

Role of the Media in Public Awareness on Waste Disposal and Management in Buea and Douala

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ABSTRACT

This study set out to examine the role of media in public awareness creation on issues concerning waste disposal and management in Buea and Douala of the Southwest and Littoral regions of Cameroon. The study was supported by the Agenda Setting Theory (1972) by McCombs and Shaw, Knowledge Gap Theory (1970) by Philip Tichenor, George Donohue and Claire Olien, then Theory of Planned Behaviour/Reasoned Action. The research design used in this study is a survey design combining both quantitative and qualitative approaches in a concurrent triangulation mixed-method perspective. The probabilistically estimated sample size comprises of 415 community members involved in the study conveniently. As for other stakeholders, notably, community leaders, media houses, waste disposal companies and municipalities councils, they were sampled purposively and conveniently. The study was stratified between French and English speaking Cameroon. Data were collected using a semi-structured questionnaire and an interview guide. Quantitative data were processed using Epidata 3.1 and analysed with the support of SPSS 21.0 while qualitative data from interviews were analysed using the process of thematic analysis. The Cronbach's Alpha reliability coefficient was very satisfactory, with a value of 0.922. This therefore implies that the items on the questionnaire were understood and answered to a satisfactory level of objectivity. Television was the most known channel (80.0%) and the least was billboards (27.0%) and this trend was the same in Buea and Douala IV municipality. Social media was the most used medium to get information whereby 64.3% (281) used it very often, followed by internet 62.7% (274), television 51.5% (225), radio 23.1% (101) and newspapers at the fifth position 13.3% (58). Community radio, banners, notice board and HYSACAM magazine were mostly used by traditional leaders, waste disposal companies, and municipal councils in creating public awareness on issues concerning community responsibility on issues of waste management in Douala IV municipality while it was television and social media in Buea municipality. As for media houses, the most used media outlet was Television (73.1%) and journalists were generally of the opinion that media outlets have slots or provision in creating public awareness on waste management (88.5%). It was generally perceived by community members in both Buea and Douala IV municipalities that media have played a role in creating public awareness on issues concerning waste management with proportions of 74.8% (169) and 76.9% (336) respectively. Cumulatively, 70.1% perceived that media have contributed in raising public awareness on issues concerning waste management to a very large or large extent and this trend was almost the same between Buea and Douala IV municipality. The adequacy of this action was however nuanced as roughly the majority of 52.9% (231) perceived this awareness creation mechanism to be very adequate and this trend was the same in Buea and Douala IV municipalities. The main challenge was poor or no audience, that is people not interested in news related to waste management, environment, hygiene and sanitation. They suggested as response measure adequate sensitization and education of the communities on waste management; more attractive slots, programmes or mechanisms to gain the attention of people. From the findings, it can equally be recommended that social media, community radio and television should be further used to create awareness on issues concerning waste disposal and management.

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KEYWORDS: Waste, disposal, management, media, awareness, public.

INTRODUCTION

For the past few decades, Cameroon just like other developing countries in the Sub-Saharan Africa is experiencing rapid growth in the generation of wastes (Minghua et al., 2009 and Guerro et al., 2013). Waste disposal and management has become a matter of great concern to most towns and cities and it is slowly becoming apparent that most towns and cities management is collapsing, which is having a significant impact on both the environment and public health (Pitchel, 2005). Despite the government of Cameroon taking into cognizant of the need of immediate attention, little has been done in facilitating measures being put in place for various waste disposal and management projects. Of all these types of wastes found in Cameroon, hazardous waste has been generated in an alarming rate despite unavailability of proper disposal facilities for the aforementioned disposal of waste. This could be attributed to increased unplanned and unmanaged urbanization, industrialization, rapid population explosion in towns and cities and rapid economic growth. According to Global Waste Management Goals (GWMO, 2010), the GWMO total solid waste is best estimated at 7 to 10 billion (10⁹) tones. Of this, around 2 billion tones is municipal solid waste (MSW), for municipal governments have taken responsibility. Meanwhile, Palouma, M. 2013, confirmed that Cameroon generates approximately 6 million tons of municipal waste per annum, thus causing a significant environmental and public health hazard. The rate of generation now exceeds the capacity of local municipalities to deal with it due to inadequate financial resources, organizational capacity and technical expertise (Sujauddin et al., 2008). It is for this reason that the role of media in public awareness creation on waste disposal and management cannot be overemphasized. This is because the media and public awareness are closely related. This is in the area of awareness creation to change of public attitudes and behaviours towards improper disposal and management of waste in Cameroon towns and cities. This is also linked to the systematic failure of policy makers and municipal authorities to identify the most sustainable ways of dealing with it in such a manner that, it is in line with the socio-economic aspirations, the impact of public attitudes and behaviours have been neglected (Jackson, 2005). In Cameroon so far, effort has been geared towards understanding how to properly dispose and manage waste in different municipalities. The issue waste has been looked upon as a mere 'removal and disposal' (Morrissey & Browne, 2004). It is absolutely important for Cameroon to adopt a

public private partnership approach go manage waste in our cities and towns.

Media has become an essential daily needs and is playing an outstanding role in creating and shaping public opinion as well as strengthening the society. The role of the media in any society thus, is to investigate and share information and ideas, concerning issues of public interest as well as political, economic and cultural life of the people (Barua, 2011). Media therefore, is an arm of democracy, as it acts as watchdog to the society in order to protect public interest against malpractice in creating public awareness as it has remained an integral part of human civilization (Lippman. 2012). It is also absolutely true that media is playing an outstanding role in strengthening the society by informing, educating and entertaining the target audience (Wharton, 2012). The media helps the target audience to know current situations around the world thus, having a strong social and cultural impact on the society. Because of its intrinsic ability to reach a large number of audiences, it is commonly used to convey message which it is to build public opinion and awareness creation (Lewis, 2007). Bartley, 1990 ascertained that media plays a big role in the life of the society in informing, educating and entertaining, as well as taking social responsibilities to its target audience in the areas of awareness creation and proper waste management and disposal. In addition, the media thus, influences the way people look at the world and helps in making them change their views in organizing public opinions Through mass media, news outlets have a major influence on the general public and a major impact on the public's opinion on certain topics. According to (Lewis, 2007), mass media is and has been the only source that the general public relies on for news and information and is capable of communicating messages faster. For example, when Neil Armstrong landed on the moon in 1969, mass media made it possible for the public to witness this historical event. So therefore, that is the power of the media and its importance to the society and the world at large. In addition, media is considered as "mirror" of the modern society, as it thus, shapes our lives. The purpose of the media is to inform people about current, new affairs and to tell them about the latest happenings. Society is influenced by media in so many ways and it is the media for the masses that helps them to get information about a lot of things and also to form opinions and make judgments regarding various issues! It is the media which keeps the people updated and informed about what is happening around them and the world. Mass media therefore, aimed at reaching a very large market, such as the entire

population of a country. By contrast, local media covers a much smaller population and area by focusing on regional news of interest, while specialty media is provided for particular demographic groups.

Theoretical background

The main theoretical framework guiding this study is based mostly on Agenda Setting Theory. According to McCombs, (2005), who has done extensive research in the field of agenda setting believes that repetition of an idea day after day by the media, will make the idea stand out as very important in other words, if an idea or an issue is given prominence by the media, it is likely going to be considered as important by the public. According to McCombs and Shaw, (1972), this theory was first introduced in public opinion quarterly by Drs. Maxwell McCombs and Donald Shaw. This theory was developed as a study on the 1968 Presidential election where Democratic incumbent Lyndon B. Johnson was ejected by Republicans 100 residents of Chapel Hill, North Carolina on what they thought were the most important issues of the election how that compared to what the local and national media reported were the most important issues (McCombs and Shaw, 1972).

According to Tichenor, Donohue and Olien et al, at the University of Minnesota (1970), the theory Knowledge Gap Hypothesis believed that the increase of information in society is not evenly acquired by every member of society. Rather, people with higher socio-economic status (SESS) tend to have better ability to acquire information (Weng, 2000). Moreso, information in society is not evenly acquired, thus, people of a higher socio-economic status will acquire more information more easily and more frequently than people of lower socio-economic status. The Knowledge Gap theory is made of two groups of people; the higher and lower educated people. The higher socio-economic status (SES) is referred to people who have better educated people, who know more about things. Meanwhile, the lower socio-economic status (LES) is referred to people with low education who know less. Lower socio-economic status (SES) people defined partly by educational level, have little or no knowledge about public affairs issues are disconnected from news events and important new discoveries, and usually aren't concerned about their lack of knowledge.

The theory of Reasoned Action (TRA) was formulated by Ajzen and Fishbein (1980). This theory is resulted from attitude research from Expectancy Value Models. Ajzen and Fishbein formulated this theory TRA after trying to estimate the discrepancy between attitude and behaviour. The Theory of Reasoned Action (TRA) was related to

voluntary behaviour. Later on, behaviour appeared not to be 100% voluntary and under control, his resulted in the addition of perceived behavioural control. With this addition the theory was called the theory of planned behaviour (TPB). The theory of planned behaviour is a theory which predicts deliberate behaviour, because behaviour can be deliberate and planned.

Statement of the Problem

Media has been the catalyst for development. The word media is specifically designed to reach a large audience and the extensive impact of media on society and the environment can easily be seen now our days (Bala, 2012). With the advancement in technology, our towns and cities have observed great population expansion in the thoughts and ideas of towns and city dwellers. The role of the media cannot be over-emphasized. Its major role is to inform, educate, entertain and a social responsibility of current happenings in our towns and cities and the world at large. For proper education on civic participation on the importance of waste disposal and management, the role of the media is to create public awareness in ensuring that the city dwellers are sensitized on the necessity of proper hygiene and sanitation. This will help in avoiding devastating consequences of environmental and public health hazards. The problem is to assess whether the media has given adequate attention on public awareness creation on waste disposal and management in Buea and Douala municipalities.

Inadequate media coverage and public awareness creation on waste disposal and management has been a difficult challenge and a global concern in the rural and urban towns and cities of many developing countries especially; when dealing with collection, storage, transport, disposal and management of wastes. In 2006, the global amount of wastes generated reached 2.02 million tons (Mbeng et al., 2012). The collection, storage, transport, disposal and management are very limited due to many factors such as the absence of qualified personnel to implement adequate waste disposal and sanitation procedures, lack of sufficient waste transport, lack of dumpsites, the widespread practice of open, unregulated or illegal waste dumping, low level of public education and awareness and the general absence of regulatory and legislative framework and its enforcement (WHO, 2010).

Cameroon, being one of them is not different. With increasing rate of unplanned and unmanaged urbanization, rapid population explosion, increased economic growth, towns and cities are experiencing population explosion due to migration of persons,

goods and services, from rural to urban towns and cities in which thousands of tons of municipal wastes get generated daily.

General Objective

The main objective of this study is to assess the role of the media in public awareness creation on waste disposal and management in Buea and Douala.

Specific Objectives

Specifically, this study is set in;

- To assess the role of the media in public awareness on waste disposal and management in Buea and Douala.
- To evaluate if the media has given adequate public awareness on waste disposal and management in Buea and Douala.
- To assess public perceptions on media coverage on waste disposal and management in Buea and Douala.
- To investigate challenges faced by the media in an attempt to play its role in public awareness on waste disposal and management in Buea and Douala.

Methodology

Research Design

The research design used is a survey design. The dominant approach is quantitative employing a

structured questionnaire. This quantitative approach, in a concurrent triangulation mixed-method perspective, is substantiated by a qualitative study whereby the opinions of stakeholders on challenges faced in creating public awareness on issues concerning waste disposal and management were captured as well as what they suggested to improve on the situation.

Area of Study

The study is carried out in two urban towns in the South West and Littoral Regions of Cameroon, namely: Buea and Douala respectively. These towns fall in the humid forest zone of Cameroon specifically in the South West and Littoral Regions of the country. The research will be carried out in two Administrative Divisions - Fako, for the South West Region and Littoral, for the Littoral Region and covers a total surface area of 45.13km² (Littoral, 20.220 km², South West, 24.910km. This will represent 9.5% of the total area of Cameroon (475.442km²).

Population and sample size

The target population was estimated from the population above considering that 60% of the population of Cameroon is aged 16 years and above according to the National Institute of Statistics (2013).

Table 1: Population, target population and sample size

Municipalities	Population	60% of the population	Sample size
Buea Municipality	377,130	226,278	229
Douala V	1,027,526	616,516	208
Total	1,404,656	842,794	437

As for the community members, 437 were sampled, 41 traditional leaders, 38 municipal council workers, 20 waste disposal company (HYSACAM) workers, and 26 journalists.

Sampling Techniques

Participants were sampled conveniently and stratified between French and English speaking Cameroon.

Data Collection Instrument

The data collection instrument was a semi-structured questionnaire for the general population having both open-ended and close ended questions and an interview guide for stakeholders. The questionnaire was self-administered for those who are literate while face-to-face questionnaire administration was applied for those who could not read and write and those that were willing for face-to-face approach. The interview guide was prepared to take care of main stakeholders notably media houses, council workers, HYSACAM workers, and community leaders.

Validity and Reliability of Instrument

Construct validity was checked by ensuring that the measures under investigation relate with one another in a way that is consistent with theoretically derived hypothesis. To ensure content validity, the questionnaire was checked by the researcher, the supervisor, a lecturer and the statistician to make sure the indicators were adequately labelled and could appropriately measure the characters under study. Generally, above 0.75, CVI is satisfactory (Nana, 2018) and in the context of this study, the supervisor and the statistician validated the final instrument making a CVI of 1.

To ensure face validity which is the kind ascertained when little or nothing is known about the research variables, the questionnaire was checked by the researcher, his supervisor, colleagues, the statistician and

respondents during the trial testing of the instrument for clarity and visibility. The reliability of the questionnaire was measured using the estimate of internal consistency or internal reliability. To ensure high reliability of the instrument, the Cronbach's Coefficient Alpha (α) which is the most appropriate reliability test to use when items are not dichotomously scored, was used.

Table 2: Reliability analysis for the final study

Municipality	Cronbach's Alpha	Variance	N of Items	N
Buea	0.931	0.307	53	74
Douala V	0.920	0.296	53	200
IVM	0.922	0.226	53	415

Only items on a Liker-Scale were used in testing the internal consistency assumption. The internal consistency assumption was not violated in both municipalities and for the Integrated Value Mapping (IVM), with very high Cronbach's Alpha values all above 0.9. This therefore implies that respondents understood the questions, were objective and consistent in their responses. Their viewpoints are more likely to be closer than divergent given the smaller values of the variance, closer to 0.

Data collection process

An authorization to carry out the study was obtained from the the University of Douala. This authorization was presented to the community leaders, directors of media stations, HYSACAM and Mayors of municipal councils. Participants were then briefed on the objective of the study, their consent sought, and they were then given the questionnaire for response.

Method of data processing and analysis

Quantitative data was entered using EpiData Version 3.1 (EpiData Association, Odense Denmark, 2008) and analyzed using the Statistical Package for Social Sciences (SPSS) Standard version, Release 21.0 (IBM Inc. 2012). The questionnaire was made of categorical variables and data were analyzed using counting techniques namely frequency and proportions while Multiple-Responses- Analysis was used to calculate the aggregate score for conceptual components (Nana, 2018). Chi-Square test of Equality of proportion was used to compare statistics between Buea and Douala V Municipalities.

Participants were really diversified in term of all the demographic characteristics, which was good for the diversity and representativeness of the sample.

Sex

Both male and female were well represented in the sample, with proportion of 47.4% (207) and 52.6% (230) respectively.

Age

Participants were quite diversified in the ages, with the mode at 18-24 years with a proportion share of 67.3% (294).

Marital status

They were also diversified in their marital status with all the categories represented; but the mode was the single 76.0% (332).

Findings and discussion

Table: Demographic characteristics of community members

Sex	n	%
Male	207	47.4
Female	230	52.6
Age	n	%
18-24	294	67.3
25-34	92	21.1
35-44	31	7.1
45-54	13	3.0
55 and above	7	1.6
Marital status	n	%
Married	86	19.7
Single	332	76.0
Divorced	9	2.1
Widow/er	4	.9
Separated	6	1.4
Level of school attained	n	%
No Formal Education	17	3.9
Adult Education	36	8.2
Primary	5	1.1
Secondary	62	14.2
Vocational	62	14.2
University	255	58.4
Municipality	n	%
Buea	229	52.4
Douala	208	47.6
First official language	n	%
English	312	71.4
French	55	12.6
Bilingual	70	16.0

Level of school attained

All the levels were represented and the mode was University level 58.4% (255).

Municipality

Buea had a share of 52.4% (229) and Douala 47.6% (208).

First official language

The first official language was dominantly English, 71.4% (312), followed by those that were Bilingual 16.0% (700, then French 12.6% (55).

Localities

A total of 44 localities were sampled in Buea and 32 in Douala, covering both rural and urban area, thus testifying of a good geographical coverage.

As for traditional leaders, HYSACAM workers, journalists and councils' workers, they were also well diversified in their characteristics, which was good for the diversity and representativeness of the sample.

Awareness of media channels

Television was the most known channel (80.0%) and the least was billboards (27.0%) and this trend was the same in Buea and Douala IV municipality.

Table: Channels known by participants comparing between Buea and Douala IV municipalities

Media channels	Buea		Douala IV		Total	
	n	%	n	%	n	%
Magazine	72	34.4%	94	45.6%	166	40.0%
Newspaper	97	46.4%	121	58.7%	218	52.5%
Radio	122	58.4%	128	62.1%	250	60.2%
Television	157	75.1%	175	85.0%	332	80.0%
Internet	141	67.5%	147	71.4%	288	69.4%
Billboards	63	30.1%	49	23.8%	112	27.0%
Posters	98	46.9%	64	31.1%	162	39.0%
Flyers	104	49.8%	66	32.0%	170	41.0%
Social Media	123	58.9%	116	56.3%	239	57.6%
Total	209	100%	206	100%	415	100.0%

Media medium used to get information**Table: Media medium used to get information**

Media	Very Often	Often	Sometimes	Rarely	Never
Magazines	7.6% (33)	3.4% (15)	14.4% (63)	28.4% (124)	46.2% (202)
Newspaper	13.3% (58)	11.0% (48)	20.8% (91)	23.1% (101)	31.8% (139)
Radio	23.1% (101)	17.2% (75)	24.5% (107)	10.5% (46)	24.7% (108)
Television	51.5% (225)	22.7% (99)	10.8% (47)	3.4% (15)	11.7% (51)
Internet	62.7% (274)	12.8% (56)	6.4% (28)	2.7% (12)	15.3% (67)
Billboards	7.3% (32)	10.5% (46)	15.8% (69)	15.3% (67)	51.0% (223)
Posters	7.1% (31)	16.7% (73)	24.9% (109)	14.9% (65)	36.4% (159)
Flyers	11.9% (52)	17.8% (78)	19.5% (85)	14.6% (64)	36.2% (158)
Social Media	64.3% (281)	11.9% (52)	6.9% (30)	1.8% (8)	15.1% (66)

Social media was the most used medium to get information whereby 64.3% (281) used it very often, followed by internet 62.7% (274), television 51.5% (225), radio 23.1% (101) and newspapers at the fifth position 13.3% (58). As for the top three, the trend was the same in Buea and Douala IV municipality.

Community radio, banners, notice board and HYSACAM magazine were mostly used in in creating public awareness on issues concerning community responsibility on issues of waste management in Douala IV municipality while it was television and social media in Buea municipality. In Buea Municipality, media notably Mount Cameroon FM privilege the slot broadcasted on the local vernacular ‘Pidgin’ as emphasized by this HYSACAM worker In Buea “*By pidgin news; HYSACAM sends public announcement to the population on the proper waste disposal and management*”. According to Tichenor, Donohue andOlien et al at the University of Minesota (1970), the theory Knowledge Gap Hypothesis believed that the increase of information in society is not evenly acquired by every member of society. Rather, people with higher socio-economic status (SESS) tend to have better ability to acquire information (Weng, 2000). This could explain the place occupied by proximity news sources such as community radio and social media in the creation of awareness on waste disposal and management in this study context. In this perspective, Hoffman (2013) resolved that it is the media which keeps the people updated and informed about what is happening around them and the world. Mass media therefore, aimed at reaching a very large market, such as the entire population of a country. By contrast, local media covers a much smaller population and area by focusing on regional news of interest, while specialty media is provided for particular demographic groups. These contrasts in sources of news were highlighted in this study. Sharma (2013) further emphasized that People use different communication medium according to their interest and availability.

Media outlet have slots or provisions in creating public awareness on waste management

Journalists were generally of the opinion that media outlets have slots or provision in creating public awareness on waste management (88.5%).

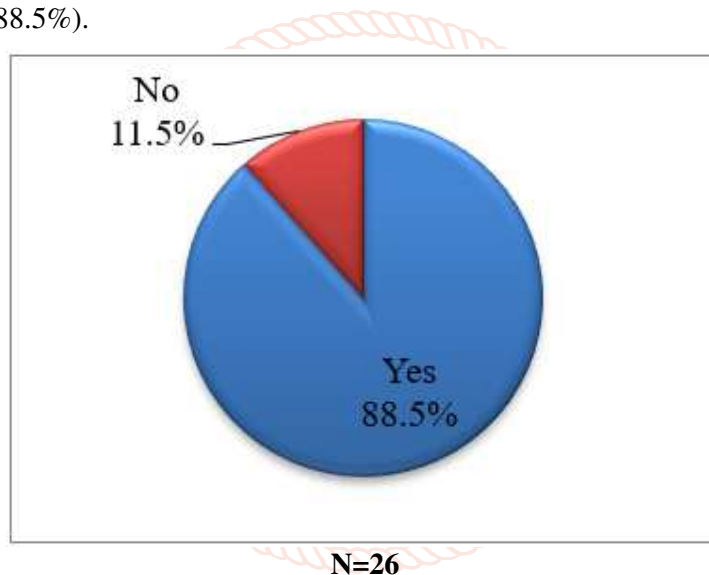


Figure: Media outlets have slots or provision in creating public awareness on waste management as perceived by journalists

Impact of media on waste management awareness

It was generally perceived in both Buea and Douala IV municipalities that media have played a role in creating public awareness on issues concerning waste management with proportions of 74.8% (169) and 76.9% (336) respectively. The role of the media in any society thus, is to investigate and share information and ideas, concerning issues of public interest as well as political, economic and cultural life of the people (Barua, 2011).

Table: Media has played a role in creating public awareness on issues concerning waste management, comparing between Buea and Douala IV municipalities

Media has played a role in creating public awareness on issues concerning waste management	Buea		Douala IV		Total	
	n	%	n	%	n	%
Yes	169	74.8	167	79.1	336	76.9
No	31	13.7	23	10.9	54	12.4
Not aware	26	11.5	21	10.0	47	10.8
Total	226	100.0	211	100.0	437	100.0

χ^2 -test: $\chi^2=1.216$; $df=2$; $P=0.545$

Table: Have ever been sensitized or educated through the media on issues concerning waste management, comparing between Buea and Douala IV municipalities

Have ever been sensitized or educated through the media	Buea		Douala IV		Total	
	n	%	n	%	n	%
Yes	212	93.8	203	96.2	415	95.0
No	13	5.8	4	1.9	17	3.9
Not aware	1	.4	4	1.9	5	1.1
Total	226	100.0	211	100.0	437	100.0

χ^2 -test: $\chi^2=6.252$; $df=2$; $P=0.054$

Inhabitants in the Buea and Douala IV municipalities agreed to have been sensitized or educated through the media on issues concerning waste management with proportions of 92.8% (212) and 96.2% (203) respectively. Sharma (2013) earlier argued that the media plays a very constructive role in today's society and also an important role in public awareness and collecting the views, information and attributes towards certain issues. The author further substantiated that the media is there to inform, educate, interpret, entertain and perform the role of social responsibility to the audience. Media has become an essential daily needs and is playing an outstanding role in creating and shaping public opinion as well as strengthening the society. The role of the media in any society thus, is to investigate and share information and ideas, concerning issues of public interest as well as political, economic and cultural life of the people (Barua, 2011). These authors thus emphasize the outstanding role of media in creating awareness in various social issues.

Media medium used to get information on waste management

The media medium used in getting information on waste management was mostly social media, 59.0% (125), followed by television 47.6% (101), internet 47.2% (100), radio 17.0% (36) and newspapers for the top three. This trend was the same in Buea and Douala IV municipalities. Diverse media sources were then used in creating awareness, which is an indicator of efficiency, thus reinforcing the stance of Lippman (2012) who perceive media as the watchdog to the society in order to protect public interest against malpractice in creating awareness as it has remained an integral part of human civilization.

Adequacy of media creation of public awareness on waste disposal and management

Table: Media medium used to get information on waste management

Media	Very Often	Often	Sometimes	Rarely	Never
Magazines	6.6% (14)	5.2% (11)	8.0% (17)	21.2% (45)	59.0% (125)
Newspaper	9.0% (19)	11.8% (25)	18.4% (39)	16.0% (34)	44.8% (95)
Radio	17.0% (36)	25.0% (53)	18.9% (40)	5.7% (12)	33.5% (71)
Television	47.6% (101)	19.3% (41)	17.0% (36)	2.4% (5)	13.7% (29)
Internet	47.2% (100)	16.5% (35)	9.0% (19)	3.8% (8)	23.6% (50)
Billboards	1.9% (4)	10.4% (22)	12.7% (27)	16.5% (35)	58.5% (124)
Posters	8.0% (17)	11.3% (24)	22.2% (47)	15.1% (32)	43.4% (92)
Flyers	7.1% (15)	16.5% (35)	16.0% (34)	9.4% (20)	50.9% (108)
Social Media	59.0% (125)	17.5% (37)	6.6% (14)	1.4% (3)	15.6% (33)

Community members' perspectives**Table: Media channels that have adequately contributed in creating public awareness on issues**

Municipality	Stats	Extent to which media has contributed in raising public awareness on issues concerning waste management			Total
		Very large extent	Small and very small extent	Undecided	
Buea	n	144	51	17	212
	%	67.9%	24.1%	8.0%	100.0%
Douala IV	n	147	45	11	203
	%	72.4%	22.2%	5.4%	100.0%
Total	n	291	96	28	415
	%	70.1%	23.1%	6.7%	100.0%

$$\chi^2\text{-test: } \chi^2=1.497; \text{ df}=2; \text{ P}=0.473$$

Cumulatively, 70.1% perceived that media have contributed in raising public awareness on issues concerning waste management to a very large or large extent and this trend was almost the same between Buea and Douala IV municipality. The Journal of Social and Political Psychology, (2013) equally confirmed that the media plays a central role in informing the public about what happens in the world, particularly in those areas in which audiences do not possess direct knowledge or experience

Media channels that have adequately contributed in creating public awareness on issues concerning waste management was mostly television with proportion of very adequate of 52.9% (231). This trend was the same in Buea and Douala IV municipalities. It is also absolutely true that media is playing an outstanding role in strengthening the society by informing, educating and entertaining the target audience as emphasized by Wharton, (2012) and Lewis (2007). The question of adequacy was equally emphasized upon by Marshall McLuhan (1967) information should be delivered to the targeted audience on time and accurately.

Table: Extent to which media have contributed in raising public awareness on issues concerning waste management, comparing between Buea and Douala IV municipalities concerning waste management

Media	Very Adequate	Adequate	Inadequate	Very Inadequate	Not Aware
Magazines	9.4% (41)	16.7% (73)	12.1% (53)	6.4% (28)	55.4% (242)
Newspaper	14.2% (62)	25.2% (110)	10.3% (45)	6.4% (28)	43.9% (192)
Radio	27.7% (121)	28.1% (123)	9.4% (41)	2.1% (9)	32.7% (143)
Television	52.9% (231)	22.0% (96)	6.2% (27)	1.4% (6)	17.6% (77)
Internet	43.0% (188)	17.6% (77)	5.9% (26)	2.7% (12)	30.7% (134)
Billboards	3.7% (16)	12.1% (53)	14.4% (63)	7.8% (34)	62.0% (271)
Posters	6.9% (30)	19.5% (85)	14.2% (62)	9.4% (41)	50.1% (219)
Flyers	7.6% (33)	16.5% (72)	14.6% (64)	9.2% (40)	52.2% (228)
Social Media	45.8% (200)	19.7% (86)	5.5% (24)	3.4% (15)	25.6% (112)

Stakeholders' perspectives

Traditional leaders were significantly more satisfied with the Douala IV municipality context with a proportion of those that perceived that media has created public awareness on issues concerning waste management in the municipality to a very large extent of 83.3% as compared to 7.7% for Buea municipality. As for municipal council workers, their opinion was almost balanced with proportion of those that that perceived that media has created public awareness on issues concerning waste management in the municipality to large extent of 83.3% and 90.0% for Buea and Douala IV council respectively. HYSACAM workers were significantly more satisfied in Douala IV municipality with proportion of those that that perceived that media has created public awareness on issues concerning waste management in the municipality to large extent of 52.2% as compared to 66.7% of

small extent in Buea municipality. According to McCombs, (2005), who has done extensive research in the field of agenda setting believes that repetition of an idea day after day by the media, will make the idea stand out as very important in other words, if an idea or an issue is given prominence by the media, it is likely going to be considered as important by the public. Stakeholders were then very right to emphasize on the importance of media, and notably closed media such as community radio and community members highlighting social media on their part.

Adequacy of media contribution in creating public awareness on issues concerning waste management in the municipality

Though traditional leaders perceived that the coverage for awareness was far better in Douala IV municipality, they perceived more that it was more adequate in Buea municipality with proportion of 52.4% as against 25.0% in Douala Municipality. As for municipal council workers, the trend was also the opposite of that of coverage as they perceived the coverage in Buea municipality to be more adequate as compared to Douala Municipality with proportion of 100% (18) and 75.0% (15) respectively, thus aligning with the traditional leaders. HYSACAM workers were generally satisfied with the adequacy of media contribution in creating public awareness on issues concerning waste in both Buea and Douala IV municipality. Journalists were generally of the opinion that media outlet has created awareness on issues concerning waste management and this to a moderate extent as cumulatively 50% of them said to a very large and large extent, and 62.5 perceived this coverage to be adequate. However, journalists perceived the coverage not very satisfactory as less than majority (38.5%) cumulatively perceived it adequate or very adequate. This adequacy in information sharing and creation of awareness was equally pointed out by several authors. It was earlier argued that media concentrates on a few issue and subjects leads the public to perceive those issues as more important than other issues (Agenda Setting Theory, 2012). In the same line, Lyenger & Kinder (1987) clarified that agenda setting occurs through a cognitive process known as accessibility which implies that the more frequently and prominently, the news media covers an issue, the more that issue becomes accessible in the minds of the audience.

Feedback mechanism

Traditional leaders' perspectives

Table: Inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management by municipality, traditional leaders' perspectives

Municipal council	Stats	Inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management		Total
		Yes	No	
Buea	n	7	14	21
	%	33.3%	66.7%	100.0%
Douala	n	0	20	20
	%	0.0%	100.0%	100.0%
Total	n	7	34	41
	%	17.1%	82.9%	100.0%

$$\chi^2\text{-test: } \chi^2=8.039; \text{ df}=1; \text{ P}=0.000$$

Traditional leaders generally disagreed to the fact that inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management and the situation was significantly ($P=0.000$) worse in Douala IV municipality with proportion of disagree of 100% (20) as compared to 66.7% (14) for Buea municipality.

The trend of traditional leaders' perceptions contrasts highly with that of municipal council workers as majority of them in both municipalities were of the opinion that inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management. HYSACAM workers in their majority also agreed in both municipalities. Though there is pressing need for the media to continue as a priority of informing, educating and sensitizing the public on the dangers of poor hygiene and sanitation as well as poor waste disposal and management, the population should equally show interest and participatory mind which were highlighted as hindering factors in this study.

Municipal council workers' perspectives

Table: Inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management, as perceived by municipal council workers

Name of municipal council	Stats	Inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management		Total
		Yes	No	
Buea Council	n	12	6	18
	%	66.7%	33.3%	100.0%
Douala IV council	n	12	8	20
	%	60.0%	40.0%	100.0%
Total	n	24	14	38
	%	63.2%	36.8%	100.0%

χ^2 -test: $\chi^2=0.181$; $df=1$; $P=0.671$

HYSACAM workers' perspectives

Table: Inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management, as perceived by HYSACAM workers

Municipality	Stats	Inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management		Total
		Yes	No	
Buea	n	3	0	3
	%	100.0%	0.0%	100.0%
Douala	n	11	6	17
	%	64.7%	35.3%	100.0%
Total	n	14	6	20
	%	70.0%	30.0%	100.0%

The majority trend indicates that inhabitants of the municipality are giving feedback to the institution on slots or publications on issues concerning waste management which is a deliberate action indicating satisfactory level of consciousness and commitment in a participatory perspective. This is substantiated by Ajzen and Fishbein (1980) in the theory of planned behaviour as the authors argue that it is a theory which predicts deliberate behaviour, because behaviour can be deliberate and planned.

Journalists' perspectives

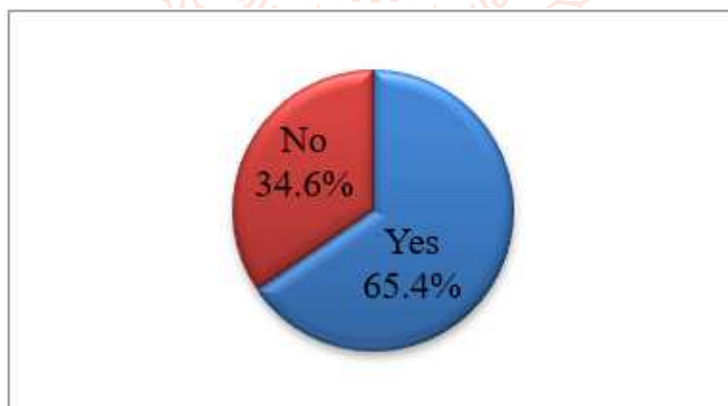


Figure: Do you receive any feedback from the public on your slots or publications on issues concerning waste management broadcast or published by your media outlet, as perceived by journalists

Challenges faced by the media in an attempt to play its role in public awareness on waste disposal and management

Population not sufficiently sensitized on waste management was the most highlighted problem and there was therefore need for more sensitization.

Challenges faced by media institutions in their attempt to cover issues in the domain of waste management, and how these challenges can be overcome

Numerous challenges were highlighted in this perspectives among which population not sufficiently sensitized on waste management; the inadequate

coverage as all quarters are not covered by media; the inadequacy of information, education or knowledge on waste management of the population, lack of practical education; inadequate waste disposal facilities; inadequate finance to support waste management; population laxity about hygiene or waste management; the inadequate sensitization tools; the inadequate sensitization time; the inadequate coverage of waste disposal due to poor road network; inadequate waste disposal as waste are not removed on time; inadequate reporting, actualization as media should be current in their reporting; difficult access to social media due to internet or connection challenges and cost; inadequate sensitization language; fake news on social media; bad governance; inadequate informative culture as people don't get inform through media; inadequate control / monitoring of the population with respect to waste management and hygiene; inadequacy of information, education or knowledge on waste management of media; inadequate coverage of waste disposal due poor street light; the appropriate audience not being targeted; inadequate press freedom as media are afraid of dissemination information that portray a gloomy picture of the country even if it is reality; inadequate collaborating with media as the population don't inform media about what is going on in their community; neglect of rural areas; lack of implementation of objectives; illiteracy reducing access to information; and inadequate media personnel.

General Conclusion

This study was aimed at investigating the role of media in public awareness creation on issues concerning waste disposal and management in Buea and Douala of the Southwest and Littoral regions of Cameroon. This was in recognition of the fact that for the past few decades, Cameroon just like other developing countries in the Sub-Saharan Africa is experiencing rapid growth in the generation of wastes (Minghua et al., 2009 and Guerro et al., 2013). The burden of waste disposal and management is ever growing given the constant population expansion and urban growth. Thus waste disposal and management has become a matter of great concern to most towns and cities and it is slowly becoming apparent that most towns and cities management is collapsing, which is having a significant impact on both the environment and public health (Pichtel, L. 2005). Such major contemporary project cannot be handled by the government alone, thus the participatory approach involving all the stakeholders, and more particularly the formal public private partnership approach become a prerequisite. Such participatory approach can only be effective if all the stakeholders

notably the public has been empowered to cooperate toward achieving the set goal. In this perspective, media can play a paramount role. Media therefore, can be in print form that is through newspapers, books, magazines etc. With the help of radio and television, listeners and viewers can get information related to daily life and current happenings. It also includes an electronic form for spreading information which is one of the most used media in mass communication. The findings of this study indicate that stakeholder generally perceived the importance and use of media in creating awareness on waste disposal and management but were mildly satisfied with the adequacy of the process. They use different communication medium to create awareness on waste disposal and management according to their interest and availability. For instance, in Douala, HYSACAM uses mostly newspaper which is a published magazine by the waste disposal company itself while in Buea, they use mostly radio with particular focus on the slot broadcasted in the local vernacular which is Pidgin language. The question of proximity has made traditional leaders to resort mostly to community radio while community members resorted mostly to social media. Municipalities take advantage of nearly all the media type though with particular interest radio, followed by television then social media. Journalists give opportunity to all the stakeholders to take advantage of their service to create awareness and take this initiative themselves and were generally of the opinion that media outlets have slots or provision in creating public awareness on waste management. The main challenge perceived by the journalists was poor or no audience, that is people interested in news related to waste management, environment, hygiene and sanitation. They suggested as response measure adequate sensitization and education of the communities on waste management; more attractive slots, programmes or mechanisms to gain the attention of people; government support in community education and sensitization. The main suggestion of the journalists to improve on waste management was community awareness. Public awareness creation is an integral part of media in the fight against improper waste disposal and management. Creating awareness among the community and planners has been of paramount importance towards a healthy environmental and public health practice.

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