	.217**	1
	Sig. (2-tailed)	.000	
	N	467	467

\*. Correlation is significant at the 0.05 level (2-tailed).

**Regression Analysis for Sexual Orientations/LGBT and Character Roles**

In order to determine the regression model for character roles and attitudes towards sexual orientations/LGBTs, a regression analysis was conducted. The model was then tested to determine whether character roles significantly predict attitudes towards sexual orientations.

**Table 8: Regression Analysis for Character Roles**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.217 <sup>a</sup>	.047	.045	.12394

a. Predictors: (Constant), Character Role

The results of regression analysis indicates that there is a relationship between character roles and attitudes towards sexual orientations in which the adjusted  $R^2$  is 0.045 implying that 4.5% of the variation of univervisty’s students attitudes towards sexual orienatations can be explained by comedic movies’ charcter roles content. The remaining 95.5% variation in attitudes towards sexual orientations can be explained by other variables that are not included this model.

**Regression Analysis Coefficients for Character Roles**

Further, the findings on regression analysis coefficients, shows that the regression model is statistically significant since  $p=0.000<0.05$ . This means that character roles can significantly predict attitudes towards sexual orientations. Therefore, the model can be defined as  $Y=0.798+0.160X_1$  where  $Y$ = sexual orientations attitudes and  $X_1$ = character role. This thus means that an increase in the portrayal of character roles increases sexual orientations attitudes by 0.160.

**Table 9: Regression Analysis Coefficients for Character Roles**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.798	.029		27.056	.000
Character Role	.160	.033	.217	4.785	.000

a. Dependent Variable: Sexual Orientation

**ANOVA for Character Roles**

The researcher also conducted analysis of variance (ANOVA) for independent variable character roles. According to (Sawyer, 2009; Field, 2013), ANOVA analysis is conducted so as to determine how influential and useful the independent variable, in this case, character roles, was in predicting the dependent variable, in this case attitudes towards sexual orientations/LGBTs. The findings shows that the regression analysis model is significantly fit to predict the dependent variable because  $P=0.000<0.05$ .

**Regression model Summary for Character Roles**

The results of Analysis of Variance (ANOVA) for regression coefficients as shown in were;  $F_{1, 465, 0.05}=3.84<22.894$  with  $p=0.000<0.05$ . This indicates that the model is significant since  $P<0.05$ . The regression model is significantly fit/adequate to predict attitudes towards sexual orientations, hence it can be argued that character roles had an influence on attitudes towards sexual orientations among the sampled University students in Kenya. Therefore, the null hypothesis that comedic movies through character roles has no influence on attitudes towards sexual orientations of University students in Kenya was rejected.

**Table 10 Regression model Summary for Character Roles**

Model	Sum of Squares	df	Mean Square	F	Sig.
-------	----------------	----	-------------	---	------



Regression	.352	1	.352	22.894	.000 <sup>a</sup>
1 Residual	7.143	465	.015		
Total	7.494	466			

- a. Dependent Variable: Sexual Orientation
- b. Predictors: (Constant), Character Roles

This is consistent with Wohlford, Lochman, and Barry (2004) findings that showed respondents were more likely to have higher levels of self-esteem if they believed they shared many character traits with their LGBTs role models and vice versa. It is consistent thus, to conclude that comedic movies containing sexual orientations/LGBTs character roles has significant influence on attitudes towards sexual orientations of Kenyan University students.

## 5.0 CONCLUSIONS

The study concluded that comedic movies use character roles in creating humor to introduce diverse sexual orientations among audiences like the Kenyan youths. Comedies, both local and foreign comedies are popular among Kenyan University youths who watch them for entertainment. The youths however, watch the predominantly American comedies produced in Hollywood. Majority of the University students irrespective of their gender, age, religion loved watching comedic movies mostly downloaded which is a largely uncontrolled and unregulated source of media contents. Increasingly, the comedic movies were noted to be not only showing diverse sexual orientations/LGBTs, but also more positively such as being normal, as a happy couple, loving and romantic, happy and successful etc. The comedic movie content had a positive, indifferent/neutral or negatively influence the attitudes of the University students such as becoming more tolerant, accepting, understanding of the diverse sexual orientations/LGBTs.

Additionally, findings from this study showed that comedic movies nowadays feature more sexual orientations/LGBTs as main characters/protagonists. From the respondents sampled agreed that there are more protagonists/main characters in comedic movies who are sexual minorities/LGBTs. Therefore, a majority of the sampled Kenyan University students confirmed that comedic movies nowadays feature more positive portrayal of sexual orientations/LGBTs as protagonists/main characters. The results of Analysis of variance (ANOVA) for regression coefficients showed that the model is significant. Also, the regression model is significantly fit/adequate to predict attitudes towards sexual orientations and it can be argued that character roles had an influence on attitudes towards sexual orientations among the sampled University students in Kenya. It is consistent thus, to conclude that comedic movies containing sexual orientations/LGBTs character roles has influence on attitudes towards sexual orientations of Kenyan University students.

## 5.1. RECOMMENDATIONS

This research study offers a number of recommendations to various stakeholders within Kenya and beyond including but not limited to; policy makers, media practice and media profession as well as

academic and research bodies/organizations. Specifically, the recommendations are therefore, given to parent(s)/guardians, practice and media profession, and policy makers.

### **5.1.1 Contribution to the Policy Makers**

To begin with, the policies and laws in place criminalizing sexual orientations such as LGBTs needs to be reviewed. The policies in place need to be updated and brought to the reality of the times. In spite of criminalizing sexual orientations like LGBTs, the numbers of those identifying themselves as such seems to be growing. As well, attitudes towards them are changing albeit slowly. Across the globe, laws criminalizing sexual orientations/LGBTs/sexual minorities have been changed in many countries so as to bring them up to speed.

### **5.1.2 Contribution to the Practice and Media Profession**

Awareness creation on the indirect impacts that comedic movies have on youth's attitudes towards sexual orientations need to be held. This will help to lay bare the possible effects that such contents may have on them. Behind the jokes such as crossdressing, masculinity and femininity, there is a message that can easily pass to an untrained eye. Continued exposure to such contents will likely lead to more exposure and awareness and possibly tolerance of the sexual orientations/LGBTs. Additionally, as media content concerning sexual orientations/LGBTs becomes more positive and diverse, it is possible that such shifts may be associated with greater attitudes of acceptance.

### **5.1.3 Contribution to the research and academic**

This research study advances the knowledge in media influence towards audience's attitudes changes process. For instance, LGBTs images in mass media today have not only increased but also have variety of representations in the media programs. The increased visibility coincides with increase in cases of LGBTs persons and activities globally and in Kenya as well. From these observations therefore, this research identified that comedic movies are an important link during this process (when some people change their attitudes towards sexual orientations) is aided by exposure to media programs like the comedic movies.

### **5.1.4 Contribution to parent(s) and Guardian(s)**

Most of the sampled University students said that their parent(s)/guardians do not give them sexual education or advice. Worse still, the same is lacking on sexual orientations/LGBTs. This has created a gap for the youths who need guidance and protection as they navigate the paths of discovering their sexuality. The parents/guardians also need to advise their youths on media contents and especially comedic movies containing sexual orientations contents so as to enable the choice making of their youths in matters sexuality. There is a possible shift in attitudes towards sexual orientations/LGBTs and the parents needs to update and equip themselves and be open and ready for a diverse future in matters sexual orientations.

### **5.2.5 Suggestions for Further Research**

This research study makes the following suggestions for further research;

1. This research study was based on the influence of comedic movies genre. However, sexual orientations/LGBTs are visible in soap operas, music, fiction movies etc. It is therefore suggested that other genres of media contents should be studied and analyzed.
2. This research did not use experimental research design and therefore could not establish the causal-effects analysis. Therefore, it is recommended that an experiment be conducted where different groups will be compared between those exposed to comedic movies and those not exposed. However, this may only happen once sexual orientations/LGBTs are legalized in Kenya.

## REFERENCES

1. Anaeto, S. G., Onabajo. O. S., Osifeso, J. B. (2008). *Theories And Models of Communication*. Maryland, USA. African Renaissance Books Inc; 57-136
2. Bandura, A. (1971). *Social Learning Theory*. New York: General Learning Press.
3. Basow, S. A., & Howe, K. G. (1980). *Role-model influence: Effects of sex and sex role attitude in college students*. *Psychology of Women Quarterly*, 4, 558–572.
4. Bond, B. J., Hefner, V., & Drogos, K. L. (2009). Information-seeking practices during the sexual development of lesbian, gay, and bisexual individuals: The influence and effects of coming out in a mediated environment. *Sexuality and Culture*, 13, 32–50. Doi:10.1007/s12119-008-9041-y.
5. Boon, S. D., & Lomore, C. D. (2001). *Admirer-celebrity relationships among young adults: Explaining perceptions of celebrity influence on identity*. *Human Communication Research*, 27, 432–465.
6. Bufin, J., & Eschholz, S. (2000). *Images of sex and rape: A content analysis of popular film*. *Violence Against Women*, 6(12), 1317-1344.
7. Calzo, J. P., & Ward, L. M. (2009). Contributions of parents, peers, and media to attitudes towards homosexuality: Investigating sex and ethnic differences. *Journal of Homosexuality*. *Journal of Broadcasting & Electronic Media*, 53:2, 280-299, DOI: 10.1080/08838150902908049
8. Chambers, S. (2009). *The Queer Politics of Television*. London and New York: I.B. Taurus.
9. Cheung, C., & Yue, X. D. (2003). Adolescent modeling after luminary and star idols and development of self-efficacy. *International Journal of Adolescence and Youth*, 11(3),251-267.
10. Chi, X., & Hawk, S.T. (2016), Attitudes toward Same-Sex Attraction and Behavior among Chinese University Students: Tendencies, Correlates, and Gender Differences. *Front. Psychol.* 7:1592. Doi:10.3389/fpsyg.2016.01592
11. Clum, J. M. (2000). *Still acting gay* (Rev. Ed.). New York, NY: St Martin's Griffin.
12. Davis, G., (2007). *Queer as folk*. London: British Film Institute.
13. Deiter, N. (August 17, 1976). *Gay people on television*, unpublished article.
14. Dobinson, C., & Young, K. (2000). *Popular cinema and lesbian interpretive strategies*. *Journal of Homosexuality*, 4(2), 97–122.

15. Dunn, K. (2010). Biological determinism and LGBT Tolerance: a quantitative exploration of biopolitical beliefs. *West. J. Black Stud.* 34 367–379.
16. Dyer, R., (1986). *Heavenly Bodies: Film Stars and Society*. Basingstoke: Macmillan.
17. Evelyn, S. M. and Kupa, M. A. (2015). “The viewers perception on the portrayal of gays and lesbians in selected television programmes”. Unpublished MA Dissertation, University of Limpopo.
18. Fejes, F, Petrich, K. (1993). *Invisibility, homophobia, and heterosexism: Lesbians, gays, and the media*. *Critical Studies in Mass Communication*. 10:396–422.
19. Field, A. P. (2013). *Discovering statistics using SPSS: and sex and drug and rock ‘n’* (4th ed.) London: Sage
20. Fisher, A, D., Hill, J, D., Joel., W, G., Gruber., L, E., (2007). Gay, Lesbian, and Bisexual Content on Television: A Quantitative Analysis Across Two; 52(3-4): 167–188.
21. Fouts, G., & Inch, R. (2005). Homosexuality in TV situation comedies: Characters and verbal comments. *Journal of Homosexuality*, 49(1), 35–45.
22. Gay & Lesbian Alliance Against Defamation, (2000). Where are we now on TV report: 2000 season. Retrieved 8<sup>th</sup> May 2018 from <https://www.glaad.org/publications/whereweareontv11>.
23. Goldman, N. (2013). *Comedy and Democracy: The Role of Humor in Social Justice*. Washington DC.
24. Gomillion, S.C., & Giuliano, T.A. (2011). The influence of media role models on gay, lesbian, and bisexual identity. *Journal of Homosexuality*, 58, 330–354  
Doi:10.1080/00918369.2011.546729.
25. Greenberg, B. S., & Busselle, R. W. (1996). Soap operas and sexual activity: A decade later. *Journal of Communication*, 46,153-160.
26. Gross, L. (1994), What is wrong with this picture? Lesbian women and gay men on television. In: Ringer, RJ.,editor. *Queer words, queer images: Communication and construction of homosexuality*. New York, NY: New York University Press;. P. 143-156.
27. Gross, L. (2001). *Up from invisibility: Lesbians, gay men, and the media in America*. New York: Columbia University Press.
28. Hart, K. R. (2000). Representing Gay men on American television. *The Journal of Men’s Studies*, 9(1) 59-79.
29. Hicks, G., (2002). “Media at the Margins: Homoerotic Appeals to the Gay and Lesbian Community,” In *Sex in Advertising: Perspectives on the Erotic Appeal*. Reichert et al., eds., Lawrence Erlbaum Associates.

30. Independent Advisory Group on Country Information-IAGCI, (2020, April), Country Policy and Information Note Kenya: Sexual orientation and gender identity and expression, London.
31. Karunanayake, D., & Nauta, M. M. (2004). The relationship between race and students' identified career role models and perceived role model influence. *Career Development Quarterly*, 52(3), 225-234. Doi: 10.1002/j.2161-0045.2004.tb00644.x
32. Kenya National Bureau of Statistics (2013), population data on education, <https://www.knbs.or.ke/>
33. Kivel, B. D., & Kleiber, D. A., (2000). Leisure in the identity formation of lesbian/gay youth: Personal, but not social. *Leisure Sciences*, 22, 215–232.
34. Kodero, H.M, Misigo, B.L, Owino, E.A, Mucherah, W., (2011), Perceptions of Students on Homosexuality in Secondary Schools in Kenya. *Int. J. Curr. Res.*3(7):279–284.
35. Lockwood, P. (2006). “Someone like me can be successful”: Do college students need Same gender role models? *Psychology of Women Quarterly*, 30(1), 36-46. Doi: 10.1111/j.1471-6402.2006.00260.x
36. Matthews, D. (2005). Media memories: The first cable/VCR generation recalls their childhood and adolescent media viewing. *Mass Communication and Society*, 6: 219–241.
37. Mbugua, S, N., & Mbindyo, J., (2010), *Mass media framing of homosexuals: A content analysis of the National daily newspapers in Kenya*. Unpublished thesis submitted at the University of Nairobi, Kenya.
38. Natalie, E., (2010). Queer British television: policy and practice, 1997-2007. PhD thesis, University of Nottingham.
39. Ndonye, M. M, Yieke, F, & Onyango, O.J. (2015). Ethnicity as discursive construct in Kenyan Television comedy humorous harm? *Journal Pan African Studies*, Vol. 18, No. 3, august 2015.
40. Ochman, J. M. (1996). The effects of nongender-role stereotyped, same-sex role models in storybooks on the self-esteem of children in grade three. *Sex Roles*, 35, 711–736.
41. Oliver, M.B., & Kalyanaraman, S. (2002). Appropriate for all viewing audiences? An examination of violent and sexual portrayals in movie previews featured on video rentals. *Journal of Broadcasting & Electronic Media*, 46(2), 283-299.
42. Omondi, W., Kiptiony, J., and Chemwei, B., (2016). Perception of University Students on the Influence of Religious Affiliation on Homosexuality Adoption in Universities in Rift Valley Region, Kenya, *International Journal of Scientific Research and Innovative Technology*. Vol. 3 No. 9; ISSN: 2313-3759.
43. Pearl, J., & Pearl, J. (1999). *The chosen image: Television's portrayal of Jewish themes and characters*. Jefferson, NC: McFarland & Company.
44. Pew Research Center (2014). *Public sees Religion's Influence Waning: Growing Appetite for Religion in Politics*. [www.pewresearch.org](http://www.pewresearch.org).
45. Raley, A.B., & Lucas, J.L. (2006). Stereotype or success? Prime-time television's portrayals of gay male, lesbian, and bisexual characters. *Journal of Homosexuality*, 51(2), 19-38.
46. Rao, S. (2011). “Joke's on you!” Stand-up comedy performance and the management of hecklers. Senior thesis, Department of Sociology, Haverford College.

47. Renze, J, and Weisstein, E, W. (2018), law of large numbers, from Mathworld-A wolfram web resource. <http://mathworld.wolfram.com/LawofLargeNumbers.html>
48. Rudy, H. (2016), The Depiction of Homosexuality in American Movies, Faculty of Pedagogy and Education Universitas Prima Indonesia (UNPRI) Medan, Vol. 28.
49. Sawyer, S. F. (2009). Analysis of Variance: The Fundamental Concepts. *Journal of Manual & Manipulative Therapy*, 17(2), 27E-38E.
50. Seif, R., (2017). The Media Representation of Fictional Gay and Lesbian Characters on Television: A Qualitative Analysis of U.S. TV-series regarding Heteronormativity.
51. Streitmatter, R., (2009). From ‘perverts’ to ‘fab five’. The media’s changing depiction of gay men and lesbians. New York and London: Routledge.
52. Svetkey, B. (2000, October 6). Is your TV set gay? *Entertainment Weekly*, 24–28. Unpublished Masters thesis, Jonkoping University school of education and communication.
53. Smith, S. L, Choueiti, M, & Pieper, K., (2016). Inequality in 800 popular films: Examining portrayals of gender, race/ethnicity, LGBTs, and disability from 2007-2015.
54. Udo-Akang, D, (2012), Theoretical Constructs, Concepts, and Applications, American international journal of contemporary research, Vol. 2(9) [www.aijcrnet.com](http://www.aijcrnet.com)
55. Wittgenstein, L. (2007). *Lecturers and Conversations on Aesthetics, Psychology and Religious Belief*. U.S.A: University of California Press. Print.
56. Wohlford, K. E., Lochman, J. E., & Barry, T. D. (2004). The relation between chosen role models and the self-esteem of men and women. *Sex Roles*, 50, 575–582.
57. Yamane, T, (1973). *Statistics: an introductory analysis*. 3<sup>rd</sup> ed. New York (N.Y): Harper and Row.