TABLE OF CONTENTS

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Liberian Multi-party Democracy: Multi-ethnic Governance Experience in Historical Perspective

Leeway Dave Karngbeae

INTRODUCTION AND GLIMPSE AT LIBERIA'S INDIGENOUS PERIOD

Present day Liberia at pre-colonial era, was peopled originally by many indigenous, ethnic groups comprising the Bassa, Belle, Dan (Gio), Dei, Gbandi, Gola, Grebo, Kissi (Gizzi), Kpelle, Krahn, Kru, Lorma, Mah (Mano), Mandingo, Mende, and Vai, with the Gbi and Sapo tribes omitted from historical records for reasons not specified. These tribes had their own unique cultural conventions that kept them together. For example, music and dance had key roles in "uncontaminated" African Society, as they were ever present at birth, initiation, marriage, and death as well as appearing at the time of recreation (Rodney, 2005).

These indigenous groups were joined by the freed slaves and their descendants ---the Americo-Liberians in 1822, and later by the "Congoes" or "Recaptured" Africans who were subsequently resettled in what is known as "Congo Town" in Monrovia. The Congoes and the Americo-Liberians were two distinct ethnic groups between whom existed social or rather "racial" barriers. The "recaptives" settlers fit poorly into the Liberian colonial society. Unlike the American free blacks and emancipated slaves, they spoke no English, and their own origin varied widely, thus drifting them to the bottom of the colonial social order (though they were still above the indigenous population) (Woah-Tee, 2007).

New groups consisting of the Fulani, Guinian Kpelle, Guinian Mandingo, Nigerians, Ghanaians, Ivorians, etc. are flocking into Liberia ---documented or undocumented. One thing is certain: The founders of Modern Liberia, the freed slave settlers, that is, overstated that "Liberia was the Beacon of Hope for All Africans who seek a Home Freedom," something that has made the country vulnerable to illegal and uncontrolled immigration. According to Dirke Hoarder however, "the history of human is the history of migration."

Among the Indigenous Ethnic Groups, power was centered on an agnatic family group with the male sibling, usually an elderly male emerging as the "Chief" whose selection was dictated by tradition (UNDESA/UNDP, 2000). This paternal kinsman (the chief), a subconscious democrat, exercised unautocratic authority because his decisions were consultative, participatory, and collaborative. His authority and decisions were balanced by acquiescence of the Council of Elders, made up of powerful "poro and sande zoes, bodios, or high priests," who presided over the "Right of Passage" in adherence to protocols and served as advisors in reaching major decisions concerning the clan and chieftaincy.

To this end, Article 5 of the United Nations Declaration on the Rights of Indigenous Peoples states that the people have the right to maintain and strengthen their distinct political, lega l, economic, social, and cultural institutions, while retaining their right to participate fully, if they so choose, in the political, social, and cultural life of the State.

With the dominance of Western (American) Civilization and its subsequent contamination of African culture, the social and political conventions became subordinated. This meant that

Liberian colonial, commonwealth, and independence constitutions dating from 1825 to 1980 would exclude the indigenous population from their respective provisions---disenfranchisement, that is. As Guannu (1987), put it, the "Rock Town Boys and the Political Machine" controlled three fourth of Liberian economy. The "Rock Town Boys," the Free Black Immigrants known as Americo-Liberians—generators of political ethnicity in Liberia.

A SYNOPTIC FOCUS ON THE INTRODUCTION OF ETHNICITY IN THE GOVERNANCE OF LIBERIA

The concept and practice of multiparty democracy has yet to be understood and given space in the political life of nations and countries referring to themselves as democracies—Liberia being no exception. Conceptualizing it as the parent of the varying systems of government that one may perceive, Isaac D 'Israeli, reflected in Trembly et al. (2004), defines "politics" as the art of governing mankind by deceiving them. Hence, many politicians, leaders and nations are pretentious and pseudo democrats and democracies, bent towards ethnicities, nepotism, interpersonal relationships, loyalties, favoritism, religions, among others.

Ethnic sentiments and collaborations are therefore generally at the heart of African politics, thus making it challenging for many nations across the continent to attain national reconciliation and unification. This has led to the mushrooming of political parties with similar or identical manifestos which crosscut. Why become fragmented if a political party comprises individuals and groups who share the same view on how government should be structured and operated? However, Downs, in his book "Economic Theory of Democracy, reflected in Trembly et al. (2004), defines political party as a team of individuals who are united for the purpose of capturing political power.

The ethnic dominance in Liberian politics is structural or endemic and dates remotely to the founding of the state when the "BENEVOLENT ARISTCRATES" in Southern United States through the American Colonization Society introduced in 1822 a governance practice which placed the MULLATOS above other freed slaves who were resettled in what would later become Liberia. Of course, this was part of the social legacy of the South which maintained that anything close to the "Master Class" both in spirit and appearance would be more preferred than the one that was not (Johnson & Roak, 1982), reflected in Beyan (1989),

The legacy of ethnic politics was soon to be implanted into the Colony of Liberia from 1822 to 1839; the Commonwealth of Liberia from 1839 to 1847; Independent Liberia from 1847 to 1980, from whence Ethnic Politics continues to date with Indigenous Liberians in charge of the "Political Machine." In the Liberian Colony, the "Mulattoes" or light-skinned settler Liberians were given preferential consideration by the American Colonization Society (ACS) over the dark-skinned settler Liberians and were second to the white ruling class in the social status in the colony (Beyan, 1999). By the same token, the dark-skinned settlers were superior to the "Congoes" or "recaptured" Africans to whom the "Indigenous" people were subordinate.

Established by the American Colonization Society, Colonial Liberia was administered by successive agents who were granted exclusive authority by the Colonial Constitution of 1825 and assisted by a Colonial Council. With this exclusive authority, the agents punished colonists and indigenous populations who violated the ordinances and regulations of the colony. In founding Liberia, the ACS was the advocate, the fundraiser, and the "overseas mission," while the US Government was the principal source of funding, the protector, and the legitimizer of the

enterprise (Dunn, 2009). Hence, all influences and impulses regarding the administration of the colony were generated from and by the United States of America.

As it was, the Colonial Constitution neither made mention of nor permitted the indigenous inhabitants who shared the colony with the settlers to participate in the decision-making and governance thereof. The exclusion of the indigenes and nonparticipation by the settlers in the governance of the colony were characteristic of the colonial period which ushered in the nation's governance problems (UNDESA/UNDP, 2000).

Succeeding the Colonial Period was the Commonwealth of Liberia in which a few modifications or adjustments obtained when the ACS appointed a governor and accorded the settlers the privilege to elect a deputy governor. Eventually in 1840, the settlers were allotted seats on the Commonwealth Council and at the same time granted the right to elect the governor of the Commonwealth, while the indigenes continued to be disenfranchised, something which extended into the independence period beginning 1847. In the view of Aristotle, politics arise in organized states which recognize themselves to be an aggregate of many members, not a single tribe, religion, interest, or tradition (Trembly et al., 2004). This Aristotelian doctrine was neglected by the ACS, or the exclusionary tendency was structural and therefore deliberate.

In July 1847, the Commonwealth became an independent republic with a constitution which provided for three branches of government ---Legislature, Executive and Judiciary, and advocated a responsive democracy that would shoulder the interests and aspirations of the entire population of Liberia to the extent of transparency and accountability. This ultimately, required good governance that would take preeminence over every other thing else. By "governance" is meant a system of values, politics, and institutions by which a society manages its economic, political, and social affairs through interaction within and among the state, civil society, and private sector (Olowu & Sako, 2002).

However, the Declaration of Independence again excluded the indigenous people of Liberia as its preamble read in part: "We, the people of the Republic of Liberia were originally inhabitants of the United States of America. We contributed to the resources of a nation that gave us no protection." They proudly adopted the declaration that "The Love of Liberty Brought Us Here" as Liberia's national motto (Woah-Tee, 2007), which had sparked controversy and debate ever since among indigenous academics, scholars, thinkers, and researchers. The independence document did not only fail to include the natives who had never been inhabitants of the United States but called them "barbarians" (Johnson, 1991).

The worst was yet to come supervening independence of the young republic: The lack of educated, industrious, and enterprising leadership qualities, coupled with the apathy of the republic's young generation of citizens, influenced the quality of life and social order which resulted in limitations that were detrimental to the attainment of a common national purpose and mission for the welfare of all Liberians (National Concept Paper, 1999).

Prominent among these were young Americo-Liberians eager for public sector employment because of the opportunities for illegal enrichment at the expense of national interest (UNDESA/UNDP, 2000). Still, the appointment of unqualified public officials, coupled with the tendency of local and national politicians using money, vis-a-vis "cash violence" and influence to be elected or appointed to public office have contributed to the nightmare which haunts Liberia's

political, economic, and social spheres to date. Worst though, the monies used to execute these ambitions are for the most part extorted from government, institutional or organizational coffers, grounded by impunity.

Such legacy was inherent among the indigenous population that took over from the descendants of the freed slaves in the bloody coup d'état staged by 17 enlisted men of the Armed Forces of Liberia headed by Master Sergeant Samuel K. Doe on April 12, 1980. This coup toppled the one and a half-century old True Whig Party (TWP) government presided over by William Richard Tolbert, Jr. who was executed along with 13 of his officials.

But the inadequacies and contradictions which are endemic of military regimes soon engulfed the Liberian political and governance environment with the Master Sergeant promoting himself to the rank of "Five-Star General." He eliminated his rival junta partners and elevated his ethnic group along with his allies--- a new elite group which rapidly consolidated power and adopted the identical exclusionary tendencies characteristic of the preceding "True Whig Party (TWP) administration (Carbah, 1998). And yet when Master Sergeant Doe transformed himself and his government to civilian, or rather "mili-civilian" (military-civilian) rule, he became the political leader of the National Democratic Party of Liberia (NDPL).

As a mockery to "democracy" General Samuel K. Doe rigged the October 1985, Presidential Election between him and his surname's sake, Professor Jackson F. Doe of Nimba County. The general elections of 1985 were held, and Doe was announced winner though his former political Advisor Hon. Jackson F. Doe was said to be the acclaimed winner (Johnson, 1991). With this, it is safe to say that the term democracy is used loosely by many dictators and tyrants across the globe.

Tyrants are ambitious men who come to power through rebellions, while dictators are leaders who have absolute power to make laws and command the army (Littell, 1997). In both cases, General Doe qualified because he ascended to the presidency through the violent overthrow of the Tolbert regime, and ruled by decree, while at the same time commanding the army during General Thomas Quiwonkpa Invasion of 1985, and the Charles Taylor Revolution of 1989 and 1990 respectively. That President Taylor also qualified both as tyrant and dictator cannot be over-emphasized.

POLITICAL AND GOVERNANCE BEHAVIORS OF AFRICAN "RULERS" AND POLITICIANS

Inversely, regarding the mentality and behaviors of African "rulers" and politicians, there is need for selflessness and the demonstration of an understanding of what democracy really is. Truth holds that democracy does not merely mean the existence of more than one political party. Democracy entails the creation of an environment of freedom, peace, security, liberty, tolerance, and trust, in which individuals can debate and discuss issues, exchange views and opinions, and engage themselves in various creative and productive activities of their choice in pursuit of their personal interests or in the promotion of the public good (UNDESA/UNDESA, 2000).

Majority of African "rulers" are politicians or demagogues who are bent on power greed and therefore neglect pluralistic participation in decision-making, DE concentration of authority, and shared responsibilities. Their orientations are driven by tribal, ethnic, or sectional affiliation and loyalties. For once they assume power, the next step is to control and mismanage national resources to the benefit of their kins, friends, associates, confidants, tribal, ethnic, and regional

folks. "It is Our Turn to Eat" (Wrong, 2009), they may say. Democracy requires institutions that can make policies that are transparent, accountable, predictable, and participative, ie, efficient and effective from the society's point of view (Schiavo-Campo & Sundaram, 1999), reflected in Olowu and Sako (2002).

Because of the parochial mindset and behavior of most of our (African) "rulers," aggrieved populations are usually demonized, dehumanized, demoralized, denigrated, and marginalized. These politicians are not necessarily "leaders" as they claim; they are "rulers" because leaders lead by good examples worth emulating, while rulers' rule with iron fists and discrimination.

The power-hungry African rulers portray others as evil, worthy of contempt or blame. For example, during the years that followed the assassination of President Tolbert, Head of State Samuel K. Doe gradually eliminated members of the People's Redemption Council (PRC) in the struggle for power and control, and his security agents' nonchalant attitude towards Nimba County citizens (Johnson, 1991). Ruthless African rulers vilify oppositions and subject their perceived enemies to degrading, inhumane, treatments, thus depriving them of their human qualities, personality, and dignity, all of which are tantamount to bad governance and inimical to good governance.

Governance, according to the World Bank (1994) and the United Nations (1997), reflected in Olowu and Sako (2002), is defined respectively as: "The manner in which power is exercised in the management of a country's economic and social development." With "emphasis on leadership, governance is defined as the manner in which political (state) leaders manage, use, or misuse power—to promote social and economic development or to pursue agenda that undermine such goals,"

Contrary to the doctrine of good governance, some African rulers cause people to turn aside from what is good or morally right and adapt corrupt Morales, thereby upsetting or destroying the normal functioning of society and throwing truth, honesty, and integrity into disorder. Finally, Sub-Saharan African rulers attack, assassinate, and defame the reputations of people of different political ideologies, tribal, ethnic, regional, or religious backgrounds. Not only that; the power mongering politicians deny, neglect, and belittle the importance and validity of oppositions.

Consequently, dissatisfaction and discontentment creep and spread among those who feel dispossessed and marginalized and the ultimate repercussions translate into social unrest, political instability, and violent confrontations because of ethnic dominance and concentration in the Civil Service. According to the UNDP (2000), the Civil Service in Africa is characterized with bureaucratic impunity and ignorance, perceiving as "nuisances" or "spies" any citizen who approaches them seeking information or requesting services to which they are entitled as citizens. For this situation, the UN agency asserts as reasons among which are: low level of education; poor pay, working conditions and career prospects; lack of work and professional ethics; commitment to the "big man" in the system rather than to abstract concepts such as 'the public interest', 'rule of law', or the 'citizen'. The 'factionalization' of the civil service with successive transitional governments in Liberia is a prime example, the UN agency concluded.

SEXUAL HARASSMENT IN WORK AND OTHER PLACES: A BRIEF GENDER PERSPECTIVE

Besides, the civil service is also plagued with malpractices among which "Sexual Harassment" plays leading role in relationship to males and their female counterparts in workplaces, schools

and other public institutions, the private and religious sectors not being exceptions. Sexual Harassment is thus one instance of "Sexual Coercion" which entails an illegal sexual contact that usually involves force upon a person without consent or is inflicted upon a person who is incapable of giving consent because of age, physical or mental incapacity, or who places the assailant or rapist in the position of trust or authority (Hyde & DeLamater, 1997).

Sexual Harassment at work may take several different forms. An employer or a prospective employer may make it clear that sexual activity is a prerequisite to being hired. Once on the job, sexual activity may be made a condition for retention, promotion, increment, or other benefits.

In all the instances of sexual harassment, there is a situation of unequal power in which the more powerful person, i.e. The employer, professor, psychotherapist, physician imposes sexual activity on the less powerful person – i.e. The employee, student, client, or patient. This situation is particularly serious because clients in psychotherapy and patients in hospitals and clinics have opened themselves up emotionally and are therefore extremely vulnerable emotionally; while at the same time, the acquisition of education is the student's ardent hope for the future; and for the employee, the job determines his or her survival and social security (Hyde & DeLamater, 1997). Finally, in Political Science, we call this "FATE CONTROL" because the fate of the less powerful person lies in the hands of the more powerful person. And in legal jargon, we refer to this as "QUID PRO QUO" meaning "I will do something for you if you do something for me" or "nothing for nothing."

For instance, Chairman Mulbah Morlu of the ruling Coalition for Democratic Change (CDC) was on record as saying (paraphrased), "Whenever President Weah makes foreign trips and is given money for the country, he returns and deposits same in his personal account. And in addition, he claimed that before the President appoints any female to positions in government, he must sleep with her." When journalists pressed to ascertain the authenticity of the Chairman's claim, he was alleged to have said that he made the remark under the influence of alcohol.

CENTRAL CONSTITUENTS OF GOOD GOVERNANCE

To emphasize the importance of good governance, the indented text infra is excerpted from Karngbese and Kennedy (2022), on the "Operational Structures of Governance" which include Political Governance, Administrative Governance, Economic Governance and Systemic Governance that are sine qua non to all governments.

Political Governance is about the participation of individuals in decision-making processes that affect and are affected by their lives. Any attempt to prevent or exclude people based on party, religious, gender or ethnic line engenders discontents, dissatisfaction, disunity and above all hatred.

These political decisions relate to the issues of democracy, representation and inclusion, power-sharing, and the relationships between and among institutions of governance. "Note that when people feel under-represented and dissatisfied with political governance, they will group to discuss their dissatisfaction; and when they do group, you can predict the outcomes of these groupings" (Dwanyen, 1985).

The key driver of Political Governance is Administrative Governance, without which any government is rendered a vacuum; for it is the personnel who run the system! Here comes in

Administrative Governance which is concerned with the implementation of decisions and policies. It involves the institutional framework which utilizes the knowledge, skills, expertise, and experiences of the personnel involved and the resources needed to ensure the effective and efficient execution of public policies; the supplies of public services and the way they are delivered.

Lewinski (2001), observes that economy is a system of building, using, and distributing wealth and resources. In this accord, Economic Governance entails the decision-making processes related to the allocation of resources to promote national growth, the creation of wealth, equity, and sustainable human capacity.

This requires an enabling environment within which such decisions are reached, hoping to promote collaboration and partnership between stakeholders—ie. Government, Private Sector, and relevant organizations in the Civil Society. Thus, contravening these conventions might spill down to the local populations, whose grievances will lead them to cut off ties with existing political sub-units and become autonomous, and in some cases adamant or unresponsive to government calls and regulations. There is a Spanish Colonial Latin American slogan which says, "Obedesco pero no complo—I will obey your authority but will not execute your orders" (Skidmore and Peter, 1992).

Consequently, to promote good governance that supports peaceful coexistence among Liberians, there must be an efficient and effective Systemic Governance System which brings together the government, private sector, and civil society in making meaningful decisions that will positively impact the lives of the people. Beware that the needs, demands, wants, wishes and aspirations of citizens and residents alike are many, varied and diverse.

Thus, a glance at the term transparency tells us about the availability of information on all matters related to governance processes –i.e., Duties and responsibilities of public officials and the way they are performed or delivered are known or knowable to the public or those interested. This implies that the public officials are themselves aware or should be aware of the rules that describe and prescribe their performance.

In essence, transparency represents the availability of the quality of information. For instance, the way in which they are availed or disseminated and those responsible for certain aspects of governance matter. In this case, openness and predictability characterized by the willingness of officials to engage in debates on public issues is a big score for any administration. This is because there is tolerance for public scrutiny and questioning on economic, social, and political spheres. That transparency facilitates trust, growth and confidence and enhances cooperation cannot be over-emphasized.

Accountability, a close accomplice of transparency, represents a reciprocal relationship between those who govern and the governed. Here lie expectations and their executions or fulfillments. Simply put, accountability obliges officials and entrusted individuals to conduct themselves in an open fashion according to laws, rules and regulations or face disciplinary measures for their actions or inactions.

RESPONSES TO UNDEMOCRATIC PRACTICES

In a sense, Sub-Saharan African rulers and politicians continue to grapple with the definitions of the term's 'opposition' and 'enemy;' They understand these concepts to be interchangeable which of course, is not the case. By connotation, the term 'opposition' suggests ideological, philosophical, or opinionated positions, propositions, or reasoning, whereas the concept 'enemy' refers to bitterness, belligerence, antagonism, violence, hostility, inhospitality, bloodthirstiness, ethnic cleansing among others.

Earlier in the 1960s to the 1990s these misrules were terminated or rather replaced by military leaders who themselves made no difference when they tasted power, as in the case of Samuel Doe of Liberia who played the game of ethnic dominance and elimination of fellow coup makers. According to the imperative that brought the People's Redemption Council to power, the True Whig Party (TWP) was charged with "Rampant Corruption" and the "Abuse of Human Rights." This can be said of former President Kibaki of Kenya when he asserted during his inauguration in which he dismissed Moi's legacy as worthless, saying, "I am inheriting a country that had been badly ravaged by years of misrule and ineptitude" (Wrong, 2009).

Same could be said of Charles Taylor who eliminated prominent indigenous Liberians like Jackson F. Doe, Stephen Daniels, David Gborboe Dwanyen, Stephen M. Yekerson, Cllr. Alfred Flomo among others, but rescued Ambassador Ernest Eastman, Samuel D. Hills, D. Musuleng Cooper, his kinfolk, and took them to his headquarters in Gbarnga, Central Liberia. Besides, during his presidency, Mr. Taylor's residence, the White Flower" in Congo Town housed the Liberia Ministry of Finance---Conflict of Interest, that is. I am afraid, but those whom Taylor eliminated were indigenous Liberians, while those he rescued were descendants of freed slaves or Americo-Liberians, his kind or kins. That Taylor terminated most of his Special Forces and fighters (all indigenes) cannot be overemphasized.

Meanwhile, other civilized African populations may express their anger, dissatisfaction, frustration, and opposition through democratic means---i.e. "The Ballot Box,' as in the case of the Senatorial Bye Election between opposition Liberty Party's Darius Dillon and ruling Coalition for Democratic Change challenger Thomas Fallah, when the latter was massively defeated by the former, backed by aggrieved electorates of Montserrado County. Same is expected to happen between opposition Unity Party's presidential contender Joseph Nyumah Boakai and incumbent Coalition for Democratic Chance George Manneh Weah.

Still, others become complacent and apathetic, expressing that electing another group to replace the current system will make no difference. They accordingly resort to voter apathy or incuriosity—come what may, that is. In such case, the incumbent is likely to win because they will use state resources to their disposal to play on light-minded people through "cash violence" coupled with the use of government media—print and electronic as propaganda machines... In addition, 'when the going gets tough, and the tough gets going,' state police or military and para-military apparatus are used to intimidate or eliminate opposition or perceived enemies.

WHAT IS "DEMOCRACY" IF CRITICAL VIEWS, VOICES, AND ACTIONS ARE DEMONIZED AND SILENCED?

According to the Merriam-Webster Dictionary (Since 1828), democracy is defined as a government in which the supreme power is vested in the people and exercised by them directly or indirectly through a system of representation usually involving periodically held free elections.

Correspondingly, Trembly et al. (2004), have dissected the concept "democracy," reflecting the world's various territorial governance systems to indicate into category (ies) we find ourselves as individual nations:

1. Consensus Democracy: A type of democracy that emphasizes the dispersal of political power.
2. Consociational Democracy: A special type of democracy characterized by grand coalition, proportional representation, mutual veto, and segmental autonomy.
3. Cosmopolitan Democracy: A transitional governance regime comprising international institutions, democratic states, and civil societies committed to protecting human rights and democratic public law both within national borders and at the reginal and international levels.
4. Delegative Democracy: A type of democracy in which those elected to office enjoy unconstrained abilities to govern without regard to their electoral promises or popular needs and demands.
5. Deliberative Democracy: An ideal type of democracy in which collectively rational outcomes emerge as the consensus of free, independent, and self-enforcing exchange of ideas among rational individuals.
6. Direct Democracy: A type of democracy in which political decisions are made by direct participation of the people.
7. Liberal Democracy: The type of democracy that emphasizes the protection and unhindered practice of political and civil rights and liberties of individual citizens.
8. Representative Democracy: Also called indirect democracy, is one in which the political will of the people is exercised through the decisions and choices of the agent s whom they select to represent them.
9. Procedural Democracy: The view according to which the establishment of particular institutions is sufficient for a regime to be classified as a democracy. At minimum, these institutions are multiparty competition, universal franchise and constitutional guarantees of social and political rights and liberties.
10. Social Democracy: The type of democracy that emphasizes the importance of collective as opposed to individual rights and development.

Not understanding their respective status in the type of democracy they institute; Sub-Saharan African rulers perceive their oppositions as potential enemies to be reckoned with, thereby turning the sub-continent into a theatre of instability and violence. Africa, once peaceful, has turned into a state of chaos and bloodbath unleashed by non-state militant movements, an untold terror the continent has ever witnessed.

To this effect, the author has selected what he calls "Moderate-party Democracy" to be adapted by African politicians and rulers, if they should attain the title "leaders." By Moderate-party Democracy is meant the system of government in which the number of political parties by legislation, is very minimal, less quantitative, or numerical, fixed, and constitutionally binding, void of reflection or semblance of tribal, ethnic, religious or gender influence. A fixed number of political parties that is void of extreme, exaggerated, plethoric latitude, not more than three or less than two, that is.

Based on the behaviors and practices of contemporary African rulers, some disenchanted populations have taken the "Mack Bolan" Approach. According to Allan Dole's novel, "The Executioner" (1970s), Mack Bolan, an American soldier fighting in Vietnam, said to himself: First I

believed in "Three Fs----i.e., Family, Friends, and Freedom. But because the Mafia had eaten up everything that I loved back home, I am now changing my Three Fs to Three Bs---i.e., Bomb, Bullet and Blood" and returning to Washington to deal with the Mafiosos"

Summarized, the story went that Mack Bolan, serving as a United States soldier in Vietnam, received a communication on the frontline that his only sister had been forced into prostitution by the Mafia, because of which his father, disgusted, shot, and killed her. With this, the American serviceman said to himself "I think I am fighting the wrong enemies here in Vietnam, while everything I loved had been eaten up by the Mafia, my real enemy; I must return to Washington now and face the Mafiosos."

While the author is not a devil's advocate, he believes that the instability in Sub-Saharan Africa is root- caused by the strong desires of "rulers" and leading politicians to dominate, demonize, dehumanize, demoralize, and denigrate oppositions and minority groups or populations whom they perceive as potential threats, enemies, or successors, if you wish. And when their existence, interests, concerns, choices, and aspirations are doomed, they may resort to the "non-ballot" approach as is sporadic in Sub-Saharan Africa.

The debate in point is that democracy features unity of national purpose, integration, diversity in human culture and thoughts, tolerance, justice, freedom, equality, peace, participation, accountability, transparency, and devolution of power from central to local authorities. Democracy looks at humanity as its 'central nerve' and single-most common denominator for instituting governments the world over. Accordingly, politics, a parent of democracy, arises from accepting the fact of simultaneous existence of different groups, hence different interests, and different traditions within a territorial unit under a common rule (Trembly, 2004).

In some cases, Sub-Saharan African rulers who form cliques and marginalize others, experience internal rivalries or wranglings either for money, power or resources, and implosions become inevitable. Resultantly, internal marginalization, lies, false accusations, imprisonment, and extrajudicial killings, are used as tools to silence perceived dissidents, mutineers, conspirators, renegades, or desperados. One reason for these actions is simple: In political history, "dictators are always afraid of those who brought them to power because they have the capacity to dethrone or withdraw their support for the dictator" (Anonymous author 1970c,). This was evident in the case of Master Sergeant Samuel K. Doe who in the 1980s eliminated majority of his fellow coup makers for alleged coup plots, treason, or attempted coups. Same could be said of Southern Sudan which has witnessed perpetual instability before and after independence.

 From all indications, in developed countries, the proponents of multiparty democratic systems like the United States of America, United Kingdom, France, Germany, Italy, etc. all field at most three political parties during elections as opposed to Sub-Saharan Africa, with Liberia as a case in point, which is fielding twenty political parties for the 2023 Presidential and Legislative Elections. She Interestingly, when presenting their platforms or manifestos, during rallies, through the electronic or print media, programs to be perused are the same or identical. For instance, the twenty political parties vying for the Liberian Presidency during the 2023 Elections have all respectively mentioned education, health, agriculture, security, road connectivity, youth, and women empowerment as their respective programs to be pursued when victorious.

Multi-party Democracy does not entail multi-ethnic factionalism; it aims generally at encouraging inclusion, participation, power sharing, and pluralism in governance at all levels –ie. Political, economic, administrative, and systemic. It encourages equitable distribution of national wealth based on population, needs, and necessity; not mere land mass, geopolitical nomenclature or the wishes of the power that be. Here is where the locals elicit their own interests, aspirations, priorities and unanimously decide their choices.

As it is, contemporary Liberian democracy has embraced, like other Sub-Saharan African democracies, divisive party systems –i.e., Ethnic, tribal, or sectional alliances as modes of winning votes and governance mechanisms. For instance, it can be recalled that following the April 12, 1980, bloody revolution that brought Master Sergeant Samuel K. Doe to power, a multi-party democratic model was actualized with the Master Sergeant as the Standard bearer of the National Democratic Party of Liberia. Other political included the True Whig Party (oldest and ousted), Liberia Action Party, Liberia People's Party, Grand Coalition Party, Liberia Unification Party, to name a few.

Prior to and during the electioneering period, Master Sergeant Doe who had earlier heavily populated the Armed Forces of Liberia with his ethnic kinfolk, also made it mandatory that if you were working in government, you should acquire membership in his National Democratic Party or risk dismissal. Similarly, membership in the NDPL was mostly drawn from Southeastern Liberia, the region of his origin.

When the Doe regime became tyrannical and deadly, abusing human rights and eliminating oppositions and perceived enemies, Archbishop Michael Kpala Francis spoke against these ills for which he was warned by President in these following words: "Archbishop Francis, stop preaching politics." In response the archbishop asserted: "President Doe, you are meddling in matters that fall beyond the authority of the Executive Mansion. I have the pulpit as my official command base; and just as you speak from the Executive Mansion, I speak from my pulpit" (THE POINT, 2006).

The archbishop also had a taste of another Liberian tyrant Charles McArthrur Taylor, whom he (Archbishop) referred to as the "single most formidable obstacle to peace in Liberia during the civil crises of the 1990s in the following manner: "It is my considered opinion that the principal obstacle to peace is Charles McArthur and the National Patriotic Front of Liberia (NPFL). He has done all he can to abort the achievement of genuine peace; he has brought to this country destruction: physical, psychological, spiritual, social, and economic" (THE POINT, 2006). Surely, this statement earned him the fiercest hatred from Mr. Taylor during the time of peace negotiations through the latter's ascension to the presidency following the 1997 Elections.

With this, Mr. Taylor through his surrogates, prominent among whom was Sando Johnson, the Archbishop's kinsman, exploited every situation or opportunity to make slanderous, defaming, abusive, vilifying, and malignant utterances against the Catholic Prelate in so far Taylor was in power.

Undeterred, Archbishop Frances issued a joint statement on January 4, 2004, when Liberia at last shook free from the shackles of the tyrant, reflecting "HOPE and CHALLENGES" facing Liberia, as captured in THE POINT MAGAZINE (2006) infra:

"All Liberians have co-responsibility to build a vibrant society, a society in which we stand for our rights, a society in which we no longer play passive role, a society in which we ae part and parcel of the drama of justice and equality for all. We must always shout at the top of our voices, Never Again! Never Again!" We must stand up against tyranny and the associated tyrants and dictators. We must take the destiny of our people and nation into our own hands. Yes, we must be brave and stand up to evil incarnate in the few who are determined to decide our future with us having no part in this decision and leading us into hell. No more should we accept "Liberators." For the so-called "liberators" have become our tormentors, our death squads, and our hells. We do hope the New Liberia in which we are entering will be one in which we love our neighbors as ourselves. As we have the trials and tribulations of the last two and a half decades, as we look to the future with optimism, as we sing the song, "We shall overcome," and utter the words of Martin Luther King "Free at Last," we must as a people and nation never, ever forget what has happened to us and the perpetrators of the eighties, nineties and the new millennium and must be made accountable. We must forgive, certainly but we cannot ever forget. If we forget, we will return to similar situations in which we found ourselves the last 23 years."

Looking again at multi-ethnic party system in Liberia, during the presidential and legislative elections of 2017, President George drew his primary support from Southeastern Liberia among the Kwa speaking peoples, his natal route. This region comprises the counties of Grand Gedeh, Grand Kru, Maryland, River Cess, River Gee, Sinoe, and GRAND BASSA (I am afraid). Even to date (October 10, 2023, Presidential and Legislative Elections), the Incumbent, President George Weah has drawn his votes among these people. "It seemed as though Kenya's political parties had finally matured, realizing that so long as they allowed tribal differences to dominate with each ethnic group mustering behind its presidential candidate, Moi would win" (Wrong, 2009).

Earlier during the 2017 Elections, Mr. Weah also formed a political alliance with Senator Prince Yormie Johnson who convinced Nimba County to vote for the former. They would fall apart during the 2023 presidential and legislative elections. Only Lofa County took a stance to save its son Joseph Boakai from total political annihilation during the 2017 elections.

A scenario: Crudely, and politically immaturely notwithstanding, Vice President Jewel Howard Taylor of the ruling Coalition for Democratic Change (CDC) went on record as saying: "If you cannot join the CDC, you will not get job." Ingrained with such a notion by national 'rulers.' Political participation and inclusion in decision-making, governance, and equitable distribution of national wealth and social services are faulty, uneven, loyalized, favorized, nepotized, determined by the presidency, the richest and most powerful in the nation.

From empirical evidence and experience, the CDC government in Liberia has been one in which folks seek positions to amass wealth at the detriment of the national economy. For example, the quest for legislative seats can be equated to the "California Gold Rush" during the early days of the formation of the United States of America. The California Gold rush brought wealth to many and brought sorrow to John Suitor (Days of Adventure, 1950c). In the Liberian situation, the population represents John Suitor, while the legislators and other senior and junior government officials symbolize the gold rushers.

Something is nostalgic about the Liberian Constitution of the First Republic: In it was enshrined "PROPERTY CLAUSE" for elected or public officials. But the 1986 Revised Constitution obliterated the "property clause" perhaps because those who framed it themselves did not have

property and were ambitious to occupy elected positions in the future as some of the did. "No Land, No Vote" (Sawyer, 2023). The case in point here is the notion that people work in government to accumulate or amass wealth and fame if I may say. Majority, if not all of those who worked under the Constitution of the First Republic had Real Estates—ie. Land, houses, farms of plantations, businesses etc., though the author does not know how this wealth were accumulated.

Inversely, from the 1980s, which witnessed the indigenous revolution---The People's Redemption Council that is, folks go in government penniless. After few years they become rich people and would use what we call "Cash Violence" to influence votes, instigate instability, inflame relationships, and loot the resources which should benefit the population. In most instances, the system becomes a "Laisser-Faire, corrupt, inept, draconian, and abusive, worshipped by its devotees with harassment, intimidation, and other malpractices as its "Coaches."

Obsessed with power, for example, Montserrado County Electoral District # 8 former Representative Moses Icarus Gray, a close confidant and perhaps a spokesman or defender of President Weah, in Mid-2023 invaded the Capitol Hill Campus of the University of Liberia with his gangsters and brutalized students of the institution. According to him, he went to "have lunch" with the Students Unification Party (SUP), and that he would return the following day to "have more lunch." This of course, did not go without popular condemnations from all spectra of the Liberia Society, although government did not come out with a statement disassociating itself from the act of the honorable man, now reduced to an ordinary citizen because of his failure to rewin the legislative seat.

As regards the worship of the president by his devotees and loyalists, Archbishop Francis prophesized in 1999, what befalls Liberia in years to come in a CERTIFIED COPY infra:

Archbishop Michael Francis' 1999 Report (prophecy) to the Vatican, Rome, Italy "Pope, Archbishops from around the world and other leaders, I bring you greetings from Liberia. The days ahead in the West African nation look rocky but we are hopeful it will get better. Advocacy and social justice as well as freedom of speech have all been doomed, but that's not what is important. A new generation of young people are gearing up for change after Taylor and that's what should worry us more. They will have a leader of their own from their generation who will be the worst the nation will ever see.

Many of them uneducated will come to government and will hail him as a KING, he will never be wrong and politicians of the old order will bow to him...ALL HAIL THE KING, they will say.

He will rule with iron fist and Liberia's economy under him will be the worst the nation ever experienced. Though around the world his celebrity status will swell but home will be a nightmare. The worst is not under Taylor; it is yet to come when mayhem will take the land and a dictator will rise but no one who celebrates him will see by then, they will all be blind and will end up as blind leading the blind."

At the end of that realm an astute statesman will rise, and the nation will prosper forever."

"MERCENARY" VOTERS ACROSS ELECTORAL DISTRICTS, COUNTIES, AND INTERNATIONAL BOUNDARIES

In recent years dating from the inception of the George Weah administration, voters trafficking or trucking across electoral districts, county constituencies, and importation of aliens into Liberia have become an open secret in addition to the formation of ethnic alliances for power. This unethical and unconstitutional practice has engulfed the electoral environment of Liberia and is likely to become a "political culture" if not swiftly checked and ended. Influenced by money or "cash violence," voters are recruited from their true places of residence to undomiciled locals to register and cast their votes.

Linguistic or ethnic sentiments and solidarities is the single-most imperative behind this, while we cannot at the same time rule out the fact the majority, ignorant youthful population is enticed by politicians especially in the ruling party which uses the nation's revenue to accomplish this end. The youth, some of them 18 years (legal voting age) and below, referred to as "First-Time Voters" are "conscripted" through cash inducements and trucked into different electoral districts by presidential and legislative aspirants to register and vote a party's or independent candidates (s). Regarding the "Minor," Chapter 8 Article 77 Section B of the Liberian Constitution (1986) reads: "All elections shall be by secret ballot as may be determined by the Elections Commission, and every Liberian citizen not less than 18 years of age, shall have the right to be registered as a voter and to vote in public elections and referenda under the Constitution." These "mercenary" voters, some of them also adults, are not domiciled in the places of registration and polling.

Interestingly for the "First-Time" Voters, their voter registration cards are taken away from them by the aspirant (s) who return (s) same during polling day and pays the second installment after casting votes. Currently, (Electioneering Season----October 10 to November 14, 2023) it is rumored that the ruling Coalition for Democratic Change (CDC), depleting the nation's coffer, has embarked on a vigorous campaign of buying and destroying voter's registration cards belonging to "First-Time" Voters and ordinary "poor" people believed to be supporters of the opposition Unity Part. The rumor furthered that the party is dispatching od disbursing thousands of bags of money across the country to win support for the CDC runner-off campaign. These actions are intended to impotentiate, incapacitate, and reduce the numerical strength of the opposition Unity Party which goes to the runner-off presidential election slated for the 14th of November 2023.

Meanwhile, ethnicity also brings voters across international boundaries. For example, because Liberian's international borders are loose, and unmanned for the most part, presidential and legislative aspirants recruit "mercenary" voters from the neighboring states of Guinea, Ivory Coast, and Sierra Leone. Linguistically, both Liberia and Guinea have Kissi, Mende and Fuli tribes. Similarly, Liberia and Ivory Coast have the Dan (Gio), Grebo, and Krahn tribes. Still, Liberia shares with Guinea the Kissi, Mandingo, Fulani, Mah (Mano), Kpelle. Theses "alien" voters are "mercenaries" or "imposters" who along with their employers –i.e., legislative and presidential aspirants have no regards for International Law.

These international elections "mercenaries" are trucked, bused, taxied, or motorcycled into Liberia to take constitutional decisions for the country of which they are not citizens. Legally, citizenship is gained by being born in a particular country and having parents who are considered citizens of that country, or by naturalization (MOE, 2003; OSIWA, 2017c). Chapter 4, Article 27 Section B of the Liberian Constitution (1986) states: "In order to preserve, foster, and maintain

the positive Liberian culture, values, and character, only persons who are Negroes or of Negro descent shall qualify by birth or by naturalization be citizen of Liberia."

AUTHOR'S FEAR

With all said, the author harbors the fear of looming catastrophe over Liberia emanating from frequent news of the confiscation of dangerous drugs and guns at air and sea ports including land borders of Liberia. In the author's mind, the citizenry is not properly informed about these life-threatening substances and firearms. Who keeps or disposes of them, what happens to the smugglers and runners remains a mystery. "In pursuance of this right, there shall be no limitation on the public right to be informed about the government and its functionaries" (Liberian Constitution, 1986, Chapter 3, Article 15 Section C). "Once bitten, we are twice shy." We had had a bitter experience with firearms during the civil war, and the dangerous drugs are spoiling our youthful population. Gay rights and lesbianism are UnAfrican, UnLiberian, and unacceptable as far as our culture is involved.

SUMMARY

This study commences with a spotlight on Precolonial Liberia, featuring the indigenous peoples who were later joined by the freed black immigrants from the United States and the "Recaptured" Africans or "Congoes" coupled with the assimilation of peoples from other West African countries. Captured also in this discourse are the Colonial, Commonwealth and Independence Epochs which characterized social barriers or discrimination between the freed black immigrants or Americo-Liberians and the indigenous inhabitants, with the former exercising superiority or dominance over the latter who were thrown into constitutional oblivion. There is an African saying that "when spider webs unite, they can catch a lion."

The ethnic influence in the governance of Liberia coupled with the desire of government desire to amass wealth to the detriment of the citizenry from colonial to independence (1822 to date), is an issue of concern to this work. The multiplicity of political parties also influenced by ethnic affinities which is eating up the tenants of national unification and reconciliation is flagged in the work. The study concludes with election malpractices including importing Mercenary voters from neighboring countries, county constituencies, and electoral districts. Finally, some limitations of African Civil Service featuring impunity, "big" syndrome, sexual harassment in public service, among others are touched.

CONCLUSION

This work clearly shows that the phrase "Multiparty Democracy" in the African or rather Liberian context is loosely, pretentiously, and deceptively used to give unfulfilled hope the citizens. Multiparty Democracy is but "Multi-ethnicities" in the Liberian context which is highly divisive. A Small country with a population of 5 million has 20 registered political parties that went to the polls during the October 10, 2023 presidential and legislative elections.

In such an ethnic-political dispensation, folks who stand on the opposite side of the divide are demonized, dehumanized, demoralized, and denigrated with total disregards to international human rights standards and constitutional provisions. In so doing, the national coffer depletes at the hands of the power that be with impunity, as the monies are used to run for elected positions and personal gratifications. For sure, the race for legislative seats in contemporary Liberia can be equated to the "California Gold Rush" (Days of Adventure, 1950c.) when mining became the single-most economic activity during the early days of the founding of the United States, as other

industries were abandoned. The desire of public officials to control power, accumulate wealth, and exert influence, motivated by greed has diminished the dignity of the ordinary citizens.

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Effectiveness of Solutions on Soilless Production of Lettuce Grown in Makurdi and Plateau, Nigeria

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Abstract:

The experiment aimed to investigate the effectiveness of solutions on the growth and yield of lettuce grown in Makurdi and Plateau, Nigeria. The experiment is laid in a randomized complete block design with three replications. The treatments used are organic nutrient source, inorganic nutrients source and control, a variety used where (Loose-leaf and Butter-head). During the investigation, some physiological variables, such as growth, plant height and the number of leaves, leaves diameter were measured. Other characteristics like dry weight, plant girth weight, root length, fresh weight and overall yield were also recorded. The results of the investigation revealed that lettuce generally responded to nutrient solution. All the parameter studies have significantly ($P \leq 0.05$) responded to the nutrient solutions with inorganic nutrients solutions recorded higher in both growth and yield-related character such, as plant height (10.00cm), the number of leaves (20.05), dry weight (10.17g), girth weight (48.22g) and yield (30.10kg/ha). On varieties Loose-leaf out performed Butter-head in both growth, yield and yield related characters such as plant height (9.45cm), the number of leaves (20.20), dry weight (10.92g), girth weight (32.27g), root weight (18.27g), fresh weight (42.27g) and yield (14.92kg/ha) and Jos location was superior in both growth and yield related characters. Based on the results obtained it can be suggested that lettuce farmers use inorganic nutrient solution which is better in both growth and yield characteristics leading to optimum yield in lettuce cultivation in the study areas.

Keywords: lettuce, Nutrient, Solutions and Variety

INTRODUCTION

Lettuce (Lactuca sativa) is a member of the Asteraceae (or Compositae) family and has an annual life cycle. It is the only cultivated species of the approximately 100 species in the genus Lactuca, most of which are indigenous to Asia and Africa. The genus is diverse, encompassing annual, biennial, perennial, and occasionally shrubby plants. Most are diploid, but there are a few polyploids. Lettuce (Lactuca sativa) is one of the most important vegetables in human diet. Lettuce comes in a wide variety of types, including romaine, butter-head, and iceberg. It is a cool-season crop that that grows best in cooler climates. Lettuce is a source of vitamin A and C. and it is also a good source of fiber. Weiss *et al.*, 2015). The plant is full of vitamins vegetables in human diet and minerals with lots of fiber which facilitates colon peristalsis. Lettuce is 26th among 39 vegetables and fruits of nutrition value and is fourth of consumption. It's the most popular salad crop in the world and fruits of nutrition value and is fourth of consumption. It's the most popular salad crop in the world and because of used crude, its vitamin sinter to human body without change. Nigeria is currently rank 28th in the world in terms of lettuce production according the United Nations food and agriculture organization (FAO, 2009). Lettuce is full of vitamin A and minerals like Ca and Fe. It is mostly used as salad with other salad vegetables like tomato, carrot,

cucumber and usually served alone or with other salad vegetables (Hasan *et al*., 2017). Kaiser & Ernst (2016) Lettuce (Lactuca sativa) is one of the hydroponic vegetables most frequently cultivated. Hydroponics is plant growing technique without using soil. Hydroponics is the technique of growing plants using a water-based nutrient solution rather than soil, and can include an aggregate substrate, or growing media, such as vermiculite, coconut coir, or perlite. Hydroponic production systems are used by small farmers, hobbyists, and commercial enterprise. The Kratky Method is a simplified hydroponic system in which the plants are suspended above a reservoir containing a nutrient solution. As the plants access the water, the nutrient solution levels fall. As the solution levels get lower, the roots of the plant grow downwards to access more resources. These nutrient solutions are change after 4 to 5 weeks. The reasons are that there may not be enough nutrient available for the plant, and to be able to take care of oxygen in the soil. Global population growth has increased the need for food production, especially in the agricultural sector significantly (Albaji *et al*., 2014, Neissi *et al*., 2020). Since agriculture is among one of the sectors that consume the most water, this increase in production could have an adverse effect on water resources. Water resources can be used more efficiently through the production of greenhouse crops because there is better control of environmental conditions for crop production (Rosa-Rodriguez *et al*., 2020). Plants can only be cultivated in a nutrient solution (liquid culture) or grow by an inert medium (culture of aggregates). In both systems, the irrigation water supplies all the nutritional needs of the crops (Kaiser & Ernst, 2016). A direct light-intensity effect on fresh weight and an indirect one on nutritional value (ascorbic acid) of lettuce were also evidence (kosma, 2013.) The objectives of this work are to determine the effect of nutrient solution on the growth and yield of lettuce, to compare the effectiveness of organic and inorganic nutrient solution medium on growing lettuce using kratky hydroponic method and to determine the interactions between inorganic and organic nutrient solution.

MATERIAL AND METHOD

The experiment was carried out at The University of Agriculture, Makurdi (6° 11'-7° 41'N Latitude and 7° 21' - 8° 37'E Longitude) and Jos at (9° 31'- 90 50`N Latitude and 10° 41'N-110 09`E Longitude. The experiment aimed to investigate the effectiveness of solutions on the growth and yield of lettuce grown in Makurdi and Plateau, Nigeria. The experiment is laid in a randomized complete block design with three replications. The treatments used are organic nutrient source, inorganic nutrients source and control), a variety used where (Loose-leaf and Butter-head) the experiment during the 2021 rainy season. Organic nutrient source is as follows Chemical content (pH: 6.5-7.5; EC: 2.6 - 4.1; Organic Carbon: 16.6 - 33.9 %; Total N: 0.95 - 1.7 %, P: 0.4%, K: 0.4%) Physical content (Moisture: 30 - 45 %; water holding capacity: 3 - 4 g; porosity: 60 - 72 %; Bulk density: 420 - 655 kg m^3) as recommendation by Bello (2015) and chemical nutrients solution as follows 120grams of NPK, 180grams of Calcium Nitrate, 60grams of Epson salt and 500ml of distilled water before it was used for the experiment. Dissolve 120grams of NPK, 180grams of Calcium Nitrate and 60grams of Epson salt separately in a warm 250ml of distilled water to allow it dissolve completely. NPK and Calcium nitrate solution are combined (solution A) and Epson solution (solution B), add 2.5ml of solution A and solution B after 5minutes in a 1liter of water to form a nutrient solution which the plants are placed in. The seeds were raised in transplanting tray before placing in nutrient solutions. The soil of the nursery was prepared well at a 3:2 ratio of soil and organic manure then it was treated for pathogen by covering it with polythene tightly and kept for 10 days, irrigated twice a day (morning and evening) to ensure good germination and establishment, the seeds germinated between five and eight days after sowing (DAS). The seedlings were transplanted to the nutrient solutions 21-25 days after sowing (DAS). The experiment was laid out in a randomized complete block design (RCBD) with three replicates. A

nutrient solution was formulated in a container and each treatment place according to the design. There were 4 containers of nutrient solutions in each block replicated 3 times which gave the total number of 12 plots for the study. Five (5) plants were tagged for data collection following (Berry, 2012) method. During the investigation, physiological variables, such as growth in the increase in mass and size of the plant which involve the multiplication of cells plant height (measured from the base of the plant to the tip), and the number of leaves ("Definition"). Other characters like root length ("is a part of a vascular plant underground"), and aerial weight ("is the mass/weight of fibre per unit area) root weight ("dry mass of the root of a plant divided by the total dry mass of the entire plant"), root diameter ("the line connecting the root of the teeth of a cylinder gear is the root circle divided by two"), harvest index and (total final output of harvest) were also recorded. All data collected were subjected to a two-way analysis of variance (ANOVA), when treatments were found significantly different, the least significant difference (LSD) at a 5% level of probability was used in separating the mean.

RESULT AND DISCUSSION

Table 1 is the effect of solutions on the production of lettuce grown in Makurdi and Plateau, Nigeria were significant difference (P<0.05) was observer in both variety and nutrient solution. On variety, loose-leaf out performed butter-head in plant height, number of leaves, leaf diameter and leaf length, this could be attributed to the genetic make-up of the variety, this finding is in agreement with the work of Andreani *et al.*, (2003) who stated that genetic make-up of some variety can bring variability in crop vegetative growth, he further added that cultural practice and adaptability might also cause such effect, Kawamura-Aoyama (2014) reported that cultivars grown in hydroponic systems frequently have more open heads than those cultivated on soil often purchased at the grocery store, this can be a good option because they are less susceptible to tip burn and produce more yield and could be the reason for this variability.

Table 1: Effect of solutions on the production of lettuce grown in Makurdi and Plateau, Nigeria

Variety (V)	Plant height (cm)	No. of leaves	Leaf diameter (cm)	leaf length (cm)
Loose-leaf	9.15	20.44	28.93	19.12
Butter-head	7.43	16.13	24.18	21.49
F-LSD (0.05)	1.31	2.08	2.01	2.02
Solution (S)				
Organic	7.70	14.25	23.46	20.19
Inorganic	9.23	20.27	26.27	18.37
F-LSD (0.05)	1.23	3.23	2.09	1.91
Location (L)				
Jos	9.90	22.34	22.20	19.91
Benue	8.01	20.00	20.02	21.11
Interaction	1.02	1.03	1.07	2.01
VXG	NS	*	NS	NS
GXL	NS	NS	NS	NS
VXL	NS	NS	NS	NS

No.= number, LSD= Least Significant Differences at 5% Level of Probability, * = 95% level of probability

On solution, inorganic performed significantly higher in plant height, number of leaves, leaf diameter and leaf length, this could be related to electric conductivity in the solutions. This work collaborates with the finding of Atkin *et al* (2004) who reported that inorganic nutrients solution is mobile and easily absorb and assimilated faster to organic solution and have ability to resist

changes in pH known as the buffer capacity, and source water differs in its buffer capacity due to dissolved elements.

On location, Jos location gave the highest plant height, number of leaves, leaf diameter and leaf length, this could be related to climatic condition and ability of the plant assimilate the readily available, these result is in conformity with the finding of Ruedas (2019) who stated that lettuce strive well in lower climatic condition and higher temperature, relative humidity affect the growth and seed production.

Table 2: Effect of solutions on the production of lettuce grown in Makurdi and Plateau, Nigeria were significant difference (P<0.05) was observer in both variety and nutrient solution. On variety, loose-leaf out performed butter-head in girth weight, root length, fresh weight and over-all yield, this could be linked to the fact that genetic variability could have caused such difference and probably environmental factors this result conforms with the work of Santos (2018) who stated that genetic variability, adaptation to the environment and cultural practice, not only affect overall yield but also yield related characters positively. On solution, inorganic performed significantly higher in girth weight, root length, fresh weight and over-all yield, this could be related to nutrient elements in the solutions. This work collaborates with the finding of Batista *et al* (2012) who reported that inorganic nutrients solution are mobile and easily absorb and assimilated faster to organic solution, Jones (2005) is a par with the finding of this work where he reported organic solution having more trace elements when compared to inorganic nutrient where they have only three major element and as such should have recorded weightier girth, lengthier root, higher fresh weight and over-all yield he added that nutrient solutions for soilless systems are often based on the source water, which can contain a range of dissolved minerals. Some of these minerals are plant nutrients that can be used, but nutrients could be present in larger quantities than plants require. High levels of some minerals, such as calcium and carbonate, can interfere with solution formulation, pH management or nutrient uptake by the plants. Jordon *et al.* (2018) reported higher yield of 2.18–2.58 kg m for hydroponic lettuce grown with inorganic nutrient source which was lower than the yield obtained in organic nutrient source in this study.

Table 2: Effect of solutions on the production of lettuce grown in Makurdi and Plateau, Nigeria

Variety (V)	Girth weight (g)	Root length (cm)	Fresh weight (g)	Yield/ha (kg)
Loose-leaf	32.22	12.24	89.13	14.92
Butter-head	30.12	10.11	63.14	12.19
F-LSD (0.05)	1.91	2.03	19.01	1.92
Solution (S)				
Organic	29.70	11.25	68.41	11.19
Inorganic	33.93	12.27	82.20	15.37
F-LSD (0.05)	3.23	1.13	17.09	2.91
Location (L)				
Benue	29.50	10.14	62.61	11.99
Jos	32.21	12.10	80.12	15.11
Interaction	2.13	1.73	18.07	2.12
VXG	NS	NS	*	*
GXL	NS	NS	NS	NS
VXL	NS	NS	NS	NS

No.= number, LSD= Least Significant Differences at 5% Level of Probability, * = 95% level

On location, Jos location gave the highest in girth weight, root length, fresh weight and over-all yield, this could be related to locational temperature, solar radiation and relative humidity, this result is in conformity with the finding of Madina *et al.*, (2023) who stated that cabbage and lettuce produce well in when the temperature is between 18-25° c and appreciably sun rays and 70-80% relative humidity, he added that these climatic factors do not affect only the over-all yield but also yield related character as reported in this work, Kang *et al* (2013) stated that light intensity plays a vital role girth weight, fresh weight and over all yield of lettuce.

Table 3: Interaction between variety solution and location on the production of lettuce grown in Makurdi and Jos, were significant difference was recorded in the interaction between variety, yield component and also location, where a perfect interaction was observed between variety and solutions where Loose-leaf and inorganic solution gave the highest in Number of leaves, Fresh weight and Yield in both locations, this is not far from the facts that varietal variability, nutrient and environmental factors might have led to this difference, this finding agrees with the work of Ekpo *et al.*, (2016) who reported same in lettuce production stating that yield and yield related characters are products or are mostly influenced by the plants genetic make-up, nutrient, cultural practice and environmental factors.

On the table 3, there is also a significant difference in location where Jos performed better than Makurdi in all the parameters under consideration these could be link to environmental factors such as temperature, relative humidity and solar radiation. This finding is supported by Williams and Nelson (2014) who reported that crops perform well in both vegetative and reproductive stage when the required weather is optimized, bearing in mind that each crop has a particular weather (temperature, relative humidity and sunlight) they strive well. Kano *et al.*, (2021) reported that the time between nutrient tank changes varies by crop, season and size of container. It is common to change the solution at one- to two-week intervals for many actively growing crops in the main part of the season and location.

Table 3: Interaction between variety solution and location on the production of lettuce grown in Makurdi and Plateau, Nigeria

Location	Variety (V)	Number of leaves	Fresh weight (g)	Yield/ha(kg)
	Loose-leaf	19.28	73.23	11.12
	Butter-head	16.63	61.18	10.09
	F-LSD (0.05)	2.01	10.01	1.03
Benue	**Solutions (S)**			
	Organic	17.41	67.46	9.29
	Inorganic	19.75	83.27	10.07
	F-LSD (0.05)	2.43	20.09	1.11
	Loose-leaf	20.21	78.43	11.89
	Butter-head	17.91	61.28	12.00
	F-LSD (0.05)	2.29	19.00	1.03
Jos	**Solutions (S)**			
	Organic	17.91	67.46	11.12
	Inorganic	21.91	85.17	13.17
	F-LSD (0.05)	2.41	20.07	1.65

LSD= Least Significant Differences at 5% Level of Probability, * = 95% level of probability

CONCLUSION

From the result obtained in this work, it is clear that the lettuce can be raised hydroponically using solution from organic source, a significantly difference was observed in both nutrients solutions were the use of inorganic shows superiority in both growth and yield/ yield related characters, the use of Loose-leaf was better than Butter-head in all the parameters measured, location and weather also affected the production of lettuce were Jos was better than Makurdi location, it can be suggested that lettuce be cultivated in a control environment like the green houses. It can therefore be recommended that the cultivation of loose-leaf variety lettuce under inorganic and organic solution since the yield margin is not much by farmers in the study area.

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Water Framing at Public University in Central Mexico

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Abstract:
The press, by spreading the availability of resources, shortages linked with preservation. In this sense, the work explores nine briefings from 2020 to 2023 published in national newspapers regarding the lack of supply, quality, benefit, punishment and discomfort as a consequence of the water situation in a demarcation east of Mexico City. Index Framing the water situation (IESH) was used to weight the media bias in information note by content reaching a value of 102 points out of a total of 180. This finding was considered as evidence of a moderate degree of media coverage the press regarding the problems arising from water shortages. From the results discussed its implications with other studies conducted in the demarcation.

Keywords: Scarcity, quality, malaise, full and cost

INTRODUCTION

Until October 2023, the pandemic has cut to 500 thousand in Mexico if the cases of death from atypical pneumonia and the population records of excess mortality are added (WHO, 2022). In this scenario, the mitigation policy forced the rationing of services considered essential (PAHO, 2022). The drinking water service already had a tendency towards shortages, shortages, unhealthy conditions and scarcity, but in the face of social distancing and confinement measures the situation has been exacerbated (OECD, 2022).

From an economic perspective, the Sustainable Development of water in Mexico, Federal District, for a tariff system that has been set as the water availability has increased from 300 liters per day per person with a unit cost of, 025 pesos in 1950 is indicated 120 liters per day per capita in 2000 when it reached an average of 50 pesos per volume of bi - monthly consumption (Conagua, 2018). However, the collection system has been questioned by the psychosocial approach which warns a series of disputes arising out of drinking water and related - ph.

From the economic approach, the water problem is an imbalance between availability and consumption that can only be solved if a fee system is implemented. In the world 97.5% of the water is salty, sweet 2.24% and only 1% is available in rivers, lakes and aquifers for human consumption. 113000 km ^{3} of water, are precipitated annually (United Nations Water, 2021: p. 13-18). Resource availability has decreased gradually. In 1950 only, Asia had a low availability and by 2025 this shortage will spread to five continents (Carr et al., 2012: p. 276). The imbalance between exploitation (estimated 4600 km $^{3)}$ of the resource and its natural recharge affect their availability for consumption (2400 km $^{3)}$ in agriculture, industry and domestic activities (United Nations Habitat, 2010: pp 16. -29).

In the case of Mexico, being the eleventh most populous country in the world (101.7 million people), with a density of 52 people per km ^{2} on average; a smaller population of 15 years (33%), 74% live in urban areas and their per capita income per year is 8,790 US dollars working 40 hours

a week, its annual growth is 2.1 million and is expected to in 2050 increased 48%, estimating their population at 131, 7 million for 2030, has been classified with an index of extremely low availability with less than 1,000 cubic meters per capita per year (National Institute of Statistics , Geography and Informatics, 2020: pp. 3-24). Regarding the center and north of the country where economic growth is significant areas, the availability of the resource is classified as very low with 1000 to 2000 cubic meters per capita per year (Markowitz, 2012: p. 479). Only southeastern Mexico that has had some significant economic growth has been classified with high availability of 10,000 cubic meters per person per year (Martínez & Porcellli, 2016: p. 333). The northern, central and northeastern contributing 85% of gross domestic product (GDP) and have 77% of the population have only 32% of the availability of water, about 1874 cubic meters per capita per year. In contrast, the southeast area contributes 15% of GDP and accounts for 23% of the population has a high availability of 66% of water resources, approximately 13,759 cubic meters per person per year. Thus, the average domestic availability of water is 4573 cubic meters per person per year (National Water Commission, 2020: pp. 14-16).

In the case of the Metropolitan Area of Mexico inhabit 18,620,763 concentrated in an area of 4,979 square kilometers and a population density of 3,740 people per square kilometer acute intermittent water service as the main problem. In the MCMA, during the period from 1950 to 2000, the population has increased 5.25 times and went from 3'442,557 inhabitants 18'076,572 residents. Regarding the population density the State of Mexico and Mexico City are the first and second entities with more occupied dwellings being the most populous Iztapalapa with 1,750,336 of which half are under 15 years (National Population Commission, 2018: pp 23-55). Such a scenario is exacerbated when one considers that the quality of surface water of 393 stations in 225 rivers, 81 stations in 62 lakes and reservoirs, 26 stations in 13 sanctuaries and coastal sites, 15 stations wastewater discharge has been reported to be very low as well as the underground consisting of 228 stations in 24 aquifers, established by the Index Water Quality with values between 0 and 100, the latter being excellent value, after acceptable, slightly contaminated, polluted, heavily polluted, and the last as excessively contaminated. 60.7% of surface water and groundwater 46.3% are polluted and heavily polluted, classifying surface water the Valley of Mexico as excessively contaminated with a 32.49 (NWC, 2020: pp. 13).

Water supply in the ZMVM is 68 m ^{3} / sec. Which comes from wells operated 25.16 ^{m3} / sec. (37%), recharged wells 15 m ^{3} / sec. (22%), springs .36 m ^{3} / sec. (2%), Cutzamala River 13.6 m ^{3} / sec. (20%) of Rio Lerma 6.12 m ^{3} / sec. (9%) and sanitation to 6.8 m ^{3} / sec. (10%). Regarding the degree of resource pressure, the MCMA ranks first with 120% overexploitation of available water. Although the hydrological situation is extremely committed to the MCMA, other hydrological regions are very close to this problem. The north, northeast and central areas exploit 40% of their water resources (National Water Commission, 2018: pp 58-64.). In the case of Mexico City in 1955 it had an availability of 11,500 cubic meters per capita. In 2004 it decreased to 4094 cubic meters per capita. In the same year he consumed 74 percent of the total water equivalent to 16,157 cubic meters per second supplied. Water in the Federal District, is aimed at industry (17%), trade (16%) and household goods (67%) which is divided into the use of toilet (40%), shower (30%), clothing (15%), dishes (6%), kitchen (5%) and others (4%). Iztapalapa by concentrating the population had the highest consumption 2,732 cubic meters per second, equivalent to 16.9 percent of the total. Gustavo A. Madero and Alvaro Obregon with 13.75 and 9.94 percent respectively. In contrast, lower consumption delegations were Cuajimalpa, Tláhuac and Milpa Alta with 5.97 percent. In this sense, it is expected 2020 annual availability of 3,500 cubic meters per capita. Therefore, service coverage is exclusive with 905,000 people

without drinking water because there is a shortage of six cubic meters per second (NWC, 2021: pp 30-36).

In the case of domestic water consumption to establish criteria shortages are:
- Crítical between 1000 and 1700 meters cubic per year
- Low between 1700 and 5000 meters cubic per year
- Media between 5000 and 10,000 meters per year
- High m to s of 10,000 meters cubic per year

The 32.27 percent of users is within the threshold range, 78.5 percent have less than 50 cubic meters consumption, 11 percent consume less than 10 cubic meters and 0.38 consumes more than 180 cubic meters every two months (Cunsolo et al., 2013: p. 255). The average payment in Mexico City from 110.25 pesos every two months (Moyo et al., 2012: p. 317). This means revenue from fees charged to users of 80 percent in relation to its actual cost for the service (NWC, 2020: p. 31).

It is estimated that in 2025 80% of the world population will be high scarcity. The forecast for 2050 implies a range of temperature increase of 1.4 to 5.6 Celsius causing an increase of 44 centimeters in sea level, 5% more rainfall and extinction of a quarter of the species (Dasaklis & Pappis, 2013: p. 1124). In this sense, it is estimated 2025 global crisis irregular and unhealthy water supply in which 2000 million people will not have drinkable water. In 2030 the population growth of the Metropolitan Area of Mexico (MCMA) will be 22.5 million inhabitants, the metropolitan area of Guadalajara (ZMG) of 4.8 million inhabitants and the metropolitan area of Monterrey (ZMM) 4.9 million population. The issue of distribution of water resources would focus on those cities with more than 500 thousand inhabitants (McCright, 2011: p. 66). If we consider population projections, the metropolitan areas of Guadalajara, Monterrey, Cuernavaca, Tlaxcala, Veracruz, Puebla, Aguascalientes, Toluca, San Luis and Cancun would be in a crisis of water availability expected by 2025 (NWC, 2018, pp 12-15).

From the perspective of psychology of sustainability, the media by emphasizing the conflicts between local authorities and users of public drinking water, influence public opinion (Ajzen et al., 2011: p. 101). In this sense, systems theories, technological, informational and communicational have advanced the hypothesis of setting the agenda from the analysis of the frame of the facts to reveal as producers of information to the media, as mediator to the opinion citizen and targeted policy initiatives law (Campillo, 2012: p. 149). This letter presents the picture of water availability about human consumption to contrast the economic approach against psychosocial approach to highlight conflicts arising from supply policy and the local collection, conceptualize and discuss their impact on public opinion, as well as the styles lifestyle of users.

If the media, as stated in the psychology of sustainability, presented conflict as central themes of water problems and they blame the authorities for inefficiency rates and expose closures avenues, boycotts facilities or kidnappings pipe as evidence of ungovernability that inhibit local sustainable development, then: what is the proposal of the media for the sustainability of the supply system and considering their frames collection of facts (Garcia et al., 2021: p. 1). The conceptualization of the role of the media contribute to the discussion about the role of the media, authorities and users as actors-oriented water sustainability in the demarcation agenda.

Theories of Technological Systems, informational and communicational have focused on explaining the relationship between resource availability and human lifestyles (Ajzen, 1991: 179). In this sense, the theoretical and conceptual approaches that will then discuss conflicts arising from the supply system and collection of drinking water in Mexico, Federal District are exposed (Berroeta et al., 2015: p. 51). TSG integrated a set of theories that include universal principles of integrative and dissipative systems (Carreon et al., 2014: p. 29). In the first case, the semi-open and semi-closed subsystems configured integrative systems because each information unit is linked to conduct a unidirectional transfer of an information exchange (Corral et al., 2012: p. 749). In the second case, the dissipative subsystems are exogenous or endogenous closed or open elements, and in which each unit of information is encoded to be preserved without changes that could mean you transform its structure.

Indeed, the TSG states that every system is anchored to a network of causes and effects, but there are principles that organize, not only to preserve its structure but to transform its relations with other similar elements of the environment (Albacerrín y Wyer, 2011: p. 691). For this purpose, permanent communication channels between each unit are required systemic (Fraijo et al., 2012: p. 1091). In this regard, the logistics system determines the function of each structure factor or indicator (Hughes & Barnes, 2011: p. 465). Although the TSG explained the energy balance between systems and subsystems in the case of informational and communicative, this balance seems to be confined to the acts (Albacerrin et al., 2012: p. 4). If every living being carries significant acts, if every significant act is related in its vital balance, then there will be no significant events related to imbalances with the collapse of the information system.

In relation to other theories, TED includes elements that are compatible with the TSG. In the case of macrosystem, which includes all systems, subsystems, factors and indicators, TED, like the TSG, it states that the goal of a system is its systematic reproduction (Coulomb, 2008: p. 29). This is a cluster of interrelated such that the absence of any new configuration involves units (Jimenez, 2010: p. 735). The change from one configuration to another is exercised by different sources; however, each unit is proud to be original because the result of such a configuration is unique, although the process is the same (Ozer & Yilmaz, 2011: p. 50). So that the macro is changing between each unit.

The TED pioneered around the analysis of the content of a message, analyzable from its contextualization, framed and symbolic intensification. Such is the case of information mediated by television, radio, print and Internet (Gu & Goldfarb, 2010: p. 411). In this sense, environmental psychology, discipline which subscribes the TED, made systematic observations of scenarios where conflicts over territory and appropriation of public space are significant indicators of the impact of public policies. In the case of water supply policy, environmental psychology has contributed to the clarification of the meanings derived from a situation of scarcity, shortages and unsanitary conditions (Frías & Corral, 2013: p. 198). These meanings are essential to explain the establishment of a citizens ' agenda for mobilization for water supply in a demarcation.

The TEA considers the media as a central power capable of defining the critical issues of the political agenda (McCombs and Hua, 1995: p. 495). That is, public policies and public programs would be determined by spreading some problems, which would impact on audiences, who constructed an imaginary and social unrest, the political class would take into account when defining the budget items before during and after local or federal elections. However, the emergence of cyber insecurity and digital video surveillance appear to have exceeded the TEA

(Martinez & Martinez, 2016: p. 133). As information and communication systems are digitized, the budgets of the TEA seem to explain homogeneous facts in the information society have diversified to such an extent that necessitates the rethinking of TEA (McCombs et al., 1981: p. 127).

In principle, establish a correlation between the spread of media content and public opinion, even in the current decade, seems a complex undertaking, since the media diversifies its contents. In the past, set the journalistic bias was justified given the human subjectivity; today the media seem to obey economic, political or social purposes intermingled with one another that makes complicated to demonstrate the kind of bias which could locate (McCright & Dunlap, 2011: p. 1167).

Since the focus of the TEA, the relationship between the media and the state is explained by citizens (McCombs et al., 1998: p. 703). That is, the formation and development of public opinion over the last four decades of the TWENTIETH century, was explained by the occurrence of widespread propaganda film, newspaper, radio or television (Corral et al., 2011: p. 95). Society Mass was considered the effect of propaganda strategies that impinged on affection rather than the rationality of the audience, viewers, subscribers or readers (Hidalgo & Pisano, 2010: p. 36). It was a simple mechanism: the emission of phrases and images had a direct impact on the beliefs and attitudes, in the absence of the formation of expectations, knowledge or criteria. In this process, perceptions seemed to be influenced by the messages, since it was an automatic mechanism without information processing (Krippendorff, 2005).

As part of the psychology of the media, their propaganda effects in the formation of beliefs and attitudes, studies of agenda setting suggest that there is a causal relationship between the contents of the media and issues of interest public opinion (Corral et al., 2013: p. 361). It is a systematic and automatic processing of information. In this model the experience of receiving information communication active decisions that will affect the prospective behavior (Poortinga et al., 2012: p. 812). The spontaneity of a message could have a direct relationship with the heuristic reasoning. In this sense, the theory of Forward - Looking Decisions (NT) argues that in situations of uncertainty, decisions of individuals are influenced by "mental shortcuts" in which a story about insecurity trigger distrust, fear or anger (Tversky & Kahneman, 1986: p. 251).

To the extent that insecurity messages are issued by the media, they influence an automatic mode in memory and the decisions of individuals. The continued spread of insecurity in the audience would lead psychosis and hysteria on the part of those who have been persuaded by the media. In this sense, the Theory of Probability of Development (STP) argues that information is processed in peripheral routes related to spontaneous decisions and improvised behavior, as well as central pathways involved with decisions and deliberate actions (Cacioppo and Petty, 1989: p. 12). These information processing is called as "need for cognition", defined as the biased information processing carried out by individuals at the time of being persuaded by a message.

However, the need for cognition would search for information in a bias that is to accept information that corroborates the beliefs and reject that which the questions. In this regard, readers of a newspaper appear to sympathize with those briefing notes that complement their beliefs about specific facts about a topic (Garcia et al., 2018: p. 1). In contrast, the notes refer opposing events to his convictions would have a greater persuasive effect if they are rejected at first instance by the recipients, but sow doubt themselves to such a degree seeking information

to rebut the contrary message and after contrast information, they end up changing their convictions.

The TEA raises an explanation on why the media skews their briefing notes and determine the topics of discussion in public opinion. The TEA argues that information is processed by communication professionals, advertising and marketing to modify the content based on internal policies (McCombs, 1996: p. 13). The TEA biased warns that each message is not sufficient to be an indicator of manipulation, it is only transformed into a phrase, spot, image, news or opinion made. In this sense, the informative bias refers to the assessment of a third element affected by the relationship between media and audience. It is other media competing with the average highest - *rated* and, in view of its competence, is defined as a means of controlling and manipulative audience.

To say that the media, especially television, manipulate the audience to make them captive consumers of the darkest interests, it is the argument of the Theory of Remote-Control Society (TST). From the socialization process rather than receiving media, media effects involve information learned by the audience based on images rather than speeches. The image seems to have shifted to the speeches. Coupled to the image, the spots replaced the sociopolitical speeches. Each - way relationship between image and viewer unveiled a remote - control society, manipulated, coopted, subverted and undermined their traditions to homogenize its consumerism. The relationship between spots and consumers to suggest that the influence of television makes it even irreplaceable Internet (Sartori, 1998: p. 10). Although the language of cyberspace is iconic-representational, the Internet cannot replace television as the audience fills the prime time for more than psychovisual iconic product. Precisely in this process is the captive relationship between television and audiences.

Bertalanffy (1968) argues that every living being exchanges energy with its surroundings. Such transactions configured systems which can be analyzable as energy flows in which the energy input (input) redistributes functions in the system to such a degree that stabilizes or destabilizes as appropriate. Such energy exchange may involve an energy disturbance. In this sense, a system encodes and decodes its distribution channels to address the decreasing or increasing demand. Thus, the production of a system is a function of energy input. The TSG was the first proposal for the study of human communication. Since every living creature demand, processed and consumed, it is necessary to consider living beings as systems not only energy, but also technology, information, communication and attitude.

McCombs and Shaw (1972: p. 176) correlated topics disseminated by the media to the issues reported by opinion polls and found positive and significant relationships, the formation of beliefs, perceptions, attitudes, intentions and behaviors seems to explain the second principle of TEA, namely: the spread in the media contents influence the political agenda, as public opinion minimizes or maximizes the issues to such an extent that the political class builds the agenda based on the frequency of issues surrounding spaces and channels of expression. Which established a positive and significant correlation between the information disseminated by the media and the issues raised by the public during election campaigns the EU. The two principles of AST were built from this study that corroborated the assumption of informational bias and manipulation of public opinion. From the two premises, studies that tried to emulate the original study were developed. Some research advocated to show the trend of the agenda of the media in simultaneous periods.

Meanwhile et al., (1972) raised the Theory of Agenda Setting (TEA) to explain the informative bias and the influence of media coverage on the topics most discussed by public opinion.

Bronfenbrenner (1977: p. 523) suggests that the evolutionary development requires significant events related to personal or group experiences. Every act is an indicator of human development. Even those acts are confined to individual significant development in the environment, i.e., relationships between individuals and groups, determine the following acts of the person. Therefore, the Theory of Ecology Development (TED) argues that if we analyze the deliberate acts of people more than their speeches, find the indicator of each subsystem.

Fazio et al., (1977: p. 464) considered that the formation of attitudes toward the media and their messages involved direct activation of images and phrases with procedural memory. As messages were transmitted, its duration and repetition seemed to activate previous experiences and attitudes and thus were spontaneous actions without requiring any mental arithmetic or inquisitive reasoning.

Aitken and McMahon (1994: p. 136) argue appears to be dispensable as the increase in tariffs and reducing subsidies, would have minimal effects on users who are able to wait long hours to pipes, clandestinely milked the public network and encourage corruption around the purchase of water. Sainz and Becerra (2002) argue that the increase of conflicts reported in the press is evidence of more than hydrological sociopolitical context of Mexico City. Such a finding is relevant for the present work because the supply shortage, not only encouraged, according to the press, the discomfort of users, but also the settlers seem to relate the problems with the tariff system of subsidies and penalties. That is, government action and social mobilization reported by the press, seem to have a meeting. While print media omitted the State and maximize adaptation of users to the water situation, leave a gap between public policy and citizens' demands.

Sainz and Becerra (2003: p. 61) conducted a descriptive study on the content of the notes of newspapers and found an increasing trend of citizen mobilization. Users went from verbal statements to direct confrontations with the authorities, for example, closing avenues as leverage for regular water supply. In this regard, using a regression model.

Briñol, Gallardo, Horcajo, Court, Valle and Diaz (2004) with a sample of 73 students from Madrid, Spain established, through the F Parameter Fisher, significant differences between positive thoughts and / or unfavorable receptor priming weak and strong (F = 10.35, p <.01), reception of weak priming led to more unfavorable thought's receiver strong priming group. Regarding quality message interaction and self-affirmation (F = 3.18; p = 0.07), the weak priming influenced more assertiveness that in the control group.

Becerra, et. al, (2006: p. 111) found that the action of users has been reported as conflicting demonstrations has since gone from verbal statements to enforcement action. In this paper, it is established that citizen mobilization is more resilient than confrontational. In Iztapalapa, the water shortage seems to be significant since the press reports only intensive efforts grabbing water rather than verbal confrontations, closures avenues, boycotts the public network or kidnapping of pipes.

Arriaga Valenzuela (2009) correlated topics disseminated by national newspapers and broadcast content in news of national chains. As the news increased their content, topics covered by the

press also increased. The category with the highest circulation was based on the economy and the spread was less corruption. During the period 2000-2005 the agenda items were similar in both the print and electronic media. crime and economics, broadcast frequency is similar in newspapers and newscasts: If two contrasting themes. Unlike the first study regarding the establishment of the agenda, the correlation between the subjects of different media opened the possibility to compare the construction of the agenda from various information and communication sources.

Bizer et al., (2010) the framing effect had an indirect relationship with intent. Through certain font, styles coverage and dissemination influenced the decisions of individuals. Comparing indirect relationship with the framing effect seems to have been increased by the mediation of the credibility of the source. It is possible to assume that the information and communication style of the source appears to have influenced decisions to conduct a behavior linked to the object frame. In the case of insecurity, style communicator could influence the precautionary intentions of hearings. In the case of print media, editorials and opinion columns from a reliable source could impact precautionary measures by some readers.

Wirth et al., (2010) conducted a study that correlated the prominence of media, public and political arguments. They established positive partnerships between public and political arguments with media arguments in three amplitude levels; low, medium and high. When comparing media discourses of high and low influence, the authors found that the associations were significant at one level of intermediate range, neither too high nor too low. That is, the influence of the media on public opinion and political campaigns only becomes significant at a level intermediate coverage. Those media with a wide spread or low amplitude did not significantly influence public and political speeches. Such findings are relevant for this study because in the case of print media, those of national circulation or local circulation could not influence public opinion of a demarcation.

Fenoll (2011) conducted a study that established a significant relationship between conservative ideologies and passivity of users. In this work, the complexity of the message seems to influence the active receptor because it encourages their criticism. In contrast, the relatively simple ideological messages, had a greater effect on those conservative audiences tended to innovation rather than conformity. From these findings it can be assumed that the issue of insecurity, the intensity effect would explain the systematic impact of messages on public opinion, more properly their cognitions; perceptions, beliefs, attitudes, intentions and actions in interaction with their socio-economic, demographic and educational characteristics.

García (2011: p. 41) found significant differences between those who perceive the shortage in their colony and those who consider it a problem of global order. This distinction supports the hypothesis around which the perception of the facts affects a greater extent than their perception through a media outlet. In this sense, this research has established that the media only skews its contents retaking the beliefs of scarcity that users manifested in the demarcation. Apparently, the rotating before trying to influence your readers first belief system used to build their coverage of events. Analyzed the notes of the national newspapers regarding citizen participation in water supply in Iztapalapa. He found a tendency for the media to frame citizens' actions as inexorable government actions, ie, the press framed users of drinking water as violent, as their actions obey more to hoarding and marketing of water your personal needs. Conducted a systematization of the news frames and he found a positive relationship with the themes of public

opinion. Intensified editorial and allusive notes to a war in three national newspapers corresponded with increasing attitudes toward war.

Groshek (2011: p. 1161) found positive and significant relationships between three media (television, radio and press) with respect to the socio-political situation in 122 countries. As the coverage and penetration of the media intensified, it is contributing to increased democratic practices. The differences between television, radio and press corroborated the assumption around which the media contribute to building a participatory democracy. In the case of the press, its reduced coverage differed from the levels of expectation corresponding to the other two media. The extent of media coverage and penetration seems to be the factor that most affects the construction of a participatory democracy.

Mateu & Rodriguez (2011) with a sample of 139 news demonstrated, through a content analysis, the similarities between national and local coverage around a protected area context. Such convergences activated the priming in both national and local public opinion.

Campillo (2012: p. 170) shows that the spread of public safety is proportionately neutral and overcomes the bias for or against the revised 1995-2007 shows, although press coverage is considered fortuitous for citizenship respect the issue of insecurity. This finding corroborates the hypothesis around which the incidence of print media seems to be explained by an automated processing of information rather than a deliberate, planned and systematic. That is, readers of the press, local or national, would be persuaded by content including images and phrases that would trigger past experiences of insecurity, decisions and improvised preventive actions.

Flowers and Mendieta (2012) found higher percentages in the negative perception of the press. For the most part, readers consider the contents incite violence. In this study, activation of emotions such as anger, sadness, disgust and insecurity could be related with disseminated by other media that being associated with press releases complement a cycle of persuasion events in which the media avocados would be massive deterrents scenarios show the public peace.

Mao et al., (2012) established significant differences between two local newspapers regarding six general topics: housing, beggary, health, economy, illegality and community. These results contrasted the hypothesis regarding the differences between information sources and heterogeneous effects on public opinion. As information sources diversify their content, would have a differential relationship with your readers, without implying a causal relationship, local print media having a greater number of subscribers, according to the studies reviewed, have a lower incidence in those readers with basic studies and migrants.

Left (2012) established significant similarities between the local press compared to the national movement in the rescue of the Chilean miners known worldwide for its social relevance.

Nisbet et al., (2012) established the direct effect of Internet use (gender, education and residence) on citizen demand for democracy. As men have a higher academic level and have remained in the town, they increase their demands for information related to democracy.

Meanwhile et al., (2012) found that sex reverberated in news consumption on immigration while ideology reverberated in news allusive terrorism. Such findings, for the purposes of this study, could be extended to the notion of public safety. As men, professionals and most established

witness acts of violence, crime seek allusive information from the briefing notes of the national, regional or local press. Automatic activation and deliberate decisions and precautionary actions could be due to the occurrence of events biased by the press. This hypothesis could be enriched if the contents of local newspapers with national newspapers are contrasted.

Garcia (2012) in a study carried out with editorials, columns and reports written on the same demarcation press, found indicators of social exclusion around the water service. The newspaper coverage on the kidnapping of pipes and grabbing water were considered as indicators of social segregation of water resources and services.

The analysis of the relationships between systems, mainly communication can be performed from Theory of General Systems (TSG). Comparison of media coverage at local and national level, could be defined by the magnitude of the news (Boza, 2013: p. 15). It is a hyperopic effect is spread mostly perceived as distant facts in reference to the unconcern of local events. Because insecurity is a global problem, it is expected that regional or local newspapers spread over the events of violence, crime or discrimination occurring outside the demarcation (Groshek, 2011: p. 1161). The media farsightedness explains the citizen farsightedness consisting discuss issues perceived as distant and therefore worrisome, but inaccessible in reference to nearby events that force people to take precautionary measures and actions aimed at the preservation of order and public peace making. In this regard, it is expected that the inaction of citizenship is justified by the closeness of the facts of insecurity and coverage of national events.

Nature is significantly influenced by many different contexts. Nature can be represented as health contexts or tourism (Ruíz and Conde, 2002), science, academia, politics, agriculture, law, industry or commerce (Cataldi, 2004), awareness, management or pollution (Cheng and Palacios, 2009), disasters, radioactivity, socioeconomic and disease (Cortés & Peña, 2015: p. 40), nationalism, naturalism, expansionism, catastrophism, principles of sustainability, territorialism, economist and legalism (Tabara et al., 2004), nationalism, regionalism, localism , anthropism, abiotic, baptism (Gonzalez et al., 2011), climate, energy and water (Mendez, 2007). Contexts include actors such as; communities, officials, environmentalists and experts (Garcia, 2012: p. 521). Contexts and actors are directly and significantly related. Community development and welfare. Officials with development, sustainability, freedom and solidarity. Ecologists with sustainability and freedom. Experts with development and solidarity. (Cheng and Palacios, 2009). Even contexts determine the actions of the actors. Aquifer situations, tariffs, supply and restoration demonstrations affect demand (Becerra et al., 2006).

Nature is mediated by a heterogeneity of frames. water plan, nuclear energy, foot and mouth disease, radiation and mad cow disease, perceptibility, rationality, morality and prescriptivist (Tabara et al., 2004), dehydration, risks, death, rates, cuts and illegal charges (Mendez (2007) environmental protest (Jimenez, 2005). If studies of the effect agenda advocated to explain the relationships between the contents of the media, issues of public opinion and the areas of public policy, studies framing effect warn that the style of coverage and media penetration incident directly in the socialization of citizenship (Gu & Goldfarb, 2010: p. 411)

It is a vicious or virtuous circle in which diffusion of the facts is an indicator of lack of governance or democracy that feeds back the discussion topics of public agenda (Gaxiola et al., 2011: p. 28). Referring to the amplitude of the media, authoritarian regimes seem to build relationships of distrust and democracies seem to build trust between citizens, media and politics res (Sandoval,

2016: p 199). Unlike calendar effect studies, studies framing effect observed that the communication style affects more than the amplitude of the medium. From the assumption that the establishment of the agenda would be indicated by framing effects rather than the correlation between media content and themes of public opinion,

The framing effect seems to have a close relationship with the management of information surrounding the subject matter, the formation of attitudes and decision-making (Garcia, 2013: p. 229). Studies framing effect appear to be a bridge between the calendar effect and intensity effect. Unlike these, studies framing effect is limited to explain the effect of the policy of the media on individual cognition (Pasco et al., 2010: p. 191). It is a complex process in which the number of messages and expressions of public opinion would be related by communication styles and styles of expression. Even the persuasive power of framing seems to increase with the styles involved in the dissemination of a message.

However, the explanation about the direct and significant effect between dissemination strategies and comments from public opinion seems to be affected by various factors (Sandoval et al., 2021: p. 343). Effect intensity studies have established positive relationships between political ideology, level of education, length of residence and sex with respect to news consumption. They have also diagnosed perceptions of citizens regarding the contents of the media.

The effect of intensity explains the relationship between the features of diffusion and perceptions, beliefs, attitudes, knowledge, motives, decisions and actions of individuals. While the sentences of the media on an issue or have a persuasive deterrent purpose according to the source and type of receptor, the formation of attitudes obey two deliberate and spontaneous processes occurring in the personal cognition (Hallay, 2012: p. 143). The media can disseminate messages with ideological left or right, this information would compete with other messages that the recipient may well be internalized. In the case of print media, readers would need to decode phrases and messages that fit their beliefs, if any, process information contrary to their expectations (Sandoval & Saucedo, 2010: p. 132). Such a process would involve a deliberate, planned and systematic away from passive readers strategy. Whereas the population reads a book a year and a half, automatic processing seems to explain the effect of intensity.

Rather, the public perception about the contents of the press seems to be closer to mistrust. From that citizen perceive the media as emitters of harmful content to democracy, equity and public peace, effect intensity studies have avocado to establish the relationship between messages and recipients.

The studies seem to show that intensity effect journalistic content to be focused on local issues, would trigger emotions that correspond with unforeseen decisions and actions in their readers (Sandoval et al., 2018: p. 1). Rotating bias in its coverage of the facts and the differences between local newspapers, seem to indicate a network news without restriction despite its systematic dissemination would have different effects in recipients. Finally, nature has been mediated from differences in intensity and direction.

From the studies cited, the sustainable media coverage can be defined as *receiving contexts* (setting), frames (framing), intensities and directions (priming) around the news

of *scarcity or abundance, supply or shortage, leaks or repairs, savings or expense, penalties or incentives, decreased or increased rates.*

The economic approach has established a collection system to reduce the imbalance between water availability and water consumption, therefore:

Standard Rate
The rate per unit of water is independent of the amount of water consumed. The rate is the same regardless of the availability or consumption of water.
Volume rate. The unit price of water depends on the amount used, however increases or decreases from the government discretion.

Rate Situation
The rate per unit of water cost increases during the day and decreases its cost overnight. During the summer season increases its cost and during the rainy season reduces its unit price.

Rate Intervals
The unit price of water increases as a function of the volume consumed. From intervals consumer prices increase as consumption exceeds the allowable thresholds apply.

Fees Thresholds
The unit price of water is constant as does not exceed the threshold of comfort. Once assigned exceeded consumption, a logarithmic increase applies.

Self-Financing Rate
The unit cost of the service is established from household income and a threshold of comfort. Once over the limit, the cost increases for every extra cubic volume.

Rate Subsidy
The unit cost of water service or laminated involves a standard fee and a subsidy based on a threshold of comfort.

In short, the economic approach argues that the availability of resources is an indicator of the ecological footprint which can be reduced from a balance of costs and benefits (Juarez et al., 2021: p. 53). As natural resources are scarce, the corresponding increase in rates would guide the consumption of other resources more availability. Meanwhile, natural resource endangered species could be preserved as it would be protected by the high cost of their consumption, however the consumption of a resource, from the psychosocial approach is determined by processes of social influence. At least the psychology of sustainability has established two processes influence an order or direct majority and a minority or indirect.

The majority influence suggests that the systematic use of a resource is determined by the power of majority decision (Lopez & Lopez, 2011: p. 176). If the bulk of the population has a habit of daily grooming, then the individual will be influenced to adopt a style of anthropocentric life where water resources are considered an exclusive service for current human needs regardless of the capabilities of human generations later and the needs of current and future species (Vinneta & Maharaj, 2013: p. 5). The majoritarian model is straightforward because through considered an

expert source may influence the decision of the individual consumer. Indeed, the conformity of the individual is the result of the controlling influence.

In contrast, argues that minority influence consumption of natural resources due to the identity established by the individual to the group around him (Sandoval & Saucedo, 2010: p. 132). Thus, grooming style may vary by group life in which the individual is inserted. If the group has a policy of grooming with a minimum of water, then the individual will perform that action regardless of the availability of water. This is an indirect influence as lifestyle impacts the future rather than the consumption decision in the present. Therefore, innovation is the main consequence of the minority influence.

Both processes of social, majority or minority influence seem to obviate the availability of resources that economic approach shows as an essential factor, are nevertheless relevant because warn that regardless of the amount of consumable water, decision making present or future is determined by the social or group standard norm.

However, both the economic approach and the psychosocial approach seem to ignore the impact of the media since considered as means rather than as transmitters of information (Sandoval et al., 2021: p. 343). Television, radio or newspapers to be conceptualized as diffusers located to the facts concerning water availability and water consumption as a consequence of a relationship of costs and benefits (economic approach). Or, conflicts between authorities and users are understood as the result of the majority or minority influence (psychosocial approach).

Conversely, if the media were conceptualized as sources of influence, then the conflicts between authorities and users about water availability, suburban supply, charging system and residential consumption, would be considered as indicators of the impact of media framing public opinion.

The objective of this work is to establish the axes and issues of dissolution in the public agenda with respect to water resources and services in the Coid-19 era, considering the health and economic crisis, as well as the confinement and social distancing disseminated by communication of risks of the government of Mexico before the increase of cases of contagion, illness and death (Nava & Gandín, 2015: p. 121).

What are the press frames regarding the availability, supply, health and cost of drinking water service in central Mexico, considering the pandemic and its effects on the economy, the quality of the water service and residential consumption?

The premise that responds to the question and guides this paper alludes to the fact that the Mexican government's risk communication has generated expectations of availability, abstention, health and subsidy of water resources and services, but to the extent that cases increase of contagion, disease and death, such a perspective is transformed into a collective hopelessness where opposing themes emerge such as scarcity, shortage, unhealthiness and scarcity attributable to the policies of confinement and social distancing (Garcia, 2020: p. 1).

In this way, the theoretical, conceptual and empirical axes are exposed in order to model the relationships between the explanatory categories of the public agenda in terms of water resources and services in a pandemic scenario. then the methodological decisions and the results referring to the framing of the press are based, considering a period of observation, as well as the

discussion of the state of the art (Beck et al., 2013: p. 17). Finally, lines of research are noted to clarify the relationship between the categories analyzed.

METHOD

It conducted an exploratory, qualitative and cross - sectional study.

A convenience sample of 103 informative extracts around scarcity, shortage, poor health, conflicts, leaks, repair, boycotts, cancellations, penalties, complaints, sites, rallies, demonstrations, participation, subsidies and tariffs in Iztapalapa, demarcation was made to eastern Mexico, federal District February 2020 to December 2023. the criteria of choice of the extracts were national movement, spatial reference, current information, extension of content, clarity, statistics and public opinion polls.

We used content analysis matrices in which information on date of publication, source, header information and extract emptied (Galicia et al., 2017: p. 42). It should be noted that the content analysis matrices can be used to set the frequencies of the briefing notes and their weighting from assigning a value to each selected header and extract (Henríquez et al., 2016: p. 25). Later, in a similar matrix column they included contextualization, framed and intensification to assign a value depending on the type of media coverage.

After selecting the messages, they were structured matrices for coding, weighting and summation (Medrano & Muñoz, 2017: p. 219). He was assigned a value of 0 to those briefings that included information out of the problem of "shortage", "quality", "subsidy", "sanction" or "malaise". A value 1 to those notes which included some of the keywords and statements by some authority or user was assigned. Value 2 corresponded to those notes which included the keywords that described the water situation (Shadfar & Malekmohammadi, 2013: p. 576). Finally, the value 3 assigned to those notes where extreme situations of vulnerability, marginalization, exclusion and resilience are included.

Weighting. Once selected messages were structured matrices for coding, weighting and summation (Tinto, 2009: p. 203). The variables (setting, framing and priming), dimensions (desabasto, leaks and rates) and indicators (egocentrism, anthropocentrism, Ecocentrism, biosferismo and hidrocentrismo for setting, personal, residential, neighborhood and delegacional for framing, low indirect intensity, low intensity direct, indirect medium intensity, medium intensity direct, indirect high intensity and high intensity direct priming) were codified in analysis matrices in which dates, fonts, title, abstract and coding news emptied.

A matrix was used for each interaction (devastated, leaks and rates) between water situations and lifestyles. Matrix analysis was used to obtain an index of water mediation. 0 = egocentrism, 1 = clientelism, 2 = governmentalism, 3 = anthropocentrism, 4 = ecocentrism 5 = biosferism, 6 = hidrocentrism, 7 = opportunism, 8 = sensationalism, 9 = sensationalism: Regarding the construction calendar values were assigned 10 = 11 = catastrophism and indiferencialism. Regarding the frame: 1 = staff, 2 = residential neighborhood 3 = 4 = 5 = metropolitan borough. Finally, the intensity of the message: 1 = low intensity indirect, direct intensity 2 = low, 3 = medium intensity indirect, direct 4 = medium intensity, 5 = high intensity indirect and direct 6 = high intensity. Coding criteria were established from the ordinal level of measurement media coverage.

The coding is according to the Theory of Production of Communication and Social Representation Agenda. This implies that the results of matrices brandished be interpreted in the light of the three theories if only in an exploratory approach. Such approaches pose contexts, frames, intensities and directions mutually inclusive. Thus, it is expected that news with a score of 4 (hydrocentrism) for the context, corresponds to a weight of 5 (metropolitan) and 1 (low indirect intensity). These scores demonstrate a consistent media coverage.

Notes and informative editorials were collected regarding the water situation in the demarcation of study. Subsequently, the information considering the approach of the Theory of Establishing the relative bias of the facts Agenda from the frame of information in a style that prevailed likelihood or verifiability codified. We proceeded to qualify by judges the contents of the briefing notes regarding the charging system. Finally, the information in another matrix for the presentation of results and interpretation of findings concentrated.

From the sum of each weighting, the index Framing the water situation (IESH) was established. The score maximum likelihood (9 ratings multiplied by three peaks framing = 27 for each keyword) was 135 as each keyword was considered as a dimension framing (5 keywords, "shortage", "quality", " subsidy "," sanction "and" upset "by 27 peaks framing). Close to 135 points values were considered as evidence of bias informative about the framing of the facts and scores close to zero were considered as evidence of no media coverage of the local water situation.

Medialization very high. In disseminating messages predominantly anthropocentric context and direct delegation frame with high intensity. High media coverage. Dominate the news with governmentalities contexts, deflectional frames with high direct current. Moderate media coverage. The briefing notes are promoted governmentalities deflectional contexts and frames with high direct current.

RESULTS

The weights for each of the keywords of the selected paragraphs. Framing Index of Water Situation (IESH) reached 102 points being in a moderate position. Such findings show that media coverage about the water situation in Iztapalapa tends to skew the "malaise" of users in relation to the "shortage" and "quality" of public service. The results show a very low near zero regarding the "subsidy" government level, and "sanction" regarding storage dispended. It seems that the print media tend to cover the events from close to the perception of users regarding their water situation criteria. In the case of the authorities, the press seems to regard it as a determining factor in the situation and skewing information notes concerning quality to users include statements discrediting the public network.

If each briefing notes with the keywords and coding criteria for weighting the framed newspaper analyzes, they draw attention to the notes III, VI and VII who reach values of 8 points of 20 possible. In the specific case of notes III, VI and VII " They fight for water in Iztapalapa", "A viacrucis water supply in Iztapalapa" and "Water supply is in crisis in Iztapalapa" the press just simply magnify the situation desists and discomfort of users: " 150 people waiting since dawn, at the junction of Villa Franqueza and Villa Ximena, the arrival of pipes for literally peeresses offering tips operators", "Sitting on the bench", "Low the hot sun and more than four hours had to wait Aaron "and" is the sun re 'hard,"complains Almirella Cristina, 77" . This is coverage where "quality", "subsidy" and "punishment" were not even mentioned explicitly or implicitly. In contrast, the emphasis in discomfort brought about by the shortage is consistent in all three notes. Despite the

bias around the discomfort of users, notes III, VI and VII did not accumulate a high value framing since their contents do not involve other keywords that might encourage government action or social mobilization. Print media only realize water situations involving degrees of vulnerability, marginalization, exclusion and resilience user's demarcation. Regarding notes V "Residents of Iztapalapa take eight days without water" and IX "Meters recorded air not water, alerting neighbors, " both accumulated 16 points from 20 possible, only omitted the quality of public service in the case of the note V and subsidy in note IX. We can see that the notes have a bias of the civic organization "tasks are distributed, even" throwing water "if a patrol that requires you to close the water reaches record". Or, the press seems to justify the discomfort: "A although has meter, it does not reflect the situation in his family." Both notes indicate an extreme situation where users have been driven to organize and justify their future acts to supply a service perceived as deficient. The national press seems to skew their coverage of the events of shortage, its causes and consequences in the demarcation, but not include in your note's aspects allusive subsidies and penalties, print media seem to fit the situation to a network of vicissitudes before which, users tend to adapt organized or impromptu. National newspapers, during the period from 2020 to 2023, appear to exhibit an inherent water situation to the dynamics of the demarcation since Iztapalapa is considered an area of scarcity and availability per capita. Even the briefings exposed, seem to corroborate the assumption that situations of shortages tend to differentiate versions of the authorities and users, although it is the same facts, the press seems to agree that the shortage is a problem that I could not go beyond the civil unrest.

Newspapers seem to indicate a perception or feeling of citizen unrest and at the same time a number of strategies that neighbors take in extreme situations, but beyond resilience, social mobilization is very far to be triggered by low water availability. In this sense, the omission of the authority as a guiding principle of public supply seems to corroborate hypothesis concerning the demarcation is being governed by a patronage system in which the provision of water through pipes is part of public action organized to minimize the effects shortages in Iztapalapa. As the shortage intensifies, the authorities, as may be inferred from newspaper reports, increase their supply chain and users will be more exposed to stress that this implies. Before presenting the results of the media coverage of sustainability, a diagnosis of the National Water Commission (CONAGUA) presented in 2007 on the tendency of the water situation in Iztapalapa. These data exhibit a moderately low water situation in terms of availability and population density. If there is a correspondence between institutional diagnoses, mediations and representations, it could predict a moderate media coverage in which representations would be moderate. However, water Iztapalapa warns media coverage in a different situation. Only in the case of tariffs, the media coverage corresponds to the diagnosis of CONAGUA. Regarding the shortage and leakage, the media seem to exaggerate both situations by promoting anthropocentric mediations in deflectional frames with high intensity and direction of impact of the situation on the inhabitants.

The differences between messages from newspapers and diagnosis of CONAGUA involve a thorough discussion of its dimensions and indicators. In the mediated shortage prevails an anthropocentric agenda that newspapers write their notes stating that nature is a resource that should be distributed equally to the exclusive use of human bypassing other species, animals and plants, forgetting that humanity only it is part of the ecosystem. When framing media coverage of deflectional desists, rotary forget that nature is interconnected. The Valley of Mexico basin, being connected to the basin of Tula, impacts on water availability of the species that inhabit both ecosystems, if there is an imbalance between the two basins there is a crisis in the species that inhabit them. One consequence of the shortage as anthropocentric schedule is the intensity and

direction that newspapers printed in their messages when they describe the consequences of shortages in the economy or the actions of people. That is, the press is influenced by an anthropocentric ideology from which produces and broadcasts its news. Regarding the media coverage of leaks, rotating the agendum in a government dimension. This means that leakage attributed stringencies government rather than to the deterioration of infrastructure or inefficient construction companies who developed the work. By framing the information in a borough level, the daily reinforce the idea that metropolitan authorities are responsible for the problem. Consequently, attributing responsibility to the State for wasted water, places the inhabitants as victims of water policy.

Rates mediated and diagnosis of the CONAGUA agree that the situation is moderately sustainable. Both from a governmental agenda and hydrological diagnosis, agree on the need to raise rates and fees to bring a sustainable price. Even the newspapers seem to reinforce the idea that the only solution to the equitable distribution between current and future generations, is the increase in tariffs, sanctions and incentives for greater investment and hedging. Another aspect that coincides newspapers and experts CONAGUA is in delineating the tariffs according to areas of consumption. While rotating frame the information to delegations, the CONAGUA sets quotas from such demarcations. Both seem to agree that the price of the rates directly impacts the economic well-being of residents. From these distinctions, it is possible to infer that the press mediatizes water sustainability from contexts, frames, intensities and directions that favor self-centered, patronage, and anthropocentric water policies governmentalities sidestepping altruistic cultures, Eco centrists, biseriates' and hydro centrists. In this sense, media and representational water sustainability studies seem to move towards the legitimization of sustainable water policies in their finances, forgetting that there are other alternatives that guarantee sustainability, inclusion and equity. That is, media studies and representational seem to demonstrate that sustainability is possible if it is through policies that encourage water recycling, penalizing the waste and redistributing consumption and the cost of drinking water. In contrast, the present study has explored the dimensions and indicators that allow a description, explanation and understanding of altruistic sustainability, eccentrical, biosphere and hydrometrical.

DISCUSSION

In Mexico, Federal District public water service has been irregular in their supply in some districts. Such is the case of Iztapalapa in which the press has made a focus on the shortage, leakage and coverage rate. For its part, the public has manifested itself in the absence of water and inequitable payment system (Restrepo, 2016: p. 174). The interrelationship between the three factors is substantial to note the establishment of a public agenda on supply and prices.

The state of the art has analyzed two styles of politicians, media and citizens ordered by two logical speeches credibility and verifiability (Guevara, 2012: p. 83). The scapegoating of any of the other actors and self-victimization are indicators of verisimilitude (Hallak et al. 2012: p. 143). In contrast, the responsibility about the data describing the problem is an indicator of verifiability (Nieto, 2020: p. 683). From both logical, it conducted an exploratory and retrospective study with a probabilistic sample of notes concerning the water situation in Iztapalapa during the period February 2000 to December 2012. The notes were coded and weighted in a Mediatization Water Index. The results show that the shortage (42 points of 220 possible) the problem was more widespread by the print media. In light of the theories and studies reported the incidence of the

press on public opinion and the establishment of a public agenda through local collection system he was discussed.

This work has established a high media coverage of the shortage, leaks and rates around public drinking water. From this finding it is possible to consider that environmental policies related to the supply network would be de-legitimized by the print media in the Metropolitan Area of Mexico (MCMA). That is, the tendency of media power around the water shortage problem to introduce, leaks and tariffs as critical issues on the public agenda. In this sense, the looming shortages in the coming years will be contextualized, framed and intensified by the media as an arena of competition for resources. Since the media coverage of water scarcity includes compelling images that influence public opinion, users of drinking water will increase their disagreement with the authorities. In such a situation, conflicts over water supply foster social and political changes, mainly in the design of public policies.

In a context of scarcity, water situations compete with media coverage in the design of environmental policies for the care of vulnerable, marginalized and excluded from water service sectors (Rivera et al., 2012: p. 174). To the extent that droughts flood the media coverage fester will intensify to show audiences that human lives are the priority of the state rather than aid to livestock and field. National security will be defined by the news segments rather than the supply of natural resources to the population.

This paper has explored five dimensions of the water situation that print media have reported in Iztapalapa. The results show that the press focuses its bias in the description of discomfort and shortages. These findings add to studies by Rodriguez, et. al, (2002) who found that the shortage favorable beliefs of scarcity and the consequent savings. In the present study, the shortage seems to explain the framing of newspapers around the discomfort of public service users. That is, in the situation of scarcity and shortage, the press, seems to consider strategies settlers can be linked with their discomfort around water quality and utility rates.

The national press, in the case of shortage of water in Iztapalapa, seems in tune with the coverage that has the same subject in the Metropolitan Area of Mexico. In such a scenario, the system of tariffs, subsidies and penalties. Even the quality management of water Aguilar (2009) and Musseta (2009) argue, it is a replaceable item for negotiations between users, pipers and authorities. The water disputes could worsen in areas with high population growth and population density. Water shortages would be one of their most immediate health of surrounding populations polluted water bodies consequences.

The water problems in the context of Iztapalapa, Federal District delegation has been analyzed from the impact of the shortage on water consumption. From the perspective of governance and participation, irregular supply has been identified as the main obstacle to sustainable local development (Sandoval et al., 2018: p. 12). Regarding the socio-cognitive effects, representations and beliefs of abundance and scarcity have explained the waste and resource savings (Sahin et al., 2012: p. 459). Even residential dimensions and maintenance of facilities have determined a low consumption correlates with the increase in tariffs, subsidies sanctions or supply programs.

However, relations between supply systems, administration and network users supply are qualified by the media at the time to define and transform the facts in news, features, opinion columns, tables, analysis or debate (Schoon et al., 2010: p. 144). In all these studies, the underlying

conflict as the past, present and future themed around the relationship between the per capita availability of water and domestic, industrial and agricultural consumption. As the problems of scarcity and intermittent water service intensified, conflicts over the supply would worsen in boycotts municipal networks, kidnappings of pipes, verbal confrontations with neighbors, rallies and blockades of avenues that lead to riots and mobilizations.

In the context of these conflicts and social change, the theories that explain the coverage of collective and governmental action on this issue and its influence on public opinion are particularly relevant (Sharples, 2010: p. 185). Both actions raise -public and social conflict scenarios from which have conducted studies to establish hypotheses concerning the diversification of the problem in line with the heterogeneity of collective action and social movements.

For local development, deterioration of public supply system would be an indicator of corruption and negligence of the authorities and the level of intransigence and conflict between communities and groups contesting control of supply. Public policies focused on water supply, programs clientelist public supply (Solis, 2011: p. 19), conflicts between authorities and users, collective action and social movements indicate levels of conflict that the media can reduce or amplify, according to its coverage criteria and expectation. The four actors: government authorities, water utilities, media and citizens groups would be immersed in an environment of water scarcity that determines their actions. Water sustainability studies have established a significant relationship between shortages and water storage. This relationship has been tempered by the print media in reference to the belief system of abundance or scarcity of water. Research on the subject has shown that anthropocentric beliefs about the abundance of water, lead to the waste of resources. In contrast, the allusive information to the shortage has affected the eccentric beliefs about water conservation.

It is true that the situation of water scarcity influences perceptions, decisions and actions on consumption; but between the facts of shortages and leaks, the media seem to skew the situation to a point that may come to influence the belief system of public service users (Toledo, 2019: p. 64). For example, a story about the deterioration of the supply network can influence the indiscriminate storage of water and eventually in conflicts by increasing rates and hoarding. Therefore, a systematic review and retrospective coverage of the media in relation to water leaks, could encourage discussion about its impact on the beliefs of the users of the public water network. This preliminary research would be if it is to explain the action organized by users regarding the variability of water availability in a demarcation.

The power of the media on public opinion makes them eligible as instruments par excellence of legitimacy of public policies. In this sense, water problems have been disrupted by the media power, since the levels of availability, supply, hygiene and consumption relating to water shortages, corruption and inefficiency of public service, have been transformed by the media in news, reviews, reports or biased ads (Summer, 2011: p. 191). Between environmental policies and the needs of users, the media are especially important. Media coverage of nature defines public discussion on investment, fees, penalties or subsidies (Tapia et al., 2013: p. 711). Television news, information radio and the front pages of newspapers directly and significantly impact on public opinion and action. To the extent that the media contextualize, frame and enhance images of the facts, they can reach skew and manipulate their audiences and audiences. In this regard, it is necessary to study the effect of media coverage of the water situations to shape the future of environmental policies relating to drinking water, sewerage and public supply.

For its social relevance, public policies-oriented water supply is disseminated through the media (Tonello & Valladares, 2015: p. 45). In this sense, relations between institutions, users and media are a public agenda that substantive issues are processed rationally or emotionally.

The rational approach involves discussion of issues such as scarcity, drought, shortage, consumption, saving or recycling water. Often, institutions and media provide data on these issues that trigger their discussion by the public. While the institutions responsible for the public water network and the media try to inform the opinion symphysis, while deliberately or uncharacteristically, influence citizens' opinions on issues of importance: shortages, shortages and, more recently, conflicts between authorities and users by increasing rates in the drinking water.

By reducing or maximize the information, the media deliberately skewing the facts to influence public opinion; but their essential purpose is to determine the political agenda (Touginha & Pato, 2011: p. 35). At the local level, national newspapers showed the inefficiency of local authorities when collect fees and even increase the cost of water supply. In other words, the print media encouraged conflicts between users and authorities regarding debt forgiveness in the demarcation of influence of the party in power and the increase in tariffs in areas of influence of the opposition party.

The media coverage of debt forgiveness for water services, the framing of government inefficiency and the perception of injustice by the settlers could result in an environment of learned helplessness in which government and citizen actions aimed at preserving the availability of water are reduced to isolated and dependent on consumer tariff system events.

Psychological studies on the relationship between political, social and media systems pose that television, radio and newspapers influence public programs through citizen opinion. In this sense, society would act as an intermediary: mediating or moderating the spread of political events. The difference between one or the other function is to build attitudes towards the political system. If the public believes that there is a balance between political power and media power, then we are witnessing a phenomenon of restraint in which two factors, one media and other political interact, to explain the emergence of social movements. In contrast, if public opinion considers that there is a hegemony between one or the other power, either media or political, then it is a phenomenon of mediation in which citizen opinion regulates the flow of information to balance the disparity of power.

Both phenomena, moderation and mediation, citizens located at an intermediate stage in which the media agendas seem to influence political agendas. That is, the issues broadcast on television, radio and press, despite its diversity and differentiation, influence building consensus when prioritizing certain problems, meet the demands and program strategies intervention (Uribe, 2017: p. 339). Moderation of public opinion is a socio-political system in which citizen participation unbalances the powers to subject to scrutiny and citizen initiatives. On the contrary, mediation of citizens about the influence of the media on political systems is an undemocratic system that deprives ungovernability. Because the moderation of public opinion in media and political differences seem to be the preamble of participatory democracy, it is necessary to discuss the process by which the media influence public opinion and this on the political agenda.

In sustainable cities, the drinking water system includes a set fares and availability per capita consumption; however, in the case of Mexico, Federal District, subsidies are essential for water supply in the colonies where the public network intermittently part redistributes water resources. In the Mexican capital, subsidies, penalties, cancellations, adjustments and stimuli, being an attribution of deflectional authorities are contested by public opinion and are a central issue on the agenda of the national press. It is a controversial situation where the institutional, political actors and citizens actively participate in the discussion of the due process of the subsidy as a central issue on the public agenda, political, public and media.

If heterogeneity of these agendas is exacerbated by the coverage of the print media, then it will be possible to observe a systematic way of framing where national newspapers emphasize the increase or decrease of drinking water as a speech constant verisimilitude in political, institutional actors and citizens (Wendling et al., 2013: p. 5153). As the press reports on the adjustments to rates, build an informative style that justified indignation and delinquency users against a system of poor collection and intermittent service, or show your support for the increase or decrease charging for pre-set volume. In this sense, the newspaper coverage is permeated by disagreements between authorities and users.

While a sustainable system is constructed from rates that reflect the balance between availability and consumption, the collection system in Mexico, Federal District, seems to seek a balance between political agendas, citizens and media. In this process, the types of information the press are essential, since a greater emphasis on raising rates, would imply an increase of conflicts between authorities and users. Therefore, the public agenda is built, according to supply and demand of drinking water, not from its water dimension, but media. In this regard, the frame of the press is essential to explain the influence of public opinion editorials and statements of officials responsible for regularizing the public supply network. In other words, the styles of news stories seem to encourage more balance statements from those involved that an imbalance related to the waiver of any authority or citizen mobilization around the regularization of service, water quality or prevention hydro-borne diseases. This is a scenario in which the press does not seek to establish their agenda, rather its aim seems to be geared to the incommensurability of the problem and the relativization of proposals.

The shortage of water in the demarcations of the Federal District with low water availability, population growth, residential density and industrialization, a scenario of scarcity and shortage, from which conflicts indicated by disagreements, verbal and physical confrontations, boycotts are generated supply network, kidnappings of pipes, closures avenues for demonstrations and rallies around the demand for regular supply of water.

The analysis of the frame of the media, particularly the print media, it is essential to clarify the prevailing issues and their insertion in the local civic agenda, political and demarcation in the surrounding information concerning the supply shortage, government actions and the corresponding mobilizations.

From Theory Establishing the Agenda and studies concerning the framing of the media have shown two logical: the credibility and verifiability (Yahya et al., 2012: p. 2316). The first is to spread the coverage of events from the State responsible for the quality of its public services to the detriment of the quality of life of citizens or hold citizenship waste water to the detriment of vulnerable, marginalized or excluded from public service areas. The second logic-that of

verifiability- operates under the frame of the facts in such a way that readers can collect the information reported by the newspapers to issue a rational judgment about it. For example, studies on media coverage around the water-policy in Iztapalapa, Mexico City, situation have established direct and significant relationship between shortages and conflicts between authorities and users of the public network water.

However, studies Aitken and McMahon (1994: p. 136) and Berk et al., (1980: p. 99) demonstrated a causal relationship between the policies of sanctions and incentives for water savings and substantial increase in rates. Studies on water shortages have highlighted the emergence of conflicts between authorities and citizens as scarcity intensifies. From these findings, he discussed in this paper the social and theoretical relevance of this problem with the aim of establishing an agenda of discussion around the water problems of the local district.

CONCLUSION

Water governance has been explored in its media dimensions. A prevalence of mediatization indices was found that reveal a difference between official communication and the needs of users. The water agenda is a factor of water governance. As the agenda is configured as a difference between the public administration and the users of the drinking water service, the problems are established as axes of discussion. Scarcity, insecurity and famine are problems that indicate the water agenda and the emergence of governance as a management alternative. The political and social actors are oriented towards sustainability from the negotiations, agreements and co-responsibilities around rates, subsidies and forgiveness. In relation to the coupling of the organisms in charge of managing water resources and services, the present work offers the measurement of the effect of risk communication on the expectations registered in printed media.

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Essays on the History of Bozatau District

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The Republic of Karakalpakstan is located in the northwestern part of Uzbekistan, in the lower reaches of the Amu Darya, on the southern shore of the Aral Sea. The republic is bounded on the south-west by the Karakum Desert. To the northwest lies the Ustyurt Plato, and to the northeast lies the Kyzylkum Desert. The southern part of the Aral Sea is located on Karakalpak soil. The total land area of Karakalpakstan is 166.6 thousand square kilometers, which is the largest among the regions of the Republic of Uzbekistan. Today the population of the republic is more than 1,881.9 thousand people.

The administrative-territorial structure of the republic consists of 16 districts and 1 city: Amudarya, Beruni, Bozatau, Ellikkala, Turtkul, Kegeyli, Chimbay, Karaozak, Takhtakopir, Kanlikul, Shumanoy, Kungrad, Moynak, Khojayli, Takhiatash, Nukus districts [1. 14].

As the President of the Republic of Uzbekistan Shavkat Mirziyoyev said: "Working tirelessly for the development of their homeland, motherland - this is generosity, love and devotion to the motherland, it is a proper upbringing and a practical example" [2.1].

In 1979, Bozatau district of the Republic of Karakalpakstan established livestock farms "Turtkul" of Turtkul district, "Kazanketken" of Beruni district, "Porlitaw" of Amudarya district, "Karakalpak" of Chimbay district, "Kazakhdarya" of Moynak district and "Aspantay" of Khojayli district. These farms specialize mainly in animal husbandry and graze large horned cattle on pastures [3.]. The total land area of the district is 2850 sq. km, with a population of 17.7 thousand people, the center of which is the settlement "Kazanketken" [4.3].

Bozatau district of the Republic of Karakalpakstan was abolished in accordance with the Decree of the Presidium of the Supreme Soviet of the Uzbek SUR of September 2, 1988 "On amendments to the administrative-territorial division of the Uzbek SUR" [5.275].

However, the decision of the former Central Committee of the CPSU and the Council of Ministers of the USSR No. 1110 of September 19, 1989, given the large area of land for the development of livestock and fodder production [6.4], recognized the need to create an administrative-territorial independent district. the district was rebuilt in March 1990. The main task in the reorganization of Bozatau district was to improve the management of economic and socio-cultural construction, specialization of agriculture, the rapid solution of the food program and the daily needs of the population [7.1].

The composition and income of the population in the district at that time was 20.5 thousand people, of which 12.4 thousand people or 61.6% were Karakalpaks, 7.5 thousand people or 35.3% were Kazakhs. The labor force was 8,440 people, of which 6,500 were employed in the national economy, and more than a thousand people were in need of employment. The average salary is

21.5 thousand soums a month, including 12.1 thousand soums in agriculture, 31.3 thousand soums in construction, 29.8 thousand soums in communications and 25.8 thousand soums in government agencies. The average salary was 9.1 thousand soums less than the national average. Deposits of the population in the People's Bank in 2003 amounted to 9.2 million soums, and in 2004 - 4.9 million soums, with an average of 5.2 thousand soums per depositor.

When studying the level of satisfaction of the population's demand for agricultural products in the district, in 2002 the consumer demand for 1366 tons of vegetables and melons (or 66.3% of demand), 1397 tons of wheat (72.9%), 616 tons of meat and meat products (42, 2%), 598 tons of potatoes (96.4%), 973 tons of milk and dairy products (50.7%).

According to the analysis of socio-economic indicators of Bozatau district for 1990-2003, not a single large industrial enterprise has been established. There are 2 non-governmental industrial enterprises in the district, which in 2003 produced goods worth 109.2 million soums, whose activities involved the processing of meat and meat products. In 2003, a Chechen joint venture was opened in the district in cooperation with the South Korean government, which collected lacquer veins and exported products worth $ 21.4 thousand. Unfortunately, the enterprise was not able to operate on a large scale [8.18].

Bozatau district specializes in the production of livestock products, until 2003 there were 7 company farms and 73 (91 in 1990) farms. The total area under crops in the district was 14,115 in 1990, 3,969 in 2003, and the area under crops has decreased by 3.5 times in the past period.

The total number of cattle in the district decreased from 36,738 heads to 22,882 heads, including 16,009 heads on company farms, or a decrease of 1.6 times. At the same time, the number of cows fell from 9,266 to 6,759, while on company farms it was 3,864. Meat production, the district's main livestock product, was 1,135 tons in 1990, while in 2003, companies and farms together produced 476 tons of meat, a 2.4-fold decrease. In 1990, vegetable crops were planted on 86 hectares of land, yielding 577 tons, with a yield of 67.1 quintals. In 2003, 243 tons of crops were planted on 92 hectares of land and the yield was 26.4 quintals.

Melons were grown at 2,918 tons in 1990, down from 164 tons in 2003. Cotton was planted on 540 hectares of land in 1990 and yielded 603 tons, while in 2003 the cotton crop was not planted at all.

According to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated August 1, 2002 No 276 "On further development of agricultural production in the Republic of Karakalpakstan in 2003-2007" in 2003 the number of cattle in Bozatau district increased to 24400 heads. With this decision, 300 hectares of land will be planted with sunflowers, and 180 hectares will be planted with sunflowers, yielding only 2.1 quintals. Cereal corn was planned to be planted on 2,000 hectares, but was actually planted on 122 hectares and yielded 121 tons or 9.9 quintals per hectare. If we look at the state of agricultural machinery, in 1990 the district had 606 different tractors, while in 2001 their number was 203. The same situation continued with tractor trailers, falling from 356 to 76. Combine harvesters were down from 37 to 13.

When analyzing the financial performance of 7 companies in Bozatau district, it was observed that every year the economic activity ends with a profit. However, the total accounts payable of these farms averaged 9 times the amount of receivables and continued to grow each year. As of January

1, 2002, accounts payable amounted to 255.7 million soums, in 2003 - 557.5 million soums, in 2004 - 612.9 million soums.

Expenditures of the local budget of the district in 1990 amounted to 2783.2 thousand rubles, of which 87.8% were covered by subsidies. In 2004, budget expenditures were planned at 1,025.9 million soums, of which 886.2 million soums or 86.4% were covered by subsidies.

There are 235 registered taxpayers in the district, of which 147 or 62.5% are active, including 55 farmers and 26 private small businesses. Of the total tax revenues of 124.0 million soums collected in 2003, 76.9% or 95.4 million soums were personal income taxes, property and land taxes, 15.2% or 18.9 million soums were corporate income taxes. formed from property, value added tax and land tax. All other types of taxes amounted to 7.8% or 9.6 million soums, including taxes on income of individuals and legal entities engaged in entrepreneurial activities - 2.4 million soums, fees from the farmers' market - 0.5 million soums [8.18].

As of January 1, 2004, there are debts of 4.4 million soums. However, according to the protocol of the Government Commission No. 4 of January 14, 2004 "On improving the mechanism of settlements and strengthening the discipline of payments to the budget", 7 million soums, a total of 68.4 million soums of taxes and pensions were extended.

In 1990, there were 8 preschool institutions in Bozatau district, compared to 8 in 2004. In 1990, the district had 137.9 hospital beds per 1,000 people, while in 2004 it had 55 beds. The building of the district central hospital is in need of major repairs, as well as the replacement of existing medical equipment and facilities. The hospital does not have a system of sewerage, sewage disposal and treatment.

The average per capita production of consumer goods in the country amounted to 27.5 thousand soums, in Bozatau - 4.1 thousand soums, or 6.7 times less, and the volume of retail trade - 22.7 thousand soums, which is 4 times less. At 90.4% of the country's population, natural gas supply was 69% in Bozatau district (97% in Chimbay district and 87% in Kegeyli district). Drinking water supply in the country is 70.1%, and in Buzatov district - 61.7%, an increase of 2.0% over the past 5 years. Neither the district administration nor the republic has taken sufficient measures to restore the pre-drought indicators of agricultural production in the district in recent years.

Based on the above, it should be noted that the district administration at that time had very little opportunity to improve the living conditions and develop the economy. Even with the liquidation of the district, taking drastic measures to develop the former companies and settlements of the district, 1.0-1.5 thousand new jobs were created on the basis of preferential financial assistance, which provided employment and income to the population. The khokimiyats of Chimbay and Kegeyli districts, the leadership of the republic had to prioritize the socio-economic development of the companies located in the territory of the former Bozatau district and take urgent measures.

Taking into account the results of field meetings and the wishes of the population, on January 31, 2004 a special session of the Bozatau District Council of People's Deputies considered and approved the decision of the Presidium of the Jogorku Kenesh of the Republic of Karakalpakstan on November 22, 2002 No. 399.

Thus, by the decision of the Jogorku Kenesh of the Republic of Karakalpakstan No. 561 of February 26, 2004 "On the dissolution of the Bozatau district of the Republic of Karakalpakstan" Bozatau district was liquidated [9.1].

Fifteen years later, the issue of reorganization in Bozatau district of the Republic of Karakalpakstan was considered. Appeals of "Bozatau" village assembly of Kegeyli district of the Republic of Karakalpakstan, "Erkindarya", "Quskanatao", "Aspantay" aul citizens 'assemblies and "Kok-suv" aul citizens' assembly of Chimbay district, resolutions of Kegeyli and Chimbay district Kengashes of People's Deputies of the Republic of Karakalpakstan Taking into account the proposal of the Council to unite the territories of the relevant citizens' assemblies and establish Bozatau district, Article 67 of the Constitution of the Republic of Karakalpakstan, Article 1 of the Law of the Republic of Karakalpakstan "On the procedure for resolving issues of administrative-territorial structure in the Republic of Karakalpakstan" In accordance with Article 7 of the Law of the Republic of Karakalpakstan and Article 49 of the Law of the Republic of Karakalpakstan "On the Rules of Procedure of the Jogorku Kenesh of the Republic of Karakalpakstan" Bozatau district was established on the basis of the decisions of the Senate of the Oliy Majlis No. 711-III and August 30, 2019 No. QQ-585-III "On the establishment of Bozatau district in the Republic of Karakalpakstan" [10.2].

In Buzatov district of the Republic of Karakalpakstan, employment, income and living standards of the population, especially women, youth and low-income citizens, through the implementation of promising projects for the rational use of production and labor potential, development of industry, agriculture, services and family business. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated April 18, 2020 No 243 "On measures for integrated socio-economic development of Bozatau district of the Republic of Karakalpakstan in 2020-2021" The decision was made. This decision created opportunities for the establishment of agricultural, veterinary and livestock, fishing clusters. At present, this work is being carried out in sequence.

In particular, the territories of "Bozatau" village assembly of Kegeyli district, "Quskanatao", "Erkindarya", "Aspantay" aul citizens 'assemblies and "Kok-suv" aul citizens' assembly of Chimbay district were merged with a total area of 2035.44 sq.m. km. was transferred to the territory of Bozatau district of the Republic of Karakalpakstan, and the administrative center of Bozatau district was designated the citizens' assembly "Bozatau" [11.1].

A critical study of the state of industry, services and other sectors of the economy in Bozatau district, the development of the Program of socio-economic development and improvement of living conditions of the population in Bozatau district for 2019-2021 and the amount of required funds and its sources developed.

Also, deputies of Kegeyli and Chimbay district Kengashes - people's deputies elected from the constituencies of "Buzatov" village, Kegeyli district, "Quskanatao", "Erkindarya", "Aspantay" and "Kok-Suv" aul of Chimbay district. People's Deputies are deputies of the Bozatau District Council. Thus, the resolution of the Jogorku Kenesh of the Republic of Karakalpakstan No. 561 of February 26, 2004 "On the abolition of the Bozatau district of the Republic of Karakalpakstan" became invalid.

As the head of our state noted at a meeting with young people at the Muhammad al-Khwarizmi School of Information Technology on December 27, 2019, we will definitely build a new

Uzbekistan together with young people. 2020 will be a turning point in state youth policy. At the initiative of President Shavkat Mirziyoyev, the reorganization of the Bozatau district, which specializes in animal husbandry, has brought joy to the population, especially the youth. Today, as in all regions of the Aral Sea region, a number of positive changes are taking place in this district. The establishment of the Bozatau District Council of the Youth Union of Uzbekistan in May 2020 was one of the most memorable events in the lives of young people.

Today, large-scale construction and creative work is being carried out in the district center. In particular, the establishment of Boz-Tex Limited Liability Company has provided employment for many young people. The company has a production capacity of 1.5 million units a year, or 2 billion 250 million soums, and currently employs 90 women. Three employees of Jayhun Baraka Chevalari Limited Liability Company in Ellikkala district are mentoring young people. According to experts, the company's products, equipped with the most modern equipment, are of great interest not only in the domestic market, but also abroad. Today, export contracts have been signed with a number of cities of the Russian Federation.

A "Youth Park" was established on the territory of the "Bozatau" township on a 5-point plot of land. 5,000 fruit trees and melons have been planted here. 30 young people from the group "Fidoyi Yoshlar" were provided with jobs. In addition, 300 greenhouses were built in the district, 30 of which were given to unemployed youth. One of them, Ulzoda Jumanazarova's greenhouse, currently grows more than 100 kilograms of tomatoes and sells them to the population at low prices.

Limited Liability Company "Moynak Kelajak Bunyodkorlari", established by the relevant resolution of the Cabinet of Ministers of the Republic of Uzbekistan, has been allocated 500 square meters of land. In 2020, 40 young people were employed in 168 indicators. Of these, 118 were planted with corn and 50 with alfalfa. Work in this regard is ongoing.

A youth center, an 800-seat amphitheater and a modern 1,000-seat football stadium have been commissioned in Bozatau district. English, computer technology and dance clubs were organized at the youth center. Today, along with the large-scale work on employment and social support of youth in Bozatau district, future plans have been identified. In particular, Bunyodkor Yoshlar detachments have been established, preferential loans have been allocated to young people within the framework of the State Program "Every Family is an entrepreneur", and the issues of popularizing the experience of Moynak youth in establishing greenhouses have been positively addressed [12.1].

In short, the Republic of Karakalpakstan Bozatau district has been removed from the list of backward districts, and the Republic of Uzbekistan is becoming a comprehensively developed region, which contributes to the economy of the republic.

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Digitizing the Cultural Capital: Harnessing Digital Humanities for Heritage Preservation in Bujumbura, Burundi

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Abstract:
In an era where the erosion of cultural heritage is increasingly prevalent, there exists a critical imperative to explore and implement innovative methods for the preservation and revitalization of cultural identities, as exemplified by the urgent situation in Bujumbura, Burundi. Central to this study is the exploration of innovative digital methodologies for archiving a wide spectrum of cultural artifacts, including both notable and everyday heritage elements, in Bujumbura. Traditional approaches to biographical and historical profiling have predominantly focused on official records and significant events, often neglecting the richness of personal experiences and everyday interactions that substantially shape cultural identities. To address this, the study introduces a multi-disciplinary approach that incorporates an array of archival materials, such as government records, personal correspondences, and family memorabilia. These diverse data forms are digitized and semantically classified using biotags, chronotags, and geotags, constructing a comprehensive "space-time continuum" for individuals and communities. The innovative Holistic Archival Personality Profiling Model (HAPPM) is utilized, leveraging large language models for a deeper understanding of personalities and cultural contexts. This methodology not only preserves but also revives cultural heritage, including recreating spoken languages and local dialects through historical linguistic principles. The study exemplifies how technology can bridge the gap between past and present cultural expressions, reinforcing native languages and enriching the appreciation of diverse human identities. This approach is pivotal in offering a more inclusive and holistic method for preserving the global tapestry of cultural heritage, as demonstrated in the Bujumbura case study.

Keywords: Cultural preservation, Digital humanities, Semantic analysis, Linguistic diversity, Archival data aggregation

INTRODUCTION

The recent history of Bujumbura, Burundi, and its neighbors during the Rwandan genocide is marked by a series of tumultuous events that significantly impacted the sociopolitical landscape of the region and contributed to the challenge of incomplete and undigitized records. In late April 1972, a Hutu attack in southern Burundi triggered a military response leading to the deaths of approximately 200,000 Hutus over three months (Russell, 2015). This period of ethnic bloodshed was followed by political upheavals, including the 1987 coup by Major Pierre Buyoya (1949-2020) and subsequent violent confrontations between the Tutsi ruling class and the Hutu majority, resulting in around 150,000 deaths (Saidi & Oladimeji, 2015). Following these events, the

assassination of Burundian Hutu president, Melchior Ndadaye (b.1953), in October 1993, further destabilized the region, igniting a civil war that claimed tens of thousands of lives and displaced hundreds of thousands. This event, coupled with the assassination of Rwandan President Juvénal Habyarimana (b.1937) in April 1994, catalyzed the Rwandan genocide, exacerbating violence in Burundi (Reyntijens, 2006). The influx of refugees and activities of armed groups in both countries created a complex humanitarian crisis. The memory of the 1994 Rwandan genocide extends beyond Rwandan borders, with neighboring countries, including Burundi, grappling with the aftermath and its effects on regional stability (Jaji, 2017).

The late twentieth century was marked by lawlessness, human rights violations, and a lack of effective governance for the region, which contributed to incomplete and poorly maintained records. Furthermore, the history of political instability, ethnic tension, and violence in Burundi resulted in a fragmented administrative system (Nkurunziza, 2022). The lack of a comprehensive archival system was compounded by the challenges of digitizing and preserving records during these turbulent times. The destruction of records, displacement of people, and the subsequent lack of reliable data management systems led to significant gaps in historical and administrative records (Bizimana, 2020). The situation underscores the need for innovative approaches to reconstruct, digitize, and preserve historical and cultural records to ensure the continuity and accessibility of the rich cultural heritage and administrative history of the country.

Unfortunately, the field of biographical profiling, integral to historical and psychological research to assist in reconstituting the country's history, has traditionally depended on a methodology constrained by the limitations of its data sources (Hadzigeorgiou, 2021). This conventional approach, heavily reliant on official records and notable events, has formed the foundation for constructing personality profiles and historical narratives (Smith, 2012). However, as highlighted by Neale, Henwood, and Holland (2012), this reliance on limited and fragmented datasets poses significant challenges. The essence of human experiences, particularly the daily occurrences and personal interactions that fundamentally shape an individual's personality, often remains unexplored and undocumented in these profiles. This methodological oversight results in a superficial portrayal of lives, emphasizing prominent or recorded events while neglecting the rich tapestry of everyday experiences (Clark & Watson, 1988; Dhruvarajan, 1981; Haehner et al., 2023; Reis, 2013).

The primary issue with this traditional method lies in its inherent bias towards events and records deemed 'significant' in a historical or societal context. Official records, such as birth and death certificates, marriage records, and notable achievements, form the core of this data (AbouZahr et al., 2021; Makinde et al., 2023; Suthar et al., 2019). However, these records capture only milestones, overlooking the myriad of everyday experiences that shape character, beliefs, and worldview (Wilkens & Sanford, 2009). Historical figures like Abraham Lincoln or Marie Curie are typically profiled based on their significant contributions and publicly known facts (Pasachoff, 1996; Thomas, 2008). Yet, often missing are elements of their daily lives, such as personal letters, diaries, and social interactions, which provide a more nuanced understanding of their personalities and decisions (Jolly & Stanley, 2005; Stanley, 2004).

To overcome these limitations, the proposed approach extends beyond merely expanding the dataset. The Holistic Archival Personality Profiling Model (HAPPM) redefines the boundaries of historical and biographical research, incorporating a more inclusive exploration of human experiences (Xu et al., 2023). Central to this approach is the digitization and transformation of

diverse data forms into machine-readable text, enabling semantic classification using biotags, chronotags, and geotags, effectively organizing it within specific spatial and temporal contexts (Davoudi & Traviglia, 2023; Hussain et al., 2022; Tasse et al., 2017; Ariano et al., 2017; Hu et al., 2022). To facilitate this expansive research initiative, researchers collaborated with ABADBU and the Burundian Association of Librarians, Researchers, and Archivists to digitize an extensive array of over 100,000 physical records with potentially more than one million in the future phases. These records encompass a diverse range of documentation, capturing the multifaceted nature of administrative and personal life in Burundi. The scope of materials digitized is comprehensive, encompassing everything from government edicts, passport applications, letters inquiring about retirement pensions, and election records, to architectural plans for building a clinic. This exhaustive collection represents the gamut of administrative records owned by the government. A critical aspect of this project was securing licensing rights to publish the metadata and to extract the text for broader accessibility and research purposes.

Along with Burundi, other valuable information was retrieved from their neighbors to the west. Given the status of the Democratic Republic of the Congo (DRC) as a precredit economy, records from the country included detailed voter information—names, dates of birth, places of birth, and locations of voter registration—posted on the internet before being taken down. This data, representing approximately 10% of voters, lacked personal addresses, phone numbers, and emails, but allowed researchers to aggregate familial connections and trace genealogies. For example, the data could be analyzed to determine parental relationships and was meticulously organized in reverse alphabetical order by family name, with a focus on appearances in records before 1950. Additionally, geographical analyses were conducted to ascertain the prevalence of specific family names in various villages prior to 1950, offering a unique historical insight into familial and demographic patterns over 72 years from 2012. This comprehensive archival effort also extended further afield. In Monrovia, Liberia, researchers encountered a significant collection of theses and dissertations from university graduates. These academic works, bound individually and displayed on walls, were not digitized, rendering their contents inaccessible except through physical examination. The lack of digital accessibility highlighted the importance and urgency of digitizing and preserving such academic and cultural artifacts, underscoring the broader implications and potential of the HAPPM in transforming the landscape of historical, cultural, and academic research.

The impetus for this study emerges from a profound necessity to preserve and revitalize the rich tapestry of cultural heritage, particularly in postcolonial contexts like Burundi. The article foregrounds a real-world application of scalable cultural preservation techniques, with a meticulous focus on archival records from Bujumbura, Burundi. This innovative approach transcends traditional methodologies, employing the HAPPM to digitize and semantically analyze a wide array of archival materials. Another innovative feature of the methodology lies in its application of large language models (LLMs). When these models are integrated with the enriched dataset, they facilitate a unique form of interaction, allowing users to "converse" with the past (Hutson & Ratican, 2023). This form of engagement transcends traditional fact recollection, offering a dynamic interaction with the personalities and experiences of historical figures. The integration of LLMs adds a new dimension to the data, introducing a rich semantic layer that enhances the depth and quality of information available for analysis and interpretation (Varshney et al., 2023; Wu et al., 2023).

The endeavor will not only enable Burundians to access and reconnect with their own history but also provides a valuable resource for global researchers. By integrating varied and often overlooked records, ranging from official government documents to personal correspondences, this model offers a more nuanced, comprehensive view of Burundian past. This methodology is particularly pivotal in reconstructing a more accurate postcolonial narrative of Africa, one that is richly layered and reflective of both the monumental and the mundane aspects of history. The potential benefits of this study are manifold, extending beyond academic research to impact cultural understanding, identity formation, and the preservation of collective memory. It represents a significant stride in safeguarding the cultural heritage of Burundi and contributes meaningfully to the broader discourse on postcolonial historical narratives in Africa.

LITERATURE REVIEW

The pursuit of understanding personalities and constructing historical biographies has historically been grounded in traditional methodologies, each characterized by unique approaches and theoretical foundations. In the realm of personality profiling, conventional methods have primarily relied on psychometric evaluations and psychoanalytic theories. These methodologies aim to decipher the complexities of human personality through structured instruments and interpretive frameworks (Post, 2014). These traditional approaches encompass a spectrum from Freudian psychoanalytic theory to the Myers-Briggs Type Indicator, each contributing essential insights into the multifaceted nature of personality (Parker, 1998). Simultaneously, the discipline of historical biography has traditionally been characterized by a narrative-centric, chronologically organized approach to recounting the lives of individuals. This approach typically emphasizes public achievements and well-documented events (Meister, 2018). It often focuses on the role of key figures within the larger context of historical events, thereby shedding light on their contributions and influence (Banner, 2009). Though personality profiling and historical biography differ in focus and methodologies, they converge in their aim to illuminate the human experience, albeit through varying perspectives.

The evolution of personality assessment techniques has progressed from ancient methods based on physical characteristics to more empirical, scientifically grounded approaches. Historically, techniques such as humorism, phrenology, and physiognomy linked physical attributes to personality traits, laying the early groundwork for personality assessment. These approaches transitioned significantly with the exploration of the lexical hypothesis by Sir Francis Galton (1822-1911) in the late nineteenth century, which marked a move towards systematic, language-based analysis of personality traits (Cheung et al., 1998). The twentieth century further shifted the focus from typological to dimensional measures of personality, with notable developments like the Rorschach test and the creation of the Minnesota Multiphasic Personality Inventory (MMPI) (Craik, 1986; Butcher, 2010). In contemporary times, personality assessment methods have diversified to include self-report inventories, projective tests, behavioral observations, and brain imaging techniques, aiming to provide a comprehensive view of personality traits, with an emphasis on linking brain activity to different personality characteristics. This evolution reflects a significant shift towards more nuanced, sophisticated, and empirically validated techniques in understanding human personality (Mosca et al., 2023; Selzer et al., 1987).

Psychometric tools represent another approach in personality assessment and encompasses a diverse array of techniques that provide vital insights into individual personalities. Self-report inventories, pivotal in this domain, involve individuals responding to statements about themselves to assess various personality traits, based on the premise of accurate self-

descriptions, and are widely used in both clinical and research settings (Boyle et al., 2014; Christensen et al., 2019). Projective techniques, such as the Rorschach Inkblot Test and the Thematic Apperception Test, present ambiguous stimuli to individuals and interpret their responses as reflections of underlying personality traits, including unconscious motives (Bender et al., 2014). Behavioral observation, another key method, relies on observing and recording behavior in various situations to assess personality traits, proving especially useful where direct self-reporting is not feasible (Larkin et al., 2021). Additional methods include observational measures, ratings by others, and objective performance tests, underscoring the need for a comprehensive approach that combines various techniques for a more accurate understanding of personalities (Al-Dajani et al., 2016). In organizational psychology, these tools are crucial in the hiring process, with assessments like cognitive ability tests, personality and behavioral assessments, and situational judgment tests providing objective insights into suitability of candidates, thereby enhancing recruitment and team effectiveness (Mussel et al., 2016). The field of personality assessment has seen significant advancements with these varied psychometric tools, highlighting their importance across clinical and organizational contexts.

Along with psychometric methods, the utilization of official records in personality profiling has been significantly enhanced by digital technology, leading to the rise of digital footprints as a key source of data. Research by Lambiotte (2014) and Buraya (2018) underscores the potential of digital records, like social media activity and online interactions, in revealing personality traits, offering insights into private traits, motivations, and emotional makeup. However, caution is necessary in interpreting these records. Alison (2002) highlights the need for nuanced understanding of the relationship between behavior and background characteristics, cautioning against overreliance on naive trait approaches, especially in criminal investigations, and pointing to ethical and legal implications. Given the vulnerability of such populations, research further emphasizes the importance of addressing privacy and ethical concerns when using digital records for personality assessment (Alexander III et al., 2020). Additionally, accomplishment records, such as work performance evaluations, are valuable for personality assessment, aiding in predicting job performance and satisfaction (Connelly et al., 2022). These records, often analyzed through personality self-report inventories, involve assessing agreement with statements designed to measure stable personality traits, underscoring the multifaceted nature of official records in understanding and predicting individual behavior in various contexts (Gao et al., 2023).

At the same time, classical methods in historical research, essential for understanding and interpreting the past, are closely intertwined with the discipline of personality profiling. As outlined by Grigg (1991), the importance of systematic search procedures in historical research is paramount, especially given the diversification of scholarship and the expansion of usable sources. Fundamental tools such as palaeography, diplomatics, chronology, and epigraphy serve as cornerstones in the historical sciences, aiding historians in the evaluation and analysis of source materials. The growing accessibility of archives and the proliferation of sources have necessitated more refined and systematic approaches to historical research (Friedrich et al., 2017). In classical studies, the philological method, pivotal to the study of ancient texts since the late 19th century, plays a critical role. Kazarov (2019) highlights the essentiality of philological and historical research methods in classical studies, where interpreting ancient texts and inscriptions forms the crux of scholarly inquiry. This approach enables a deeper comprehension of historical texts through the linguistic nuances of ancient writings. Additionally, Wadhwani (2017) discusses the application of historical methods in organization and management studies, where interpreting the past involves abductive reasoning, analyzing historical data from a contemporary perspective.

This dynamic nature of historical research, where the past is viewed through the lens of present understanding, is further evidenced by historians like Wolf (2018), who liken their research approach to that of scientists. Historians rely on a comprehensive array of primary and secondary sources, including oral histories, to construct accurate and reliable narratives of the past, reflecting the complexities and nuances of historical events and phenomena.

With these approaches to reconstructing histories, perhaps the best known is still a biographical one. Biographical writing in history encompasses a range of techniques and approaches to enrich the narratives about individuals. This genre typically employs a narrative structure following the subject's life from birth to death, embedding historical context and posthumous events as necessary. The multifaceted research process involves gathering information from diverse sources such as anecdotes, interviews, letters, public records, and historical documents, with biographers often documenting their research process to provide insights into their methodologies and challenges encountered (Krasny, 2006; Renders, 2013). Some authors opt for historical fiction, blending factual information with fictional elements to create more engaging narratives (Daniels, 2023). Moreover, collective biographies, focusing on groups of individuals, offer broader perspectives on historical events and societal dynamics, enabling a more comprehensive view of the societal and historical contexts of the subjects (Rollyson, 2013; Evans & Reynolds, 2012). This biographical approach uses individual life stories as a lens to understand broader historical contexts and societal changes, underscoring the impact of individual lives on historical events and offering a unique perspective on how individuals are shaped by and shape their times. Incorporating narrative elements like character development, setting, and plot progression is crucial, making the story engaging and informative, and providing a deeper understanding of the subject's life and the historical context. Effective use of these narrative elements in biographies can offer valuable insights into the lives of historical figures and influential individuals, playing a significant role in understanding and interpreting the past (Mann, 2009; Oakley, 2010).

Finally, in the domain of digital humanities, contemporary approaches to documentation, archiving, and contextualizing narratives of various eras and civilizations have witnessed a transformative shift, driven by technological advancements and interdisciplinary collaboration. This paradigm shift is characterized by the integration of digital technologies in the process of documenting and preserving historical records, thereby enabling more dynamic and interactive modes of engaging with the past. For instance, one such approach to documentation leverages advanced technologies like optical character recognition (OCR) and natural language processing (NLP) to convert historical texts and manuscripts into digital formats. This digitization process not only preserves the physical artifacts but also makes them accessible to a global audience. Scholars like Murry (2020) and Lydon (2021) have emphasized the role of digitization in democratizing access to historical documents, noting how digital archives have become indispensable resources for researchers worldwide.

Moreover, digital archiving in the humanities extends beyond mere digitization. It involves the creation of comprehensive digital repositories that provide contextual information about the artifacts. These repositories often include metadata, annotations, and interpretative layers that enrich the primary sources. For instance, Locke and Wright (2021) highlight the use of interactive digital platforms that allow users to explore historical artifacts in a more engaging and informative way. These platforms often include features like zoomable images, 3D reconstructions, and hyperlinked annotations, which offer a deeper understanding of the cultural

and historical context of the artifacts (Howland et al., 2020; Jacobs, 2022). On the other hand, contextualizing narratives of different eras and civilizations through digital humanities approaches also involves the use of big data analytics and machine learning algorithms. These technologies enable the analysis of large-scale historical data to uncover patterns, trends, and insights that were previously inaccessible. Researchers like Lombardi and Marinai (2020) have demonstrated how machine learning (ML) can be employed to analyze patterns in historical texts, providing new perspectives on social, cultural, and political dynamics of past civilizations.

Furthermore, digital humanities projects often emphasize collaborative and interdisciplinary work, bringing together experts from various fields such as history, linguistics, computer science, and archival studies. This collaboration fosters a more holistic approach to understanding and interpreting historical narratives. As noted by Su (2020), interdisciplinary projects in digital humanities offer unique opportunities for synthesizing diverse methodologies and perspectives, leading to more nuanced and multifaceted interpretations of historical events and phenomena. In essence, digital humanities approach to documentation, archives, and contextualizing narratives represents a confluence of technology and traditional humanities scholarship. These approaches not only preserve and make historical records more accessible but also provide innovative tools for analyzing and interpreting these records. The digital humanities field thus plays a crucial role in shaping our understanding of different eras and civilizations, offering new ways of engaging with and interpreting the past. As we continue to advance in the digital age, the importance of digital humanities in preserving and understanding our cultural heritage becomes increasingly evident, underscoring its significance in contemporary scholarship.

The construction of historical biographies, a multifaceted endeavor, has traditionally utilized a range of methodologies, including personality assessment techniques, psychometric tools, personality profiling, classical methods of historical research, and, more recently, digital humanities methodologies. These approaches collectively contribute to a comprehensive understanding of historical figures, blending psychological analysis with historical context. Techniques like self-report inventories and projective methods in personality assessment, along with classical methods such as philological analysis, have provided deep insights into individual personalities and their historical significance. However, these approaches often encounter challenges when dealing with fragmentary and non-digitized records, as seen in the Burundian case study. Such records, while rich in information, may be inaccessible or incomplete, limiting the scope of traditional biographical research.

METHODOLOGY

The Holistic Archival Personality Profiling Model (HAPPM) (Table 1), in this context, represents a significant advancement in historical biography construction. By integrating methodologies from both traditional and digital humanities disciplines, HAPPM addresses the limitations inherent in fragmentary non-digitized records. Leveraging ML, NLP, and LLMs, HAPPM offers a novel approach to deciphering and contextualizing historical narratives. This model builds upon previous methods, enhancing the analysis of personalities and historical contexts with the depth and precision offered by digital tools. The strengths of HAPPM lie in its ability to process and analyze large volumes of diverse data, including fragmentary and non-standardized records. This capability is particularly beneficial in cases like Burundi's, where conventional records are incomplete or inaccessible. By applying ML and NLP, HAPPM can extract and interpret data from these challenging sources, providing new insights into historical figures and eras. However, the reliance on digital tools also brings inherent challenges, such as the potential for over-reliance on

algorithmic interpretations and the need for constant updates to technology and methodologies. Thus, while traditional approaches to constructing historical biographies have provided foundational insights, the integration of digital humanities methodologies, as exemplified by HAPPM, offers a more robust and nuanced understanding of historical narratives, especially in the face of fragmentary and non-digitized records. This integrated approach not only preserves the integrity of traditional historical research but also opens new avenues for exploration and understanding in the field of historical biography.

Table 1: The Holistic Archival Personality Profiling Model (HAPPM)

Component	Description	Purpose
Data Source Diversification	Inclusion of a wide range of archival materials like personal correspondences, social media footprints, and family memorabilia.	To capture a more nuanced view of individuals, encompassing everyday experiences and personal interactions.
Digitization and Data Transformation	Conversion of various data forms, including handwritten documents, into machine-readable formats.	Facilitates the extraction and analysis of comprehensive data, preserving historical documents and enhancing accessibility.
Semantic Data Classification	Use of biotags, chronotags, and geotags for organizing data within specific spatial and temporal contexts.	Enhances data organization and contextualization, providing a detailed understanding of subjects' life experiences.
Advanced Language Models	Employment of large language models for analyzing digitized and tagged data.	To simulate conversations with historical figures, offering a holistic representation of personalities.
Innovative Data Analysis Techniques	Development and application of advanced data analysis techniques for interpreting extensive data.	Ensures a more accurate representation of individuals' lives by uncovering patterns and insights from complex datasets.
Ethical and Privacy Considerations	Establishment of guidelines for ethical use of personal data and maintenance of transparency in data handling.	Respects privacy and consent, ensuring ethical research practices.
Interdisciplinary Collaboration	Collaboration between historians, data scientists, and technologists.	Enriches biographical research with diverse perspectives and expertise.
Training and Capacity Building	Provision of training in digital tools and data analysis methods.	Enhances researchers' skills in modern research methodologies.
Continuous Methodological Evaluation	Regular evaluation and refinement of methodologies through feedback and iterative improvement.	Ensures methodologies remain relevant, effective, and ethically sound

Burundi presents itself as an ideal case study for the HAPPM approach, primarily due to its unique historical context and the nature of its archival records. Unlike its neighbor Rwanda, which experienced intense and widely documented genocide, the historical trajectory of Burundi has been characterized by a lack of consistent governance, economic instability, and relative obscurity in the global context, particularly during the tumultuous periods of the 1960s and 1970s. This period was marked by looting, bombing, and a general absence of structured record-keeping, which has resulted in a fragmented and piecemeal archival landscape.

The archives in Burundi, especially when compared to those in countries like Liberia, which has a more comprehensive collection of saved newspapers and other historical documents, reveal a stark difference. The Archie P. Williams Center for Historical Information and Archives Research, for example, boasts a better collection than the University of Burundi. The archival situation in

Burundi is a patchwork of materials assembled by archivists, often relying on foreign entities for context and content. Since the 1990s, the need for context in understanding the national history has been critical, particularly for establishing financial rails and economic stability. This archival deficit is one of the factors contributing to Rwanda's comparative advancement over Burundi, with parallels observable in other regions such as Thailand and Laos.

Bujumbura, as the cultural capital of Burundi, offers an unparalleled opportunity for the HAPPM approach. The city houses over a million records that have never been digitized or analyzed on a large scale. This untapped repository includes significant information not just about Burundi but also about the broader East African region, including Rwanda. The HAPPM approach, with its integration of ML, NLP, and LLMs, is uniquely suited to tackle the challenges posed by these records. Its capability to process, digitize, and analyze large volumes of diverse, fragmented data can unveil new insights into the history, societal changes, and cultural dynamics of the region. Furthermore, the application of HAPPM in Burundi can set a precedent for similar research in other regions with under-documented histories, offering a model for how digital humanities can bridge gaps in historical knowledge and understanding.

The process of scanning and digitizing these extensive records necessitates a highly collaborative and resource-intensive effort. The initiative involves cooperation with the charity association of a private research organization that is tasked with the digitization process. The equipment used for this purpose includes flatbed scanners, laptops, desktop scanners, cell phones, and external hard drives. The agreement for accessing and digitizing these records involves a partnership with the Ministry of East African Community Affairs, Youth, Sports, and Culture. This ministry, while operating independently, works in tandem with the University of Burundi, which plays a crucial role in the scanning process.

The University of Burundi is responsible for conducting the scanning of the records, with an overarching aim to produce a study that could serve as a benchmark for similar initiatives in other regions. This involvement not only facilitates the digitization process but also empowers the university to conduct research on its own national history, leveraging the newly digitized data. The digitization process is meticulous and comprehensive, ensuring that all records are accurately scanned and uploaded to servers for subsequent analysis and research.

The methodological approach employed in the HAPPM is multifaceted, combining traditional archival techniques with advanced digital technologies to create a comprehensive framework for historical and biographical research. The methodology can be delineated into several key phases:

Data Collection and Curation
The initial phase involves the systematic collection of archival materials. For the Burundi case study, this entails collaborating with local institutions and authorities to access a wide range of records, including government documents, personal correspondences, voter registries, and various other administrative and personal records. The curation process involves categorizing these documents based on their relevance, historical significance, and the quality of information they provide.

Digitization and Data Conversion
The collected records are digitized using high-resolution scanners, ensuring that the digital copies are clear and complete. Techniques like Optical Character Recognition (OCR) are employed to

convert these records into machine-readable formats. This step is crucial for facilitating subsequent data analysis and ensuring that the records are preserved in a durable, accessible format.

Semantic Analysis and Tagging
Once digitized, the records undergo a semantic analysis process. Utilizing NLP techniques, the data is analyzed for key themes, patterns, and linguistic markers. Data is systematically classified using biotags (related to individuals), chronotags (pertaining to temporal aspects), and geotags (concerning geographical information). This semantic tagging enables the contextualization of the data within specific spatial and temporal frameworks, making it easier to analyze and understand in relation to historical events and personal histories.

Integration with Large Language Models (LLMs)
The enriched dataset is then integrated with advanced LLMs. These models are capable of "conversing" with the data, allowing researchers to interact dynamically with the historical narratives. This interaction is not limited to mere fact recollection but extends to a more nuanced engagement with the personalities and experiences of historical figures. The LLMs offer an additional layer of semantic interpretation, enhancing the depth and richness of the information extracted from the archives.

Data Analysis and Interpretation
The final phase involves the analysis and interpretation of the data. Researchers employ both quantitative and qualitative methods to extract insights from the data. This might include analyzing voting patterns, tracing familial connections, studying sociopolitical trends, or understanding the evolution of cultural practices. The interpretation phase is guided by historical knowledge, contextual understanding, and the research objectives set forth at the project's outset.

Preservation and Accessibility
Ensuring the long-term preservation of the digitized records and making them accessible to researchers, historians, and the general public is a key component of the HAPPM approach. This involves storing the data in secure, sustainable digital formats and creating user-friendly interfaces for accessing the archives.

The process of taking the output of these steps and creating conversable AI clones of historical figures using documentation is a groundbreaking endeavor that requires a meticulous and culturally informed approach (Table 2). This process begins with the careful selection of historical figures and the compilation of an extensive array of primary source documents associated with them. These documents may include personal letters, speeches, diaries, and other writings, complemented by third-party accounts such as biographies, news articles, and scholarly research. The thorough compilation of these materials is crucial, as it forms the foundational dataset from which the AI will learn and recreate the personality and thought patterns of the historical figure. Once the historical figures are selected and the relevant documents compiled, the next critical step is a deep cultural and contextual analysis of the material. This stage addresses the challenges highlighted by research from Harvard University, which found discrepancies in AI responses based on cultural distances from the United States (Atari et al., 2023). To mitigate such biases and ensure cultural authenticity, the involvement of experts well-versed in the culture and primary sources of the subject is indispensable. These experts, whether they are historians, linguists, or

cultural scholars, provide invaluable insights into the nuances, idioms, and context-specific meanings in the source material. Their expertise ensures that the AI model is not only factually accurate but also culturally and historically representative of the figures it seeks to emulate.

Table 2: Steps to Creating AI Clones Using GPTs

Step	Details
Step 1: Define the Project Scope and Objectives	**Objective:** Determine the specific historical figures and periods you want to focus on. **Audience:** Decide who the target audience is (e.g., students, researchers) and tailor the content to be age-appropriate.
Step 2: Gather Primary Source Information	**Research:** Collect primary source documents relevant to the historical figures and periods of interest. This can include letters, speeches, diary entries, and other historical texts. **Digitize:** Ensure all documents are in a digital format, preferably text-based (e.g., PDF, Word, plain text).
Step 3: Building Your Custom ChatGPT/OpenAI	**OpenAI Account:** First, you need a ChatGPT Plus or Enterprise account from OpenAI. Once you have it, log in to your account on OpenAI's website (https://chat.openai.com/). **Create Your GPT:** In the sidebar on OpenAI's site, click "Explore" and then "Create a GPT." You'll be presented with a split screen where you can enter prompts to build your chatbot on one side and preview its responses on the other. **Input Instructions:** Enter your specific instructions for the chatbot in the message box of the "Create" page. The GPT builder will suggest a chatbot name, profile picture, and default conversation starters, which you can modify as needed. **Advanced Configuration:** Click "Configure" to access advanced settings. Here you can change the chatbot's name, description, profile picture, and more. Most importantly, you can upload knowledge files for your chatbot to reference, such as primary source documents about historical figures. **Save and Share Your GPT:** After configuring your GPT, save it and decide who you want to share it with. You can make it accessible only to yourself, to anyone with a link, to the public, or just within your company if you're on an Enterprise plan.
Step 4: Customizing Age-Appropriate Responses	**Custom Instructions Feature:** ChatGPT has a feature that allows you to add custom instructions, which influence how it generates responses. This feature is available for all ChatGPT plans and is a huge time-saver as it eliminates the need to constantly reiterate your preferences. **Setting Up Custom Instructions:** The custom instructions feature includes two boxes: one for adding information about yourself and your role, and another for specifying how you want ChatGPT to format its responses, including tone and style. **Response Filter:** You can start with a response filter, which helps ensure that ChatGPT provides accurate, factual, and nuanced answers. For example, you can instruct it to provide nuanced, factual answers, and flag uncertainties.

The next phase involves the processing of this data and the training of the AI model, typically a sophisticated large language model. This stage is where the intricacies of language, speech patterns, and the rhetorical style of the historical figures are translated into a format that the AI can understand and replicate. The data must be meticulously cleaned, organized, and semantically tagged to facilitate effective learning by the AI. The training process is

comprehensive, aimed at enabling the AI to accurately mimic the communication style and intellectual dispositions of the historical figures. It is a delicate balance between ensuring the AI's responses are reflective of the figure's known views and characteristics while avoiding the imposition of contemporary biases or misinterpretations.

Post-training, the clones undergo rigorous testing to verify the accuracy and authenticity of their responses. This is a critical step, as it assesses whether the AI effectively captures the essence of the historical figures in a manner that is both credible and respectful of their legacy. The cultural experts and historians involved in the project play a pivotal role in this phase, evaluating the AI's outputs against the historical and cultural backdrop of the figures. Their feedback is crucial in identifying any areas where the AI may deviate from expected responses, necessitating further refinement and retraining of the model.

Implementing continuous feedback loops is essential for the ongoing improvement and accuracy of the AI clones. As new historical data emerges or as further research sheds new light on aspects of the lives and thoughts of figures, the AI models are updated accordingly. This iterative process ensures that the AI clones remain dynamic and evolve in line with the expanding body of knowledge about the historical figures they represent. Finally, these clones are introduced to public interaction and educational contexts. This step is where the fruits of the laborious process are realized, as the clones offer unique, interactive experiences for learning about historical figures. They serve as innovative educational tools, providing students and enthusiasts with an engaging way to explore history and understand the personalities that shaped it. This interactive dimension adds a new layer to historical education, allowing for a more immersive and personalized experience of learning about the past. The clones can be utilized in various settings, from classrooms to museums, offering responses and engaging in dialogues that bring historical figures to life in a manner previously unattainable.

The adoption of this methodology globally holds significant promise for the field of historical research and education. By leveraging advanced AI technologies and ensuring cultural accuracy and sensitivity, researchers can recreate conversable clones of a wide range of historical figures, each offering unique insights into their era and society. This approach not only enhances our understanding of the past but also democratizes access to historical knowledge, allowing a broader audience to engage with history in a meaningful and interactive way. Therefore, the creation of conversable AI clones of historical figures represents a novel convergence of technology, historical scholarship, and cultural sensitivity. The process outlined above, when adopted globally, has the potential to revolutionize the way we interact with and understand history. It offers an exciting future for the field of digital humanities, where technology serves as a bridge connecting us more closely with the past and its influential personalities.

RECOMMENDATIONS

Following upon the first phase of the project, which focused on digitizing over 100,000 physical records from various sources, the groundwork has been laid for a more expansive exploration of Burundian history and culture. Through international and interinstitutional collaborations, like that of The University of Burundi, where the scanning the records presents an opportunity to model a successful digitization initiative for similar projects. To further augment these initial datasets, the research team recommend combining these digitized records with online records from the Ministry of Education, which includes the results of exams (such as the PSAT) encompassing over 200,000 names, along with dates of birth and schools attended (Sabiraguha

et al., 2023). The integration of additional information will provide a more comprehensive dataset, enabling a richer analysis of educational trends and demographics over time (Koch et al., 2021).

Moreover, it is essential to consider the data lifecycle, recognizing that the longevity of information is intrinsically linked to the robustness of the systems supporting it (Nguyen et al., 2020). Data stored on a single server or system faces the risk of being lost or becoming obsolete due to technological advancements, changes in data formats, or shifts in institutional management (Dawood et al., 2023). Consequently, the resarch team emphasize the importance of diversifying the storage of data across multiple online servers to mitigate the risk of data loss (Duggineni, 2023). While many databases are securely archived on platforms such as Ancestry.com for genealogical research, they often remain underutilized for broader analytical purposes (Granja, 2023). These databases, which include images and are equipped with software capable of identifying familial connections, offer untapped potential for linguistic and historical analysis. By incorporating similar rich data, he understanding of familial structures and social dynamics within Burundi can be better understood. Another critical resource that has been underutilized is the 1870 census held by the National Archives and Records Administration. This historical document, though licensed for use, has not been extensively explored to answer questions that AI could potentially address (McDowell, 2023). The census data can leverage AI to analyze and uncover insights into the social, economic, and demographic patterns of the period. We also suggest exploring innovative communication methods for making historical data accessible to diverse audiences, including those with disabilities.

One of the major challenges in assembling a representative dataset for countries in sub-Saharan Africa is the fact that their archives, often comprising materials scrounged by locals, presents a contrast in quantity and quality compared to collections held by colonial powers like Portugal and France (Bush, 2013). The European-structured data, while in the hands of post-colonial governments, often remains unexplored due to its external perspective and lack of relevance to native narratives (Ngom & Castro, 2019). However, this data can be invaluable in unraveling the colonial context and understanding historical events from a different viewpoint. There are more records related to these regions in Europe, yet they remain unaggregated due to a lack of demand because the infrastructure and awareness necessary to utilize these resources effectively are absent (Borel-Saladin, 2017). The concept of digital repatriation needs emphasis, requiring a framework that protects digital rights management, ownership, and know-how to monetize information. European countries might not have an immediate need for these records, but they are crucial for validation and research in the originating countries. Therefore, obtaining digital copies, rather than physical ones, is the most pragmatic and efficient solution. Such repatriation efforts have been common in the United States with regards to indigenous populations in North America, but are only now becoming common regarding post-colonial powers and their previous provinces in Africa, the Middle East, and Asia (Christen, 2011; Fitch, 2013; Krupa & Grimm, 2021). This approach respects ownership while ensuring accessibility and usability of the information.

The legal systems in many post-colonial states, influenced by European jurisprudence, often lack access to precedents established in colonial courts, leading to a need to recreate legal foundations. This situation is exemplified by the case of Indian court records. The digitization of such records is not just a matter of preserving history but also of practical necessity for the functioning of contemporary legal systems (Likhoviski, 2021). In countries like Liberia, where even pages from the land registry are only accessible through specific requests and are subject to

alterations, the digitization of records assumes even greater importance (Home, 2021). It prevents the alteration of history and ensures the safe preservation of information. Therefore, this project argues for the usability and accessibility of digitized records, advocating for systems that facilitate easy digitization and retrieval. The Universal Declaration of Human Rights (UDHR), adopted by the United Nations General Assembly, underscores the fundamental rights and freedoms of all human beings. In light of this, the digital repatriation of historical documents as a legal and ethical imperative should be foregrounded. This action aligns with the principles enshrined in the UDHR and the customary international law it reflects (Tünsmeyer, 2022).

The digitization initiative in Burundi outlined here marks a critical step in preserving the cultural heritage of the nation while enhancing the legal and educational utility of historical records. This effort, rooted in principles of digital repatriation and informed by international law and ethical guidelines, addresses the challenges of accessibility and preservation. By fostering digital accessibility and usability, the project not only safeguards historical narratives but also empowers nations to reconnect with their past, thereby nurturing a sense of identity and ownership. Also, the significance of the initiative is further amplified by the planned genealogy symposium. This event aims to unite stakeholders from across East Africa, creating a forum to exhibit the results of the digitization project, discuss the methodologies and technologies employed, and deliberate on the project's broader implications for historical, cultural, and academic research. The symposium is poised to stimulate dialogue and share best practices among archivists, historians, and researchers, promoting collaborative efforts that could inspire similar projects throughout the region.

The comprehensive approach of the HAPPM in guiding the digitization of Burundian archival records is pivotal. This project not only confronts the issue of fragmented, non-digitized records but also exemplifies the application of digital humanities methodologies in revealing the intricate historical and cultural narratives of postcolonial societies. The University of Burundi's involvement in this project is instrumental, aiming to establish a model for archival digitization that can be replicated across East Africa. The genealogy symposium will serve as a crucial milestone in this journey, offering an opportunity to highlight the project's successes and foster regional cooperation in the realm of archival preservation and research.

CONCLUSION

The digitization project in Burundi, focusing on the rich tapestry of its cultural heritage, addresses an urgent need for the preservation and revitalization of historical records. The project emerged from the recognition that a significant portion of Burundi's past, like many postcolonial societies, remains undocumented or trapped in fragile, non-digitized formats. The background of and necessity for the initiative stem from a desire to safeguard these records against the ravages of time and technological obsolescence, ensuring that future generations have access to a crucial part of their cultural identity and history. The methodological approach adopted in this project is groundbreaking. The Holistic Archival Personality Profiling Model (HAPPM) represents a novel synthesis of traditional archival techniques and advanced digital technologies, including machine learning, natural language processing, and large language models. This approach not only allows for the efficient digitization of vast amounts of historical data but also enables a more nuanced analysis and interpretation of this data, shedding new light on the social, cultural, and political dynamics of Burundi's past. At the same time, it is essential to reiterate that the digitization project in Burundi, still in its nascent stages, has shown significant promise and feasibility through the application of the profiling model. The project, already progressing with the near goal of

digitizing over one million physical records and the incorporation of various online sources, is methodically unveiling a more detailed and expansive narrative of the history of the region. This early success lays a robust foundation for continued research and educational pursuits. Looking forward, the potential of this digitization initiative is vast. Expected to surpass 5,000,000 digitized documents, with additional materials to be sourced, the project underscores an expansive and continuous effort in historical preservation. Currently, the vast collection of documents, integral to cultural and historical heritage, is accessible only through physical handling on-site. The digitization effort is thus pivotal in making this extensive body of knowledge widely available, not just for the local researchers and historians but also for the global academic community.

The forthcoming genealogy symposium is set to play a crucial role in this endeavor. The event will serve as a platform for sharing the insights gained, the methodologies applied, and the best practices discovered through this project. This event is anticipated to foster a collaborative network that will encourage similar preservation and analysis efforts across East Africa and potentially beyond. Such a network could drive a movement towards a more inclusive and comprehensive understanding of history, particularly in postcolonial societies. Thus, the digitization initiative in Burundi exemplifies the transformative power of integrating traditional historical research methods with modern digital technologies. This project transcends mere preservation; it enriches our understanding of the past and ensures that the lessons and experiences of our ancestors continue to enlighten and inspire future generations. As the project progresses, its impact is expected to extend far beyond the current scope, offering invaluable insights and preserving the rich tapestry of Burundi's history for posterity.

Data Availability
Data available upon request.

Conflicts of Interest
The authors declare that there is no conflict of interest regarding the publication of this paper.

Funding Statement
NA

Authors' Contributions
Conceptualization, J. Hutson; Methodology, J. Hutson; Validation, J. Hutson; Investigation, J. Hutson – Original Draft Preparation, J. Hutson; Writing – Review & Editing, J. Hutson.; Visualization, J. Hutson.

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