Traditional Technology: Community Addressing System for Participation in Ethiopia

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Abstract-**The purpose of this study was to explore how local governments can use traditional communication technology tools for community engagement to increase the decision-making process at the grass-root level. We employed qualitative and quantitative mixed research approaches based on convergent parallel design. Stratified, simple random, purposive, and snowball are employed as sampling techniques. We applied thematic analysis for qualitative data, and the quantitative data analysis was made through SPSS 16 version. Our proof finding shows that in the Gambella region of Ethiopia, personal administrative networks overlooking public microphones, telephone, and public notice, and these traditional communication menses have become a pre-curser of information dominantly continued than modern media- Facebook, mobile, digital radio broadcast services due to corruptions, illiteracy, and poverty. The empirical findings show that based on the media richness theory, the traditional technological media are not accessible in all corners of the community. Surprisingly, as social network theory and analysis dictates, we found true that the local administrators' personal networks are a dominant medium to inform the public rather than modern platforms like the Internet. In this digital age, the general public should be aware of relevant and novel internet-based platforms to improve the community's ability for local decision-making. Due to its highest temperature and conflict-prone area, many researchers are not daring to undertake scientific research in the Gambella region of Ethiopia. It implies that this study brought new emerging issues and tried to fill gaps in the literature and practice. It provided insights that can inform policy development.**

Index Terms-**Technology, Media, Local Government, Community, Decision-making, Ethiopia**

1. INTRODUCTION:

One of the most important aspects of community engagement is that the public should be informed through either modern or traditional communication technologies (1) In the context of Africa, local governments are expected to use traditional technological communicative tools to participate in their community in the local decision-making process that affects them (2). These traditional technological tools could be the telephone, public amplifier[microphone], public notice or print media and others (3). If local government administrators are vibrant, they can use digital media in the form of web pages and websites, digital video, social media, electronic documents etc. however, the usage of these digital media by the public depends on the literacy rate and accessibility of the technology of that particular society(4). Considering this contextual fact, in this study, the researcher examined how the local governments effectively use traditional communicable technologies to inform and involve the public in the decision-making process in the Gambella region of Ethiopia. In the African context, research on some traditional technologies as a communication tool for participation is found in the dearth of literature(5). Hence, no previous research has directly investigated traditional technology as a tool for community participation in urban local government administration in Gambella region-Ethiopia.

Consequently, the main aim of this study is to explore how traditional communication technology tools can be used by local governments for community engagement to increase the decision-making process at grass-root level and to develop relevant recommendations for the problems observed. Following that, traditional and modern technology communication tools are briefly presented. Next, the research considers research methodology. Then, the presentation of our results and discussions will be elaborated. Last, we discuss the implications of the findings as a conclusion based on the broad literature and theoretical expectations.

Traditional and modern technological communication tools used in reaching the public. Effective community participation requires that citizens be informed. They must be willing and able to be involved-having the interest, the time, and the opportunity or access(6). However, critical influential decision makers are not willing and able to be involved in the community decision-making process due to a lack of proper information. Investors, scholars, civil servants and other community members may not give their time, energy, and money as a priority call for participation (7). The traditional communication tools for community participation do not consider the unique needs of people who cannot read and write, people with disabilities, women, and other disadvantaged groups(8). If some part of the community heard about the information, many sections of the society felt they were not informed by their local government networks with which they had never had any contact. In this case, the situation of any decision to implement by mobilising the whole community is somewhat difficult. The local administrators need to find the proper communication tools to request participation from the right person or community. In the case of marginalised people, youths, women, and key influential people, the community must find the proper channels (9). Mustafa & Al-Abdallah (2020) pointed out that traditional communication tools such as public notice, telephone, personal networks (local chiefs' focal persons), and public microphones (public amplifiers) are used as antecedents of community participation. In these courtiers, due to a lack of access to the Internet and communication technology (ICT), local governments are not using these platforms as communication tools. Lack of access or limited digital and

ICT literacy also compromises the local community's effectiveness, impact and sustainability in participating in significant issues (11).

Traditional media in Africa for communication and information sharing in public areas have been used. Traditional media as a public addressing system include radio, broadcast television, cable and satellite, print, and billboards (12). These forms of advertising have been around for years, and many have had success with traditional media campaigns. Some of them could be amplifiers, telephone, newspapers, magazines, oral, town criers, beating drums, and fire lighting. In the context of Ethiopia, the Local Government authorities have more responsibility to do their best to send a message to their community to involve in the decision-making process on an important issue that affects them. By establishing a formal or informal communication link, the local administrators should ensure that their message gets to the targeted community or members through public notice, electronic media, print media, newsletters, or other tools (13).

New media as a modern technological communication tool can best be described as digital channels that have gained popularity in advertising in the last decade. As more and more consumers rely on their cell phones for everything, new media has become an increasingly effective way to advertise (Shah M., 2020; ITU, 2021b). New media encompasses internet-based advertising, such as banner ads, social media, and apps (13). This form of media can be highly targeted, even allowing businesses to reach consumers as they enter their store, for example, using cell phone push notifications. Targeted ads are another popular form of new media– if someone has ever noticed advertisements related to his/her recent search history, that person encountered a target. Today, information is spreading and expanding with an extraordinary speed through electronic media and other computer-driven devices (Ibid). The Internet, cable televisions, and video cassette records are some of the examples shaping communications (15). Advanced-based computer services such as the Internet, electronic newspapers, wireless telephones, consumer computer networks, digital radio broadcasting, direct broad caste satellites and others are good examples of technologies shaping world communication and redefining community engagement (16).

Regarding the theoretical lens, communication theory refers to the body of theories that constitute our understanding of the communication process. Communication theory varies, and three views are observed to work the process. These can be in the form of a one-way process, a two-way process, and an omnidirectional diachronic process. Many communication theories developed during community studies in technological media (17). Adaptive structuration theory that focuses on systems and structures exist in a dual relationship that creates a structuration process; Computer-Mediated Communication (CMC) centres on limiting the level of synchronicity of interaction by narrowing time and space; information theory has a tenet of transmission of the message involved sending information through electronic signals; network theory and analysis that concentrates on interpersonal linkages in sharing information and others could be mentioned as an example of communication theories (18). Though all these theories are important, the most helpful theory for this study is the Media richness theory and network theory and analysis.

The first proponents of the theory of Media Richness were made by(19). Media Richness Theory is based on contingency theory and information processing theory. The Core assumption of this theory is that "communication media have varying capacities for resolving ambiguity, negotiating varying interpretations, and facilitating understanding". To illustrate the capacity of media types, the personal focus of the medium is taken as a criterion to evaluate the richness of the media Face-to-face communication followed by telephone, electronic mail, letter, note, memo, special reports, and finally, flier and bulletin. Social networks theory and analysis credited by Barnes in the early 1950s. The core idea of Network analysis (social network theory) is beliefs or behaviours affected by the social structural relationships between or among persons, groups, or organisations. Individuals who are interconnected and networks will establish a pattern of the network, what we call communication networks, that will be used to share information based on the already created human networks (21).

II. METHODOLOGY:

Our study aims to analyze how local governments can use traditional communication technology tools effectively for community engagement in decision-making. The study was conducted from 30 January 2020 to 30 June 2022 in the Gambella region of Ethiopia, and we preferred to conduct our study in local urban areas due to the heterogenicity of the communities and the high population density than the surrounding rural areas.

We applied mixed-method research. Survey questionnaires, focused group discussions, and semi-structured interviews were utilised as the data gathering methods in this study. The study used an exploratory and descriptive research strategy. The researcher gathered first-hand information from households, government officials, and civil groups. To determine the sample size, 442, for quantitative research for this study, the formula developed by Krejcie, R. V., & Morgan, D. W. (1970) was used. A combination of purposive, stratified, and random sampling was employed. In the qualitative strand, snowball sampling was used to select participants for FGDs and key informants. Data were analysed thematically and with SPSS 16 Version. To ensure the research's reliability and validity, we made a pilot test. The pilot test, as we expected, resulted in the elimination of certain questions and the refinement of others. During the research process, we were concerned about ethical issues in this research project to the extent non-biased, confidential, informed consent, willingness and other ethical principles throughout the entire work

III. RESULTS:

The participants were asked to identify the communication tools used by local governments to call or inform on the decision-making process on local issues. The result is presented in table 1.

Table 1: Traditional communication methods used by local governments to inform the public

Media	Frequency	Percent (%)	Valid Percent	Cumulative Percent
Public Notice	35	8.1	8.1	8.1
Public Microphone	118	27.4	27.4	35.6
Telephone	16	3.7	3.7	39.3
Local Administrative Networks	252	58.6	58.6	97.9
DK/CS	9	2.1	2.1	100
Total	430	100.0	100.0	

Source: 2021 survey data (Chanie, M. 2022, unpublished).
Concerning traditional media as a communication tool to inform the public, as indicated in Table 1, 58.6% of respondents said they got information about future decision meetings through local kebele administrative focal persons. The remaining information was communicated by the public microphone (27.4%), public notice (8.1), and telephone (3.7%). At the same time, 2.1% of respondents did not know the communication methods used.

Having in mind the usage of the traditional media, the document analysis was made to find how modern communication media effectively used by local governments. For instance, does the Internet easily accessible to the local community to be well informed and to make them active participants in the decision-making process that can affect them? Consequently, as table 2 indicates, in Africa, including the remote parts of Sub-Saharan Africa in which Ethiopia is part of it, there is a possibility to provide internet coverage through satellite broadband connectivity. However, In Ethiopia, in the Gambella region, communication technologies offered at the lowest rate due to high illiteracy rates. In the focus group discussion, the participants' exclaimed that the budget that allocated for internet infrastructures and other digital media inputs frequently mismanaged and wasted due to the prevalence of corruption. This forced the local administrators to use traditional media as the only alternatives to get the community for consultations. One informant strongly argued that:

The deep-rooted poverty in our community couldn't allow the peoples to get an access of Internet and other modern media that costs some extra money for mobile and related accessories. Hence, the community forced to inclined to give their ears for information more on traditional based medias than modern ones.

Table 2: New media: Internet as a communication platform

Name	2019 internet access at home	Individuals using the Internet	Men	Women
World	57.4%	51.4%	55.2%	48.3%
Africa	14.3%	28.6%	37.1%	20.2%
Ethiopia	25%	20.6%	_	_
Gambella Region	12%	9%	9%	4%

Source: Document analysis[1]
The majority of informants interviewed stated that either traditional or modern ways of communicative technologies are important. How local communities use this communication meanness depends on the context in traditional and modern society, where illiteracy and advancement of economic and technological growth varies. Additionally, in Africa, widespread corruption, especially among the ruling elites, political conflicts based on ethnic differences, and weak structures to support and sustain the adoption of modern technologies (e.g., ICT) the worsening problem of the Internet or digital-based transformation in Africa

IV. DISCUSSIONS:
The existing survey on Africa in general and in Ethiopia, in particular, shows that although communication technology is increasing in Ethiopia at an alarming rate, it is limited to internet access. Still, local governments use traditional communication methods to inform the public about any decision-making process (21). The finding is similar to the study conducted by Research ICT Africa who concludes that individual use of the Internet as modern communication technology is lowest but increasing, and it is a recent history formally connected to the Internet in January 1997, with the ISP being the then Ethiopian Telecommunication Corporation, now Ethio-Telecom Most literate participants in a focus group discussion and interview forwarded alternative platforms like digital and internet-based communication tools relevant to catching up with youths to participate in decision-making. One key informant stated that local administrators have limited skill and knowledge about internet-based platforms to get online communities. Due to

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[1] The table source based on https://researchictafrica.net/publication/a-survey-of-ict-access-and-usage-in-ethiopia-policy-implications/ and Regional Annual Report of Gambella 2017/2018

this reason, they used offline access that only addresses some community groups. Though many of the services are given at the local government level and decisions are made offline, the Internet is essential as a communication tool for involving youths in community participation. The finding implies that the local governments communicated with their community using different fragmented communication tools except sending and receiving information through politically created networks. Regular vibrant communication tools that help open the community members' eyes are poorly designed. The media richness theory initially developed by Daft & Lengel (1984) describes how face-to-face media is more important than other traditional media types, resolving ambiguity and facilitating understanding among the people or the community—for instance, giving information to the local public. As media richness theory dictated, the practice of informing the public through personal administrative networks as face-to-face communication has been found in the Gambella region.

The interview with local administrators indicated that, for burning issues, there are some days they sent and received messages delivered through lower structure networks such as focal persons using development teams and 1 to 5 arrangements. Otherwise, they would announce regular activities and programs through a public microphone or amplifier, such as cleaning the surrounding environment, peace and security issues, safety net, etc. However, there are some cases, as one key informant indicated, to call through phone call those figurative persons to make them participate without the consent of the community. The informant added that using telephones to inform the community seems to work for those communities with access to resources. The participant added that the less privileged members of the community tend to be hindered from directly accessing information and, in the long run, from being involved in the decision-making process.

Participants in the focus group discussion reflect those binding legal responsibilities such as paying taxes on time are mostly announced through public notice or amplifier. The discussants added that party mobilisation through kebele administrative networks are dominant communication tools for two reasons: fewer populations that allow disseminating information, and the culture of governing political party through its members must coordinate information sharing. As observed in the field, most community members heard information on the forthcoming meetings through kebele administrative networks because these networks are imposed by the ruling party coercively and culturally long rooted ethnic based networks. The five indigenous communities have their kinship networks during peace and wartime. Key informants confirmed that the problem is not about the network structures but who runs these networks. The social network theory and analysis developed by Barnes in the early 1950s dictates that interconnected individuals and networks will establish a network pattern and get well informed. Similarly, in this study, although all traditional media are used fragmentedly by local administrators, personal administrative networks found their highest rank in informing to make the community involved in the major decision-making process for the progress of local governance.

V. CONCLUSION:

This paper's objective explored how local administrators used traditional technological communication tools to engage their community when deciding on major issues. In the region of Gambella-Ethiopia, we observed that using communication tools arbitrarily costs a lot of missing information, sending or receiving wrong messages from the community to local governments and vice versa. Regularly vibrant communication tools had not been designed. The interviews revealed that the communication tools used to send and receive messages and information are not designed correctly in a well-defined manner for their constituents. Due to this fact, except for fetching information from their communities, the local administrators could not give enough attention and chance to let the community choose alternatives and decide the best way they wish to be done.

Most of the respondents in the interview reflected that modern technology communication mechanisms are very important to simplify their life and transfer global technologies. Nevertheless, due to corruption, illiteracy, and poverty-related problems, modern media such as face book, mobile, and digital radio broadcast services are inaccessible to their villages. Sometimes there are some days to have an opportunity, but there is no regularity.

No perfect media can inform the public and decide on the issue that affects it. Traditional or modern media can address the community if properly used based on the context. However, if any community wants to participate effectively, it must be appropriately informed. In this regard, ICT and the Digital community announcing mechanisms at the main square of each town should be displayed or used as a platform.

Indeed, this study is highly significant and helps local administrators, institutions and policymakers as informative input to design suitable technological communication tools to increase local communities' involvement in the decision-making process. Regrettably, because of the budget limitation, the study was designed conventionally to explore and describe only some aspects of traditional technology communication tools compared to some modern communication platforms with a participation perspective. Thus, our generalizability is not robust enough to show the whole process of technological communication tools, and to this end, further research needs to be conducted.

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