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IMAGE: ACROPOLIS OF ATHENS, UNESCO WORLD HERITAGE

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Animals in the Arts: Exploring Aesthetic Perception and Advocating for Music-Art Infused Education

Rivka Elkoshi

ABSTRACT

This research explores the nuanced connection between visual and auditory art, with a specific focus on the thematic element of "animals in the arts." The study is driven by three primary objectives: to elucidate art interpretation among individuals lacking formal art training, examine the alignment of visuals with corresponding music, and compare responses between musicians and non-musicians. Additionally, the study delves into participants' assessments of artistic performances created by animals.

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This research explores the nuanced connection between visual and auditory art, with a specific focus on the thematic element of "animals in the arts." The study is driven by three primary objectives: to elucidate art interpretation among individuals lacking formal art training, examine the alignment of visuals with corresponding music, and compare responses between musicians and non-musicians. Additionally, the study delves into participants' assessments of artistic performances created by animals.

Participants were adults (N=25, aged 30-74, mean 51.8), devoid of formal visual art training, of whom 11 possess an extensive musical background. In individual sessions, participants interpreted animal imagery, matched images with corresponding music, and evaluated artistic performances by animals. A pivotal finding underscores that exposure to animal-inspired music notably enhances initial visual perceptions—a phenomenon termed the 'Enrichment Effect,' more pronounced among non-musicians. The study advocates for a comprehensive, integrated approach to art-music education.

Towards Music-Art Integrated Education: This study serves as an exemplary illustration of the interdisciplinary connections that can be forged within music and art education. The study experiments demonstrate the intersection of aesthetic perception in arts-infused tasks, centering around the thematic element of animals in the arts and animals as artists. The methodology employed encompasses the integration of animal illustrations and themed musical compositions and evaluation of non-human artistic productions, thereby nurturing a profound symbiosis between visual and aural senses. The incorporation of animals within the realm of music-art education entails the utilization of visuals and auditory stimuli to engage multiple senses, culminating in a comprehensive amalgamation of artistic encounters. With its specific focus on animals, this research serves to elucidate the intricate connections between artistic expressions and other domains, such as ethical considerations related to wildlife, environment, and nature preservation. In conclusion, the study encourages a holistic curriculum in the arts that may strengthen a comprehensive awareness of shared principles and goals grounded in a focal theme such as animals in the arts.

I. INTRODUCTION

Across various cultures and historical epochs, animals have consistently played a crucial role in the arts (Kristeller, 1951). Often utilized metaphorically, these creatures, with their diverse visual characteristics, serve as potent symbols in visual arts and literature. Examples such as Rudyard Kipling's "The Jungle Book" (1894) and George Orwell's "Animal Farm" (1945) illustrate the significant role of animals in literary works, where visual artworks contribute to the narrative.

In the realm of Western notated art music spanning over 700 years, animal sounds have

been integral (Doollitle, 2008). Composers have creatively incorporated, imitated, or recorded animal sounds using various instrumental and vocal techniques. The advent of electroacoustic devices in the 20th century further allowed the integration of actual animal calls into orchestral compositions, leading to the concept of 'biophonies' and the establishment of Bio-musicology as a field of study (Mâche, 1992; Bryant, 2013).

In this study, auditory stimuli derive from Western notated art music, representing and interpreting animal sounds. The primary objective is to highlight how the thematic focus on "animals" can act as a cohesive element, bridging music, visual art, and broader subjects like the environment and wildlife. This exploration unveils the extensive potential for interdisciplinary connections in music and art education.

This study is pioneering in its examination of animal perception through three distinct modes: visual interpretation, music-art association, and evaluation of animals' artistic abilities.

The literature review presented here encompasses three pertinent themes: (1) Artistic portrayals of animals, (2) Correlating visual art with music, and (3) Animals as artists.

II.   LITERATURE REVIEW

2.1 Artistic Portrayals of Animals

Throughout history, animals have been prominent subjects in art, with historical evidence suggesting that animal blood may have been an early form of paint (Burt, 2005). Examples range from ancient cave paintings and ceremonial costumes to contemporary artworks depicting various scenes such as rural settings, markets, and family life (Coleman & Schapiro, 2021). In the modern era, animal-themed visual arts span diverse mediums, including painting, photography, exhibitions in museums, galleries, printed media, television, digital platforms, and educational programs (Arluke & Bogdan, 2010; Brower, 2005; Dunaway, 2008; Kalof, 2007; Kalof & Fitzgerald, 2003; Landes et al., 2012).

Numerous studies have explored the impact of animals in various media, including printed books (Dolins et al., 2010; Wells & Zeece, 2007), classroom programs (Dolins et al., 2010; Farnsworth, 2011; Grauerholz et al., 2020; Mariti et al., 2011; Rivet & Schneider, 2004; Rule & Zhbanova, 2012), and films (Pearson et al., 2011; Wright, 2010). Research has investigated viewers' responses to animal imagery in diverse settings, such as museum visits (Kalof et al., 2011), home television viewing (Paul, 1996), classroom presentations (Dolins et al., 2010; Kalof et al., 2016; Mariti et al., 2011; Rivet & Schneider, 2004; Rule & Zhbanova, 2012), and video watching (Pearson et al., 2011). Overall, exposure to live animals and animal imagery has been found to enhance human understanding of nature (e.g., Pearson et al., 2011), raise awareness of wildlife issues (e.g., Cox, 2017), and alert individuals to wildlife threats (Blewitt, 2010; Farnsworth, 2011; Loeffler, 2004; Rivet & Schneider, 2004). For example, Pearson et al. (2011) discovered that exposure to conservation films featuring endangered orangutans positively influenced college students' attitudes towards the species.

2.2 Correlating Visual Art with Music

The interplay between art and music, elucidated by scholars such as Shank (2003), reflects a profound connection marked by shared meaning and symbolic representation. Numerous studies, including those by Cowles (1935), Eisner (1998), Kalyuga et al. (2000), Parrott (1982), Lindner & Hynan (1987), Limbert & Polzella (1998), and Wehner (1966), have explored this relationship, emphasizing the establishment of connections between visual and auditory stimuli and the augmentation of aesthetic experiences through the fusion of music with visual context.

Eisner (1998) outlines that art perception involves forging connections between visual and auditory stimuli, a notion supported by Kalyuga et al. (2000), who contend that leveraging both auditory and visual channels enhances information processing compared to reliance on a single channel.

Research consistently indicates that individuals, irrespective of artistic background, can perceive connections between art and music (Cowles, 1935; Limbert & Polzella, 1998; Simon & Wohlwill, 1968; Wehner, 1966). Studies, such as those by Limbert and Polzella (1998), reveal participant consensus on the pairing of specific paintings with corresponding musical excerpts. For instance, their research demonstrated that matching music significantly enhanced participants' aesthetic experience of paintings, irrespective of artistic style, emphasizing the integrative impact of music on visual perception.

Audio-graphic studies, including those by Elkoshi (2014, 2017, 2019), Rainer (1925), and Vanechkina (1994), have investigated participants' creation of paintings as visual representations of musical compositions by renowned composers like Beethoven, Chopin, and Debussy. These studies underscore a robust correlation between music and visual expression, with the resultant paintings seamlessly integrating both musical and extra-musical elements.

2.3 Animals as Artists

Visual art is commonly perceived as a distinctly human endeavor for aesthetic enjoyment (Adetunji, 2015; Malloch & Trevarthen, 2018), while music is defined as "structured sounds produced directly or indirectly by humans" (McDermott & Hauser, 2005, p. 30).

Evolutionary insights propose that some animal signals exhibit human-like musical qualities (Fitch, 2006). Examples include drumming behaviors in African gorillas, chimpanzees, and bonobos (Schaller, 1963; Arcadi et al., 2004) and communication through tree striking by palm cockatoos (Wood, 1988).

Though scholars recognize differences between human and animal songs, emphasizing their distinct properties and limited resemblance (McDermott & Hauser, 2005), some argue that animal performances can still be considered music (Fitch, 2006).

Laboratory studies have explored animals' musical abilities, demonstrating, for instance, the goldfish's capacity to distinguish between classical and blues music (Chase, 2001) and pigeons' ability to differentiate compositions by Bach and Stravinsky (Porter & Neuringer, 1984).

Animals in captivity, including chimpanzees, elephants, whales, dolphins, seals, and penguins, have been trained to engage in artistic activities, such as painting and playing musical instruments (Severini, 2019; Soldier, 2017). Concerts and exhibitions featuring animal artistic contributions have been organized, raising ethical concerns regarding animal welfare (Mitchell, 2016; Singer, 2009; Smulewicz-Zucker, 2012).

Studies analyzing the ethics of animal involvement in art, such as English et al.'s (2014) observation of captive elephants' stress-related behaviors during painting sessions, underscore the need for careful consideration of the well-being of animals engaged in artistic activities.

III. THE STUDY OBJECTIVES

The study aims to achieve three objectives: (1) investigate the perception and interpretation of artistic animal imagery among viewers without an academic background in visual art, (2) examine the audio-visual matching of animal-inspired music with animal imagery and compare the matching responses between musicians and non-musicians, and (3) explore participants' opinions and feelings regarding the involvement of animals in music and art performances.

IV. METHOD

4.1 Participants

The study included 25 adults aged 30-74 (mean age: 51.8 years), with 14 males and 11 females, all lacking a formal background in visual arts. Among them, 11 were musicians, comprising musicians with extensive formal academic backgrounds in music (n=8) and music professors (n=3).

4.2 Recruitment and Ethical Considerations

The study was conducted individually with each participant in a private studio, employing chain-referral sampling for recruitment. Participants voluntarily opted to take part and were provided comprehensive information about the study's objectives and procedures before scheduling meetings with the researcher. In adherence to ethical standards, participants signed informed consent forms before the commencement of the experimental sessions. This report assures participant anonymity to preserve confidentiality.

4.3 Process

The study encompassed 25 individual sessions, each lasting 60–75 minutes, conducted through face-to-face meetings. Each session was structured into three parts: (1) interpreting artistic animal imagery, (2) pairing animal images with animal-based music, and (3) evaluating videos depicting animals performing art.

4.4 Type of Study

Qualitative analysis was employed in this study to extract insights from participants' narratives. The analysis involved systematically examining and organizing participants' actual words to identify common themes and patterns that emerged from their interpretations (Brau & Clarke, 2006; Bresler & Stake, 2012; Namey, 2012). The researcher aims to provide a comprehensive description of participants' responses in the three study experiments by categorizing and presenting direct quotes as examples.

V. THE THREE EXPERIMENTS

Experiment 1 - Interpreting Animal Imagery: Participants engaged with a series of seven artistic animal pictures displayed individually on a computer screen, each devoid of accompanying information. The artworks featured illustrations of a Cuckoo, Rooster, Cat, Horse, Bull, Goldfish, and Flying-fish (see Figure 1 a-g).
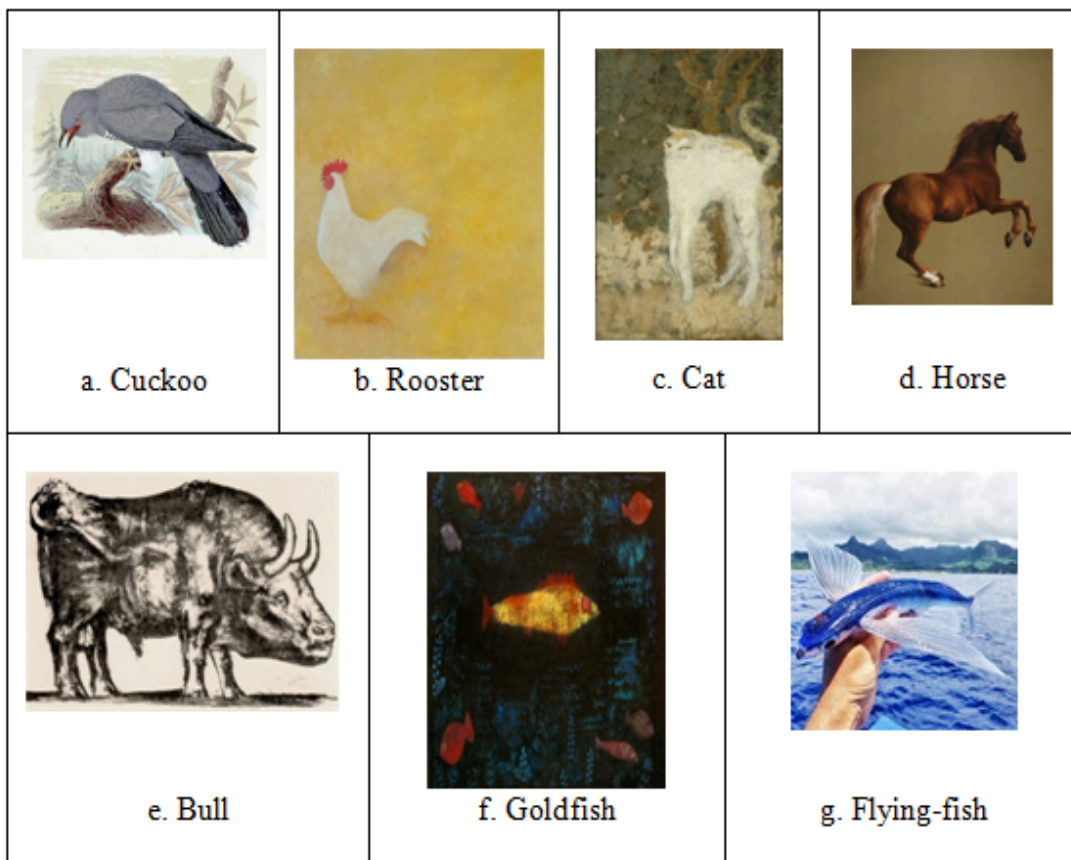
Figure 1: Animal Imagery

Animal Imagery

- Cuckoo: An illustration from the book 'Our Birds in Home and Garden' (1873) by Dutch artist Johannes Gerardus Keulemans (1842-1912).
- Rooster: An oil painting on canvas (80 x 60 cm) by Israeli artist Osnat Reisman Ben Shalom (b. 1947).
- Cat: "The White Cat" (1894) by French artist Pierre Bonnard (1867-1947), featuring a cat with an arched back.
- Horse: "Whistlejacket" (1762) by English artist George Stubbs (1724-1906), an oil on canvas painting depicting a horse in a "levade," a vertical position.
- Bull: The second plate from the series "Le Taureau" (1945-6) by Spanish artist Pablo Picasso (1881-1973), portraying the transformation of a bull through progressive stages.
- Goldfish: An oil and watercolor painting (1925) by Swiss artist Paul Klee (1879-1940) featuring a radiant golden fish surrounded by red fish.
- Flying-fish: A photograph (2019) by Jamaican marine biologist Guy Harvey (b. 1955) presenting a winged fish.

Experiment 2: Matching Animal Imagery with Corresponding Animal Music

Participants paired animal illustrations with animal-inspired classical music. Seven animal-based classical compositions were randomly played through YouTube with the computer screen turned off. Participants were instructed to "Match the musical work with the most suitable animal picture(s) from those presented in the previous task or declare 'no match.'" Subsequently, participants provided reasons for their pairings.

Art-Music Pairing

The list below showcases the pairing of animal images with corresponding animal music. (Refer to the discography list for video links).

- Cuckoo (1a) paired with 'The Cuckoo' (1702) Toccata Scherzo by Italian composer

Bernardo Pasquini (1637-1710), featuring repeated cuckoo calls.
- Rooster (1b) paired with 'La Poule', the 5th movement of Suite No. 2 in G, (1726/27) by French composer Jean-Philippe Rameau (1683-1764), featuring onomatopoeic indications for hen-and-rooster pecking.
- 'Cat' (1c) paired with "Cat" from Sonata Representativa C. 146 in A-Major (1669) by Bohemian-Austrian composer Heinrich Ignaz Franz von Biber (1644-1704), humorously imitating cat sounds through violin glissandi.
- Horse (1d) paired with 'Grand Galop Chromatique' in E-flat S.219 (1838) by Hungarian composer Franz Liszt (1811-1886), a piano piece mimicking the galloping motion of a racehorse through virtuoso jumps and chromatic scales.
- Bull (1e) paired with 'The Ox Tail' for clarinet and piano No. 1 in B-flat (2004) by Chinese-American composer Chen Yi (b. 1953), inspired by the ancient Chinese 'Ox Tail Dance' with clarinet sounds reminiscent of bull horn blowing.
- Goldfish (1f) paired with 'Le Poisson d'Or' (1915) by English composer Hugh Tyrwhitt-Wilson, known as Lord Berners (1883-1950), capturing a goldfish's circling and diving movements through repeated motifs and rapid glissandi.
- Flying-fish (1g) paired with the sixth movement of 'Six Fish' for a unique guitar quartet (2005) by Australian composer Nigel Westlake (b. 1958), capturing a flying fish leaping out of the ocean through syncopation and hocketing.

Experiment 3: Evaluating Animals as Artists

Participants were tasked with evaluating two videos featuring animals as artists.

- Animals as Musicians: Thai Elephants in Lampang, Thailand, playing traditional percussion instruments with their trunks, led by a conductor and guided by trainers.
- Animals as Painters: A rhinoceros, a chimpanzee, and penguins spreading paint on canvas. Keepers select the colors, guide them onto the canvases, and showcase the resulting products.

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VI. CATEGORIES AND EXAMPLE RESPONSES IN EXPERIMENT 1 - 'ANIMAL VIEWERSHIP'

Four primary categories emerged from participant responses to animal artworks: Perception, Description, Interpretation, and Affect.

In the Perception category, viewers focus on aspects such as species identification, speculations about the species, artist information, or artistic style. For example, Ali, a 44-year-old male music professor, identifies 'Bull' (Figure 1e) as Picasso's work, mentioning its resemblance to Guernica. Tamar, a 55-year-old female piano teacher, speculates on the 'Bull' illustration, suggesting "it might be a 'Begamut' (Russian: hippopotamus)."

The Descriptions category engages viewers in detailing pictorial elements like colors, shapes, design, and details. Tamar describes Flying-fish (Figure 1g) as having white wings, fins, and a tail, with cold, transparent colors and green mountains on the horizon, noting its symmetrical and balanced composition.

The Interpretation category focuses on viewers' speculations about animals' temperament, actions, intentions, or anthropomorphism. For example, Sela, a 60-year-old female composer, interprets the 'Horse' picture (Figure 1d), attributing human-like characteristics and speculating about the animal's actions, intentions, and temperament:

"It's a mare who loves being in the spotlight. She takes pride in her well-groomed tail and cares about what the audience thinks of her. She winks at the crowd with one eye, just like a woman checking her impression. She stands on two legs, like a lady in high heels".

The Affect category relates to participants' personal positive or negative attitudes towards the artwork. For instance, Moshe, a 74-year-old historian, expresses his fondness for the Cat illustration (Figure 1c): "I really enjoy the painting. The soft colors and gentle contrasts are pleasing to me, as they are not overly strong." On the contrary, Rachel, a 70-year-old high school teacher, expresses her dislike for the Cat: "It's a picture I'd simply scroll past. The colors seem faded. It's just not my cup of tea."

VII. CATEGORIES AND RESPONSES IN EXPERIMENT 2 – 'ART-MUSIC PAIRING'

Four primary categories were identified from the art-music matching data:

- *Compatible pairs:* These are identical to the research pairs presented above (Art-Music Pairing List).
- *Incompatible pairs:* These deviate from the research pairs.
- *Multiple pairs:* Referring to instances where more than one picture is paired with a musical composition.
- *Unmatched:* The respondent could not find a connection between the music and a picture.

The reasons given for an art-music match fall under three categories:

- *Intra-musical considerations:* Encompassing musical elements such as pitch, rhythm, tempo, instrumentation, and tonality. For example, Nafet, a 60-year-old male clarinetist, made a compatible match by pairing Picasso's Bull with Chen Yi's "Ox Tail." His decision was influenced by the instrumentation and timbre in Chen Yi's composition: "The clarinet produces sounds like blowing a bull's horn."
- *Extra-musical considerations:* Encompassing programmatic or metaphorical aspects. For instance, Moshe, a 74-year-old historian, made a compatible match by pairing Ben Shalom's Rooster with Rameau's "Hen," guided by imaginative extra-musical considerations: "the music vividly portrays a lively rooster pecking, dancing, and spinning. The rooster knows how to enjoy itself and even displays courtship behavior towards the hens."
- *Compound reactions:* Encompassing both intra- and extra-musical considerations. For instance, Ofik, a 33-year-old male musicologist, made multiple matches by pairing both Klee's Goldfish and Stubbs's

Horse with Westlake's piece "Flying-fish". He based his matching decision on compound considerations, both imaginative associations and musical instrumentation: "On one hand, the music evokes the imagery of sea waves which fits the goldfish. On the other hand, the Spanish horse fits the sound of guitars, a Spanish instrument."

7.1 The 'Enrichment Effect'

Participants frequently enriched their artwork descriptions after listening to the music, resulting in more profound interpretations—an occurrence encapsulated by the term 'Enrichment Effect.' Comparing pre-and post-music narratives often revealed the 'Enrichment Effect.'

For instance, when observing the Rooster in Experiment 1, Moshe remarked, "You don't see details in this picture. Your imagination has to complete the missing details." In Experiment 2, he paired the Rooster with Rameau's 'Hen' and elaborated: "The music is joyous, telling me that the rooster dances, spins, runs, then stands pecking in motion. The rooster is wooing, living, and delighting in life."

VIII. CATEGORIES OF VIDEO EVALUATION IN EXPERIMENT 3 - 'ANIMALS AS ARTISTS'

Three primary categories were identified from the video evaluation data:

- *Treatment:* Assessing whether keepers enrich or abuse animals through artistic shows;
- *Skill:* Assessing the animals' skills as talented or untalented artists;
- *Production:* Assessing the artistic outcomes as art or non-art.

Contrasting views on whether the video activities enhance the animals' well-being or amount to abuse reflect the ongoing ethical debates in this domain. Some participants believed that art is a humane endeavor while animals are unaware of art. They mostly perceived the videos as forms of animal abuse, considering the animals tamed and unskillful, viewing the productions as non-art.

For Instance

- "Art requires a certain level of intellectual capacity that animals do not possess. I think that the animals in the videos are unaware of what they're doing." (Nach, male, lawyer, 74-year-old.)
  Video 1:
- "The elephants are mere robots, trained to perform repetitive movements. The sounds are simply cacophony, not music. Just chaotic and loud noise." (Nafet, a 70-year-old male clarinetist.)
  Video 2:
- "Poor animals. It's just cruel, plain and simple. They're smearing them with paint, and you can tell the animals don't like it. If I had the chance, I'd sue those zoo keepers for what they're doing to the animals. It really bothers me, even watching it on video." (Zed, a 74-year-old male, physician.) "
- "The penguins just walk and make a mess on the page. These paintings are nonsense. It is the trainers who pre-apply the colors on the paper and move the canvas. What the animals do is nothing but unintentional scribbles." (Hana, female, 30-year-old, engineer.)

Some narratives contained mixed evaluations of the different animals' drawing abilities. For instance:

- "The rhinoceros and penguins seem unaware of their drawing, resulting in a messy page. However, the gorilla demonstrated deliberate intention and intelligence in its coloring." (Atar, female, 70-year-old school teacher.)

On the contrary, some participants held a divergent view, considering the animals' actions as enrichment, appraising their artistic skills, and perceiving their productions as art. For instance, Video 1:

- "You can tell that the elephants enjoy what they're doing by how their ears and tails move. Their movements are so precise; it's really impressive. Even though they get some help from someone nearby, they still perform with their own independence. The sounds

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they create are like modern art music, akin to the music by Stockhausen.

Video 2:

- "It's impressive to see animals showcasing their abilities, which demonstrates that animals can be taught! The rhino didn't mind the inedible paint, the smart ape painted with its hand, and the penguins fearlessly walked on the textured surface." (Tamar, a 55-year-old female piano teacher.)

IX. RESULTS

The results encompass three tasks: 'Animal Viewership,' 'Art-Music Pairing,' and 'Animals as Artists.'

9.1 Results in 'Animal Viewership'

The results in the 'Animal Viewership' task are categorized into Perception, Description, Interpretation, and Affect. It's essential to note that many responses fell into multiple categories.

- *Perception:* Most viewers (85%) successfully identified the depicted species, recognizing the intended animals. Despite lacking a formal background in visual art, 26% referenced artistic facts. Some participants (16.5%) expressed ambivalence about the species' identity, especially towards 'Bull' and 'Flying-fish'.

- *Description:* Participants detailed both foreground (68%) and background (50%) elements in the pictures. Color references were less frequent (35%), and mentions of the overall composition were relatively scarce (13%).

- *Interpretation:* Participants mostly speculated about animals' temperament (51%), actions, and/or intended actions (49%). Symbolism, including anthropomorphism, was relatively rare (19%).

- *Affect:* Personal positive and negative emotions were expressed by nearly equal proportions of participants (19.5% and 19%, respectively). Figure 2 presents the results of the 'Animal Viewership' task.
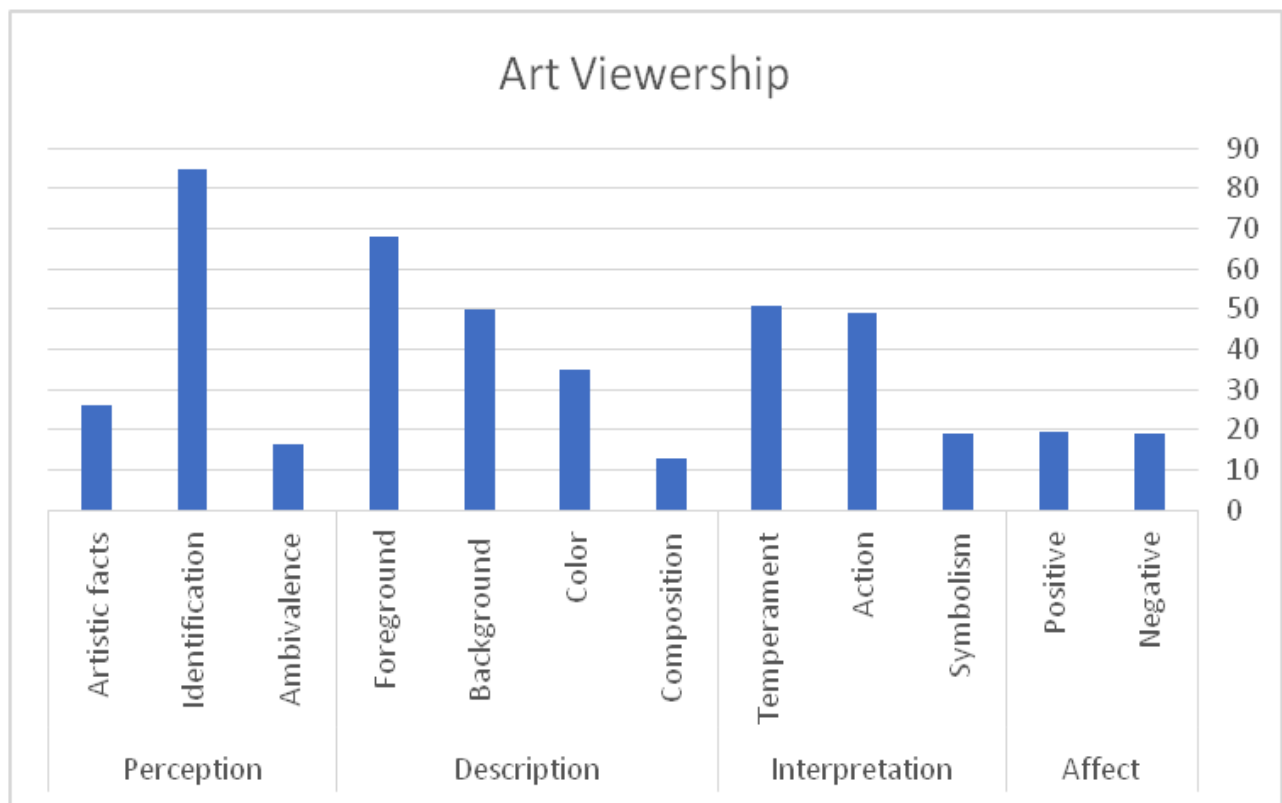
Figure 2: Results in Animal Viewership

9.2 Results in 'Art-Music Pairing' in Musicians and Non-Musicians

The 'Art-Music Pairing' results include Compatible (55%), Incompatible (31%), Multiple (7%), and Unmatched (7%) responses. Results among musicians and non-musicians show that Compatible responses were slightly higher among non-musicians compared to musicians (29% and 26%, respectively). Incompatible pairs were more frequent among non-musicians compared to musicians (21% and 10%, respectively).

A key finding is that listening to animal-inspired music enriched the initial perceptions of the animal images. The 'Enrichment Effect' was observed in 36% of responses, with a higher percentage among non-musicians compared to musicians (22% and 16%, respectively).

Reasons for 'Art-Music Pairing' include mostly intra-musical (64%) and extra-musical (62%) considerations, with compound responses at 34%. Intra-musical considerations were more prevalent among musicians than non-musicians (35% and 29%, respectively), while extra-musical reasoning was higher among non-musicians compared to musicians (39% and 23%, respectively). Compound considerations showed similar percentages among musicians and non-musicians (15% and 19%, respectively).

Figure 3 displays the results of the 'Art-Music Pairing' task among musicians and non-musicians.
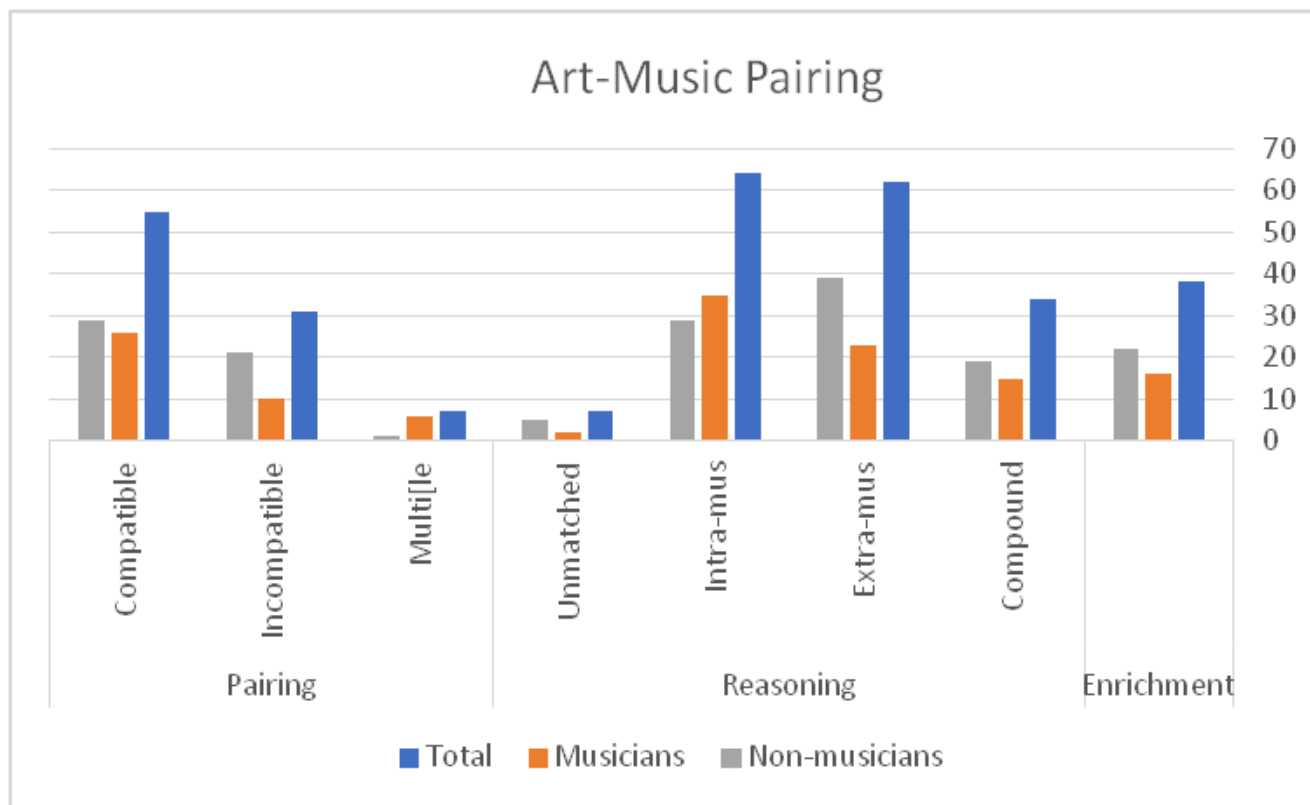
Figure 3: Results in 'Art-Music Pairing' among Musicians and Non-musicians

9.3 Results in 'Animal as Artists'

The distribution of evaluation responses for the videos is categorized into enrichment vs. abuse (treatment), skillful vs. unskillful (animals' artistic talent), and art vs. non-art (artistic outcome). The predominant evaluation response was that productions are non-art (44%). Non-art responses were slightly more prevalent for music compared to painting productions (24% and 20%, respectively). Few participants considered the artistic production as art (18%), with slightly higher percentages for music compared to paintings (10% and 8%, respectively).

In terms of the skill of the animals as artists, more participants regarded animals as skillful artists compared to participants who regarded them as unskillful (36% and 32%, respectively). Painters were regarded as more unskillful than music players (22% and 10%, respectively).

Concerning the ethical aspect, 28% of participants objected to the video shows, perceiving them as animal abuse, with a slight skew towards the music video compared to the painting session (16% and 12%, respectively). Only 12% appreciated the shows as enrichment activities, with an equal share of appreciation for both the music and the painting activities (6% each).

Figure 4 displays the results of the 'Animals as Artists' task.
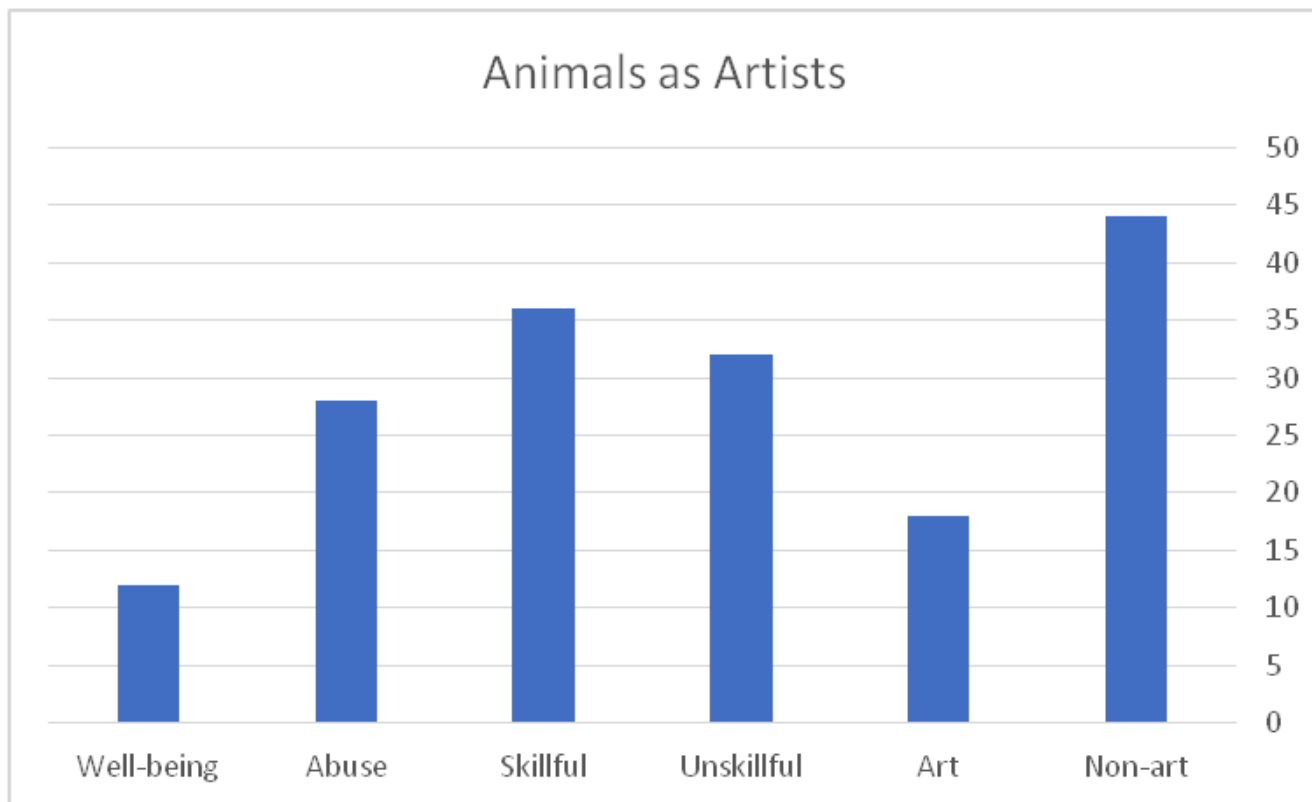
Figure 4: Results in 'Animals as Artists'

X. CONCLUSIONS

Several key findings emerged from the study:

- Viewers without formal training in the visual arts referenced artistic facts, detailed pictures, and further speculated about the images.
- The 'Enrichment Effect' was observed in more than a third of responses, with a higher percentage among non-musicians.
- Compatibility in art-music pairing was almost the same among musicians and non-musicians, while incompatible pairs were more frequent among non-musicians.
- More participants perceived the 'Animal as Artists' videos as constituting animal abuse rather than enrichment, with the resulting musical and visual outcomes predominantly evaluated as non-artistic. However, a higher number of participants considered animals to be skillful artists rather than unskillful.

XI. DISCUSSION

This research explores the nuanced connection between visual and auditory art, with a specific focus on the thematic element of "animals in the arts." The study elucidates art interpretation among individuals lacking formal art training ('Animal Viewership'), scrutinizes the correlation between visual imagery and animal-inspired music among individuals with and without music training (Art-Music Pairing), and delves into the

way individuals evaluate non-human artistic expressions (Animals as Artists).

The findings from the 'Animal Viewership' experiment indicate that participants lacking formal education in the visual arts reference aesthetic aspects. This aligns with Schwan and colleagues (2017) proposition that "multimedia learning and knowledge acquisition not only takes place in formal education but is also found outside of schools and universities in a wide range of non-formal and informal situations and settings" (p. 148).

The accurate identification of depicted species by the majority of participants, coupled with their meticulous attention to foreground and background details in artistic portrayals of animals, reflects their familiarity with the theme. Animal-themed visual stimuli in our time are ubiquitous and permeate various mediums, including printed books (Dolins et al., 2010; Wells & Zeece, 2007), television, digital platforms, educational programs (Arluke & Bogdan, 2010; Brower, 2005; Dunaway, 2008; Kalof, 2007; Kalof & Fitzgerald, 2003; Landes et al., 2012), videos and films (Pearson et al., 2011; Wright, 2010).

The animal viewership experiment unveiled a minimal frequency of explicit color references, suggesting that viewers might have implicitly inferred the colors of the depicted animals. It is plausible that colors were perceived as assumed knowledge, requiring no explicit mention for their interpretation.

Viewers not only delineate the physical attributes of animal images but also express creative imagination and personal emotions through speculations about envisioned temperaments, behavioral inclinations, past actions, and prospective intentions. These findings align with previous research emphasizing the influence of observing animal imagery, showcasing its ability to heighten human awareness and evoke emotions in viewers (e.g., Cox, 2017; Pearson et al., 2011).

The pairing of animal artworks and corresponding animal music confirms a perceived relationship between art and music, consistent with the propositions made by Eisner (1998), Kalyuga and colleagues (2000), and Shank (2003). This finding also aligns with previous research that has explored the association between visual stimuli and matching musical excerpts (Cowles, 1935; Limbert & Polzella, 1998; Simon & Wohlwill, 1968; Wehner, 1966).

The majority of compatible matching responses indicate a commonly perceived connection between animal imagery and animal-inspired music, while incompatible, multiple, and unmatched responses underscore the subjectivity and complexity of art-music matching. Varied perceptions and interpretations in associating visual elements with music contribute to this divergence. The researcher and participants arrived at their pairing decisions from different perspectives. While the researcher relied on documented facts to support the research pairs, participants mostly made their pairings based on intuitive associations and creative thinking, rather than being grounded in formally acquired knowledge. This suggests that the factors influencing music-art pairings are diverse and shaped by personal attitudes.

Musicians' heightened dependence on intra-musical reasoning for art-music pairing can be ascribed to their profound musical expertise. Their comprehensive understanding of musical elements enables them to establish connections within the musical domain. Conversely, non-musicians, lacking this specialized knowledge, may prioritize extra-musical considerations—factors beyond the musical realm, such as personal associations.

The divergent opinions in the 'Animals as Artists' experiment underscore the subjective nature of individuals' perspectives regarding non-human art. A majority of participants voiced objection to the use of animals for artistic purposes, categorizing it as unethical animal abuse. This standpoint aligns with critiques from researchers who also denounce animal artistic displays as ethically questionable (Mitchell, 2016; Singer, 2009; Smulewicz-Zucker, 2012). Furthermore, numerous participants deemed the artistic

outcomes as non-artistic, aligning with scholars who assert that art is an exclusively human endeavor (Adetunji, 2015; Malloch & Trevarthen, 2018).

Conversely, participants expressed astonishment and admiration for animal artistic performances and products, aligning their perspectives with advocates like Soldier (2017), who advocate for enrichment programs and emphasize the benefits of animals engaging in the arts. Participants claimed that animals demonstrate skillful artistic abilities and possess human-like artistic qualities—a notion supported by researchers such as Fitch (2006). The musical and visual outcomes were regarded as genuine works of art, bearing resemblance to contemporary human creations.

These contrasting views reflect ongoing debates regarding ethical considerations about ecology, wildlife, and nature preservation (e.g., English et al., 2014; Rogers & Kaplan, 2007).

XII. IMPLICATIONS: TOWARDS MUSIC-ART INTEGRATED EDUCATION

This study serves as an exemplary illustration of the interdisciplinary connections that can be forged within music and art education.

The integration of art-viewing, music-art pairing, and artistic evaluations into art-music education is underpinned by the assumption of a general validity in cross-modal connections between visual and auditory modalities (Cowles, 1935; Kalyuga et al., 2000; Lindner & Hynan, 1987; Limbert & Polzella, 1998; Shank, 2003; Wehner, 1966). Breaking down the barriers between art and music education is suggested to cultivate a comprehensive aesthetic experience for students (e.g., Bresler, 2022; Casini, 2017). Adopting a multimodality approach in art and music education programs can empower students to explore the transformative potential of the arts, facilitating the transfer of sensations across senses for a deeper, holistic understanding, and appreciation of artistic expressions (Elkoshi , 2019; Bresler, 2022; Eisner, 1998; Elkoshi, 2019; Maur, 1999; McCurdy, 1973).

The concepts of multiliteracy and multimodality, as proposed by Marks (1978) and Duncum (2004), support this notion. Marks (1978) posits that the sensory systems of the human body are incomplete differentiations of a single, evolving common sense. Duncum (2004) emphasizes that for art education to remain relevant to contemporary social practice, it must embrace interaction between communicative modes.

Art viewing, art-music pairing, and artistic evaluation acknowledge the inherent subjectivity in these experiences. In a free-exploring setting, viewers are empowered to construct their own insights about art, blending their existing knowledge, interpretation, emotions, and imagination to explore personal impressions. The synergy created through art-music matching enhances students' perception and interpretation of both mediums. By considering intra- and/or extra-musical aspects, students can articulate multi-faceted interpretations related to both art and music. Music majors can apply their knowledge of musical elements like pitch, rhythm, tempo, and tonality to draw insightful connections between visual and auditory art, deepening their appreciation for both mediums. Evaluating art fosters critical thinking and encourages questioning, interpretation, and the development of individual opinions. Evaluating non-human art provides students with an opportunity to explore ethical considerations, as well as issues related to ecology, environment, and nature.

Last but not least, the incorporation of music into art education is proposed to foster a more enriched and interconnected learning experience, as evidenced by the heightened 'Enrichment Effect,' where musical stimuli intensify and enrich previous perceptions of corresponding visual stimuli among musicians and non-musicians alike.

XIII.   LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

The present study serves as an exploratory case example that investigates the connection between

animals and the arts. However, further research projects are warranted to delve deeper into the intricate relationship between animals and the arts by incorporating different variables. These variables may include diverse types of music, varied visual stimuli, and participants with different characteristics.

Additionally, investigating the long-term effects of exposure to animal-inspired art and music could provide insights into the sustainability and lasting impact of such experiences. Furthermore, exploring the role of contextual factors, such as cultural backgrounds or educational settings, in shaping participants' responses would contribute to a more comprehensive understanding of the complex dynamics involved in the intersection of animals and the arts.

This study has a limited sample size and employs a qualitative analysis approach. Conducting a quantitative study or replicating this qualitative study would contribute to validating the findings and assessing the strength and reliability of the results.

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4. Liszt, *Grand Galop Chromatique* https:// www.youtube.com/watch?v=rYUx1-PpHAo&a b_channel=ValentinaLisitsaQORRecordsOffic ialchannel.

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6. Nigel Westlake, *Flying Fish* from *Six Fish* for guitar quartet (no. 6) https://www.google. com/search?q=Nigel+Westlake%2C+Flying+ Fish+from+Six+Fish+for+guitar+quartet&oq =Nigel+Westlake%2C+Flying+Fish+from+Six +Fish+for+guitar+quartet&gs_lcrp=EgZjaHJ

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IRigAdIBCDE0MTdqMGo0qAIAsAIA&source
id=chrome&ie=UTF-8#fpstate=ive&vld=cid:d
84c7afa,vid:Ke5MxORqiow,st:0.

7. Lord Berners *Le poisson d'or* https://
www.youtube.com/watch?v=fylDYxEsLTw&li
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ALCvHqbTI&index=5.

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The Constitution of India : Working of the Fundamental Rights and the Directive Principles

Arif Saeed

ABSTRACT

The objective of the paper is insight on the Constitution of India is based on the principles of Ideals of Preamble, liberty, equality, fraternity and justice. During the French Revolution the people got the idea from French Revolution, Liberty, fraternity, and equality and several Indian leaders were inspired by French and Russian Revolution. For achieving aim we have undertaken a concise study of several journals and the books which are linked with the provisions of the Constitution manifest great respect for human dignity, commitment to equality and non-discrimination and concern for the weaker section in society. Further, the Constitution makes it mandatory for the Government to protect and promote freedoms and to assure every citizen a decent standard of living. In other words, the Indian Constitution guarantees the basic rights to every citizen of India Which are Claims of a person over other fellow being, over the Society, over the government and recognized by the society ,sanctioned by the Law. This paper dealt with general Constitutional Laws of India and the amendments made into Constitution of India. The paper tells us about the schemes for realization of the above mentioned goals are contained in the Fundamental Rights enshrined in the Constitution Part III and Part IV . The Right to Equality, The right to freedom, the right against exploitation, the right to freedom of religion, cultural and educational rights, right to constitutional remedies and special provisions relating to certain classes are some of the constitutional provisions ensuring human rights.

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I. INTRODUCTION

In democracy the rulers are not free to do what they like ,there are certain rules that the citizens and the rulers have to follow. All these rules together are called the Constitution. It is a body of well defined laws to govern a State and explains, the Organization and structure of the three organs of the government. and a country lays down the basic structure of the political system under which its people are to be governed and this basic structure of the Constitution can not be amended or changed at all. It establishes the main institutions of the government, legislature, executive and judiciary, defines their powers, functions their responsibilities and regulates their relationships with each other and with the people. However every Constitution represents the vision and value of its founding is based on the political and economic ethos and faith and aspiration of the people. It explains the rights and duties of the citizens. Being the supreme law of the land , everyone high or low must respect the Constitution and its acts. So importantly it can be noted that the framing of the The Constitution of a sovereign democratic nation is performed by the people for the purpose of considering and adopting a Constituent Assembly (Baxi, 1981).

India became independent on August 15, 1947 according to the Independence of India Act, 1947 enacted by the British Parliament. It made a provision for the setting up of two independent dominions in India, to be known as India and Pakistan. Thus India along with Pakistan acquired a new international personality. However, both the new states were continued to be administered by the Government of India Act, 1935. The task for preparing the Constitution of India was

entrusted to the Constituent Assembly which met for the first time on 9 December, 1946. The assembly appointed various committees to draft the different articles of the Constitution. The reports of these committees formed the basis on which a draft of the new Constitution of India was prepared in February 1948. Its final shape was given on 26th November, 1949 as the Constitution of India adopted, enacted, and approved but it was completed or came into force on 26th January, 1950. The Constitution India declares India was to be a 'sovereign, socialist, secular, democratic republic'. The term 'democratic' denotes that the Government gets its authority from will of the people. The Government is elected by the people and it is a body of the representatives of the people. India is to be a sovereign because the Country is free from any foreign rule, India is socialist as the means of production is owned and controlled by the government. The Country is Secular as there is equality in religion and the Constitution does not give any special status to any particular religion. The head of the State is President for the Country, it can be called a Republic.

Thus the power to exercise legal as well as political sovereignty vests in people. It gives a feeling that they all are equal 'irrespective of their race, religion, language, sex and culture' (Diwan& Diwan, 1998).

II.   OBJECTIVES

- To study a variety of provisions of the Indian Constitution promoting and upholding human rights.
- Critically examine various rights enshrined in the Indian Constitution.

III.   A REVIEW ON FUNDAMENTAL RIGHTS IN INDIAN CONSTITUTION

Research envisages the critical review on the fundamental rights and directive principles of the state policy of Indian constitution. However it determined the possibility of performance of the fundamental rights by the people in the sovereign state like India.

Human Rights and Debates in the Constituent Assembly A written guarantee of Fundamental Rights in the Constitution of India, envisaging a Constituent Assembly for framing the constitution of India was recognized by the Cabinet Mission in 1946. To this end, a recommendation was made to set up an Advisory Committee for reporting to the Assembly on Fundamental Rights. As per the suggestion of the Cabinet Mission plan, the Constituent Assembly voted to form the Advisory Committee on 24th January, 1947. Sardar Patel was its chairman. The committee was to report to the Assembly on the list of Fundamental Rights, the clauses for the protection of minorities etc. The subcommittee on Fundamental Rights with Acharya Kripalani as the chairman was one of the sub-committees set up by the Advisory Committee. This sub-committee met for the first time on 24 February, 1947, to discuss the drafted list of rights prepared by B.N. Rau, K.T. Shah, K.M. Munshi, Dr. B.R. Ambedkar, Harman Singh and the Congress Expert Committee, as well as miscellaneous notes and memoranda on various aspects of rights. These lists were lengthy and detailed, as they were accompanied by explanatory memoranda and they contained both negative, as well as positive rights taken from different sources, from both within the country and outside. Balancing individual liberty with social control, the former for fulfilling individual personality and the latter for the peace and stability of society was a very tricky problem. Despite disagreement on technique, there was hardly any difference on principles. So it was decided that the Fundamental Rights should be justiciable. The Rights to Freedom, provisions abolishing untouchability, protection against double jeopardy, ex-post facto laws, equality before law, the right to freely practice religion and the protection of minorities were all adopted. The English device of prerogative writs, or directions in the form of writs was the legal method, which was included within the rights to secure them. Right to constitutional remedies was also adopted (Lutz and Burke, 1989). Though a few amendments were accepted, the content of rights and basic principles remained intact. The rights were considered to be fundamental and enforceable by courts but they could not be

absolute. They could be limited by attaching provision to the particular right and by providing for the rights to be suspended in certain circumstances. Individual liberty, right to equality, basic freedoms etc. were passed with certain limitations. The seven Fundamental Rights had close resemblance with human rights enshrined in various international human rights documents.

Members like K.M. Munshi, Ambedkar and K.T Shah were in favor of a more vigorous social programme. So they insisted on a specified time limit within which all the directive principles must be made justiciable. During the debate on the Draft constitution (Nov-Dec, 1948) there were two types of opinions - that the directives did not go far enough towards establishing a socialist state and that they should have placed greater emphasis on certain institutions and principles, central to Indian practice and to Hindu thought, particularly those glorified by Gandhi's teaching. The amendments for development of village life "and economy and the panchayat system of village organization, making the promotion of cottage industries a government responsibility, making it incumbent upon the government to prevent the slaughter of cattle and to improve the methods of animal husbandry and agriculture, amendments calling for the nationalization of various industries are evident of these opinions.

However, most of these amendments were voted down or withdrawn by their initiators.

Consequently, the directive principles of state policy were adopted as part IV of the Indian Constitution by the Assembly.

Fundamental human rights in the sense of civil liberties with their modern attribute and overtone are a development more or less parallel to the growth of constitutional government and parliamentary institutions from the time of British rule in India. The impetus of their development obviously came out of resistance to foreign rule when the British resorted to arbitrary acts such as brutal assaults on unarmed poor Indians. Nationalist Movement and the birth of the Indian National Congress were the direct results. The

freedom movement was largely directed against racial discrimination and to securing basic human rights for all the people irrespective of race, color, creed, sex, place of birth in the matter of access to public places, offices and services.

The history of national struggle for basic human rights can be traced back to the formation of the Indian National Congress, which endeavored to formulate the spectrum of human rights back in 1895, when an unknown author drafted the Constitution of India Bill. However, the first formal document came into existence in 1928, with the Report of Motilal Nehru. The rights enumerated by the Motilal Nehru Report - free elementary education, living wages, protection of motherhood, welfare of children -were a precursor of the fundamental Rights and Directive Principles of State Policy, which were enshrined in the Indian Constitution 22 years later. Most important pronouncement on human rights came in the pages of Objectives Resolution moved by Jawahar Lal Nehru in 1946. In the Objective Resolution, it was pledged to draw up a Constitution for the country wherein "shall be guaranteed and secured to all the country wherein adequate safeguards would be provided for the minorities, backward and tribal areas and depressed and other classes". The Resolution also reflected the anxiety of the founding fathers to incorporate and implement the basic principles enunciated in the Universal Declaration of Human Rights; the Assembly incorporated in the Constitution of India the substance of most of these rights. The two parts-the Fundamental Rights and the Directive Principles of the Constitution of India between them covered almost the entire field of the Universal Declaration of Human Rights. In short, the Objective Resolution forms the basis for the incorporation of various provisions of the Constitution.

IV. THE PREAMBLE AND HUMAN RIGHTS

The Preamble to the Constitution is of supreme importance and the Constitution should be read and interpreted in the light of the grand and noble vision expressed in the preamble. The Preamble of the Constitution declares: "We the people of India, having solemnly resolved to constitute

India into a sovereign, socialist, secular, democratic republic and to secure to all citizens: Justice, social, economic and political; Liberty of thoughts, expression, belief, faith and worship; Equality of status and of opportunity; and to promote among them all; Fraternity assuring the dignity of the individual and the unity and integrity of the nation..." 6 In short, the Preamble concisely sets out the Quintessence of human rights, which represents the aspirations of the people, who have established the Constitution (Sharma, 2003).

V. FUNDAMENTAL RIGHTS AND HUMAN RIGHTS

A unique feature of the Indian Constitution is that a large part of human rights are named as Fundamental Rights, and the right to enforce Fundamental Rights itself has been made a Fundamental Right. The Fundamental Rights in the Indian Constitution constitute the Magna Carta of individual liberty and human rights. The Fundamental Rights under Articles 14-31 of the Constitution provide individual rights based on right to equality, right to freedom, right against exploitation, right to freedom of religion, right to cultural and educational rights (Desai, 1986).

These are negative rights which are made enforceable against the state, if violated.In1973, the Supreme Court gave a decision that the Right to Property was not the part of the basic structure of the Constitution . In 1978, 44th amendment of the Constitution removed the Right to Property from the list of the Fundamental Rights and converted it into a simple legal right under Article 300 A .

5.1 These Rights can be Summed up in Different Categories

Right to Equality (Art. 14-18)

Right to equality is the cornerstone of human rights in the Indian Constitution. All people are equal in the eye of law, nobody is above the law, and no discrimination is made on the ground of caste, religion, gender. While Article 14 states that "the state shall not deny to any person equality before the law and equal protection of the laws within the territory of India," the Article 15 goes to much more specific details that" the state shall not discriminate against any citizen on grounds of religion, race, caste, sex, place of birth or any of them be subject to any disability, liability, restriction or condition with regard to (a) access to shops, public restaurants, hotels and places of public entertainment. "Whereas, Article 16 states that "there shall be equal opportunity for all citizens in matters relating to employment or appointment to any office under the state." Article 17 and 18 directs the state to abolish un-touchability and titles respectively (Sehgal, 2004).

Right to Freedom (Art. 19-22)

Freedom means that others don't interfere in our affairs . By others ,one means government as well as individuals. The six freedoms given us by this right are freedom of expression and speech, assemble in a peaceful manner, form associations and unions, move freely throughout the country, reside in any part of the country, practice any profession. Freedom means absence of Constraints, In practical life . We can take an example of Freedom of Speech. It is one of the essential features of any democracy, our ideas and personality develop only when we are able to freely communicate with others. Even if a hundred people think in one way you should have freedom to think differently and express your views. You are free to criticize the government However, you can not use this freedom to instigate violence's against others. The rights to freedom under articles 19-22, are the soul of human rights in India.

Significantly, Article 19 states that "all citizens shall have the right to freedom of speech and expression; to assemble peacefully and without arms; to form associations or unions: to move freely throughout the territory of India; to reside and settle in any part of the territory of India; and to practice any profession or to carry on any occupation, trade or business." Whereas, Article 20 says that "no person shall be convicted of any offence except for violation of a law at the time of the commission of the act charged as an offence, nor be subjected to a penalty greater than that which might have been inflicted under the law in force at the time of the commission of the

offence." However, the most important article of human freedom is stated in Article 20, which says that "no person shall be deprived of his life or personal liberty except according to the procedure established by law."

Right against Exploitation (Art. 23-24)

The Constitution under Articles 23-24, enumerates a list of rights that prohibits exploitation, human trafficking and similar such exploitations. Article 23 prohibits traffic in human beings and beggars and other forms of forced labour. Our Constitution, instead of using the word 'slavery' used a more comprehensive expression "traffic in human beings", which includes a prohibition not only of slavery but also of traffic in women or children or crippled, for immoral or other purposes (Welch and Leary, 1990). Article 24 of the Constitution prohibits the employment of the children below 14 years of age in any factory or mine or in any other hazardous employment. Thus forced labour is prohibited and children have been protected as a matter of fundamental rights.

Right to Freedom of Religion (Art. 25-28)

The Part III of the Constitution under Articles 25-28 prescribes for certain religious freedoms for citizens. They include freedom of conscience, free pursuit of profession, practice and propagation of religion, freedom to manage religious affairs, freedom to pay taxes for promotion of any particular religion and freedom as to attendance at religious instruction or religious worship in certain educational institutions. In short, these are vital rights of religious minorities in India (Mehta & Verma, 1999).

Cultural and Educational Rights (Art. 29-30)

Article 29 and 30 of the Constitution guarantees certain cultural and educational rights to the minority sections. While Article 29 guarantees the right of any section of the citizens residing in any part of the country having a distinct language, script or culture of its own, and to conserve the same, Article 30 provides that "all minorities, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice". In short, these are important rights, as far as the protection of human rights of minority groups in a majority society as India.

Right to Constitutional Remedies

Chapter III of the Indian Constitution pertaining to Fundamental Rights has a measure of judicial protection and sanctity in the matter of enforcement of these rights. Under Article 32, every person has been given a right to move to the Supreme Court by appropriate proceedings for the enforcement of the rights conferred by Part III. Clause 2 of this Article empowers the Supreme Court to issue directions, or writs, including writs in the nature of habeas corpus, mandamus, prohibition, quo warranto, and certiorari. This right cannot be suspended except when a proclamation of emergency is in force , but during the national emergency fundamental rights of the Citizens can be suspended . (Basu, 2007).

Directive Principles of State Policy

The Part IV of the Constitution popularly known as the Directive Principles of State Policy provides a long list of human civil and economic rights for the people of India. They form the bedrock of human rights in India. The main purpose of this charter of positive rights is to ensure social, political and economic justice to all by laying down basic principles of governance. These principles are intended to be kept in mind both by the legislatures in enacting laws and by the executive authorities in enforcing laws. Although these principles are not enforceable by any Court yet they are fundamental in the governance of the country and it shall be the duty of the State to apply these principles in making laws for the general welfare of their men, women and children (Kothari, and Sethi, 1987). These rights are:

- Providing adequate means of livelihood (Article 3 9 (a)).
- Equal pay for equal work for both men and women (Article 39(d))
- Adequate protection of the health and strength of workers, men and women (Article 39(e)).
- Equal Justice and free legal aid (Article 39 A).
- Living wage, conditions of work ensuring a decent standard of life and full enjoyment of

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leisure and social and cultural opportunities (Article 43).

- Free and compulsory education for children (Article 45).
- Increasing the level of nutrition, the standard of living and improving public health (Article 47).
- Prohibiting the slaughter of cows and calves and other milk and draught cattle (Article 48).

Over the years the scope of rights has expanded, various others rights , Right to freedom of Press, Right to Information. Right to Education, Right to Life, Right to Vote and Right to Property in elections are two important Constitutional Rights.

VI. CONCLUSION

Conclusion , Fundamental Rights are the sources of all Rights of our Constitution and law offers a wide range of rights An evaluation of the Fundamental Rights and the Directive Principles make it amply clear that between Constitution and its implications, almost the entire field of the universal declaration of human rights are covered. Besides, the Indian Constitution, through these two parts (Part III and IV) has made a novel attempt to balance between enforceable rights and non-enforceable rights, allowing them to compliment each other on the fundamental governance of the country. Finally, both these rights are inter-related and indispensable for the nourishment of others.

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Unveiling the Educational Landscape: A Comprehensive Study of the Post-COVID-19 Galician Teaching Community and the Development of a Resilience Assessment Tool

Dr. Manuel Rial Costa

ABSTRACT

The past school year 2019-2020 has experienced a situation of school confinement, which forced the observance of an online education, with inevitable repercussions: affectation on students who had been dragging some previous difficulty (OEI), impossibility of access to technological tools for daily educational performance, uncertainty about when and how the return to normality should take place, i.e., return to face-to-face. This has led teachers to not only feel uncertain about their teaching practices but also to experience a sense of fatigue due to changes that have not contributed to enhancing their professional situation. These changes have often required personal sacrifices. A study carried out to analyze the specific educational situation in the Autonomous Community of Galicia (Spain) has revealed the weariness among the teaching staff, regardless of the type of school to which they are affiliated: public, private, or semi-private.

Keywords: galician teaching community, covid-19 aftermath, educational analysis, resilience assessment, jaded test design.

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The past school year 2019-2020 has experienced a situation of school confinement, which forced the observance of an online education, with inevitable repercussions: affectation on students who had been dragging some previous difficulty (OEI), impossibility of access to technological tools for daily educational performance, uncertainty about when and how the return to normality should take place, i.e., return to face-to-face. This has led teachers to not only feel uncertain about their teaching practices but also to experience a sense of fatigue due to changes that have not contributed to enhancing their professional situation. These changes have often required personal sacrifices. A study carried out to analyze the specific educational situation in the Autonomous Community of Galicia (Spain) has revealed the weariness among the teaching staff, regardless of the type of school to which they are affiliated: public, private, or semi-private. The need to carry out various sampling-participation processes to obtain the sample required by the study, given its relevance, was what motivated the analysis of what leads the group of teachers not to participate, determining, through an indicator, the degree of boredom with them.

Keywords: galician teaching community, covid-19 aftermath, educational analysis, resilience assessment, jaded test design.

I. INTRODUCTION

The COVID-19 pandemic during the 2019-2020 academic year has resulted in a series of consequences for the educational community. This unique situation necessitated unprecedented measures to contain the transmission of the disease (WHO, 2019).

The first of these consequences necessitated a level of confinement that practically affected all students and teachers worldwide. This shift moved teaching and learning processes away from in-person presence, requiring them to be conducted through alternative means. Through the application of online learning, where ICT plays a relevant role *(Rial, 2023)*.

But not every student can access them on equal terms, either due to lack of material resources or economic resources, translating after analyzing the data from the PISA report *(EducacionyFP, 2016)* into a new socio-economic gap or perhaps a deepening of a previous gap that was considered already closed that significantly affected those students who had last educational problems, as indicated by the OEI (2020).

Another consequence that has been observed, especially in those countries with a high level of educational disaggregation, such as Spain, where educational powers have been transferred to the different autonomous communities, is the lack of involvement of the educational authorities to adopt standard short-term measures that facilitate the transmission of teaching-learning processes in situations of absence of presence, as occurred during the confinement stage, observing the lack of ICT resources directed as an educational platform that facilitates communication between the different agents

involved: teachers-students-parents, or specification of the tools to continue with the normal educational process, which required improvisation on the part of the teachers to determine which one or which ones should be selected.

Another immediate consequence of school confinement is, as indicated by OECD sources (2020) that each week that the school community spends in a situation of confinement, an enormous amount of human capital is lost, which results in medium and long-term lack of adequately trained professionals, since it must be regarded as that teachers must be considered, at the same time, students in constant training. As students, they are exposed to the same factors that influence the well-being of their peers, impacting not only their personal lives but also their professional development as a collective group. If the school confinement caused by COVID-19 revealed anything, it was the specific vulnerability faced by the teaching-learning processes and, consequently, all individuals involved in them, as highlighted by the OECD (2021).

Not to mention the rise in diseases and syndromes among the student and teacher populations after the school confinement, attributed in part to the lack of social interaction. Given the drift of the situation and the possibility of new confinements being carried out, on a greater or lesser scale, this is what has determined the need to carry out a research study that analyzes the actual educational situation, focusing on it at the level of the autonomous community and in all its dimensions: social, economic and educational as Trujillo (2020) suggests.

1.1 Contextualization of the Starting Problem

The situation under analysis is influenced by a fundamental element that has directly disrupted the usual progression of the teaching-learning processes. We are referring to the school confinement prompted by COVID-19, which shifted traditional, in-person teaching to an online format where Information and Communication Technologies (hereinafter referred to as ICT) played a significant role.

In this process, a fundamental agent must be taken into account, on which academic excellence is based *(Mosquera, 2020)* and on which a particular analysis has been carried out to determine what motivates him not to participate in the central study. Carried out to understand the educational reality, focused on the Autonomous Community of Galicia.

Considering all of the above, the performance of this particular analysis must allow and lead to the design of a tool that favors knowing, before to carrying out the analysis of the data collected, the degree of boredom of the participants in it, and Therefore, their participation or absence may condition the data received and therefore the results. The reality is that conditioning encompasses a spectrum of diverse outcomes, which manifest depending on the depth of observation and consideration of the provided responses, or the lack thereof, leading to monotony. Hence, the importance lies in its identification and subsequent consideration by the researcher conducting the study.

1.2 Analysis of the Results in Contextualization (Before-During-After)

Taking as the backbone of the analysis the breaking point of the teaching-learning processes that led to the adoption of school confinement due to COVID-19, distancing them from all face-to-face attendance, we adopt a statistical approach to the study, contextualizing it in three different scenarios.

- The first of these scenarios is the one that has been classified as "prior", where educational presence is the distinctive element of the teaching-learning processes, corresponding to a contextualization before school confinement due to COVID-19.
- The second of the three scenarios, referred to as "during," pertains to the period of school confinement prompted by COVID-19. During this phase, teaching and learning processes occurred in the absence of in-person

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instruction, instead conducted through online teaching methods.

- The third and final scenario is the return to the new normal *(DAAD, 2020)*, characterized by the return to face-to-face teaching-learning processes.

Taking all this into consideration, we have proceeded to determine the Gh (from now on, degree of boredom) based on the participation and sampling processes and the number of surveys received vs. submission phase, carried out to obtain the data that guarantee the reliability and viability required of the study.

1.3 Teacher Response/Behavior

After establishing the number of teachers required for participation in the study and allocating them proportionally according to the province and the type of affiliation of the Educational Centers, the relevant documents for study participation, along with information regarding their rights and obligations, have been sent to the respective Educational Centers where teachers perform their professional duties.

In the first phase of sampling participation, 273 responses were received from teachers, below the 373 required for the study to be relevant. After the closing of the timing of this first phase of sampling participation, we have considered the possible existence of professional fatigue to participate in a directed external study, in contrast to the obligation to participate in public processes such as those carried out by the INE, IGE or the Ministry of Education itself *(Romehu Consultores, 2021)*.

Figure 1 shows the participation of teachers in the two sampling-participation phases carried out in the study "Analysis of the educational reality of Galicia" in 2021.
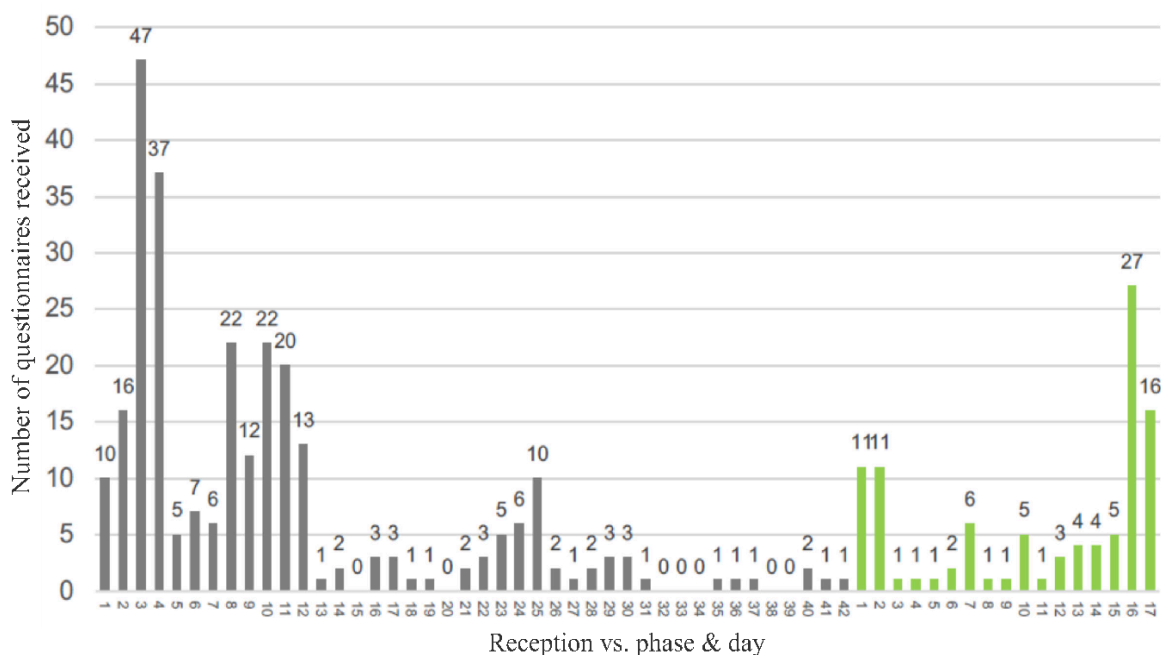
Note: The graph depicts questionnaires received in the first phase of the survey in gray and those received in the second phase in green. The values on the 'x' axis represent each day in relation to the respective phases. Source: Rial (2023).

Figure 1: Participation vs. date of sending the questionnaire and sampling-participation process

Figure 2 shows the cumulative participation of participating teachers in the two sampling-participation phases carried out in the study "Analysis of the educational reality of Galicia" in 2021, showing the timing of the receipt of the questionnaires (41 days for the first phase in which the first 273 were collected and 17 for the second phase, in which the remaining 100 were collected).

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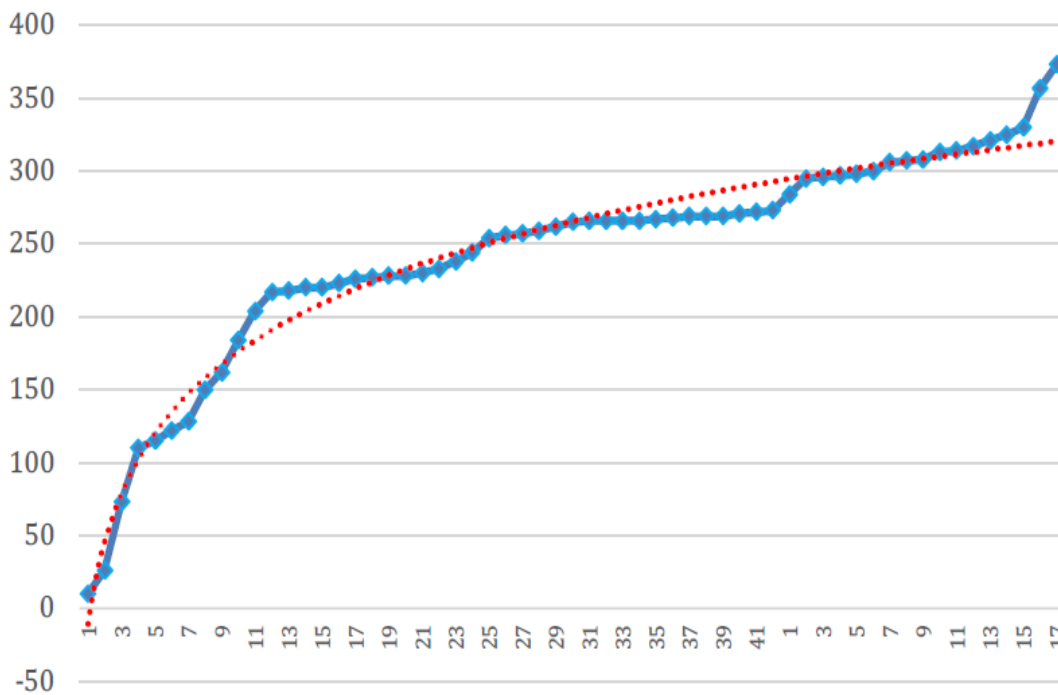
Note: The red dotted line represents the trend of data received vs. cumulative reception, while the blue solid line indicates the actual accumulation of surveys received. The 'y' axis represents the ordinal days of receipt for each of the sampling- participation phases/waves. Source: Rial (2023).

Figure 2: Participation percentage vs. questionnaire sending day number

1.4 Goals

As a general objective, we have set out to determine the existence of a gap between the exercise of teaching practice and the professional-personal situation of the group that carries out its functions as in the Autonomous Community of Galicia (Spain) that results in a fed up/fed up situation.

At a specific level, we have set ourselves the following objectives:

- Determine the existence of boredom based on participation in a non-institutional study about the educational reality in the Autonomous Community of Galicia (Spain).
- Design an indicator that determines the degree of fatigue/fed up of teachers.
- Propose its application in situations limited to statistical participation processes.

II. METHODOLOGY

"The employed methodology encompasses a mixed-methods statistical study, combining both quantitative and qualitative approaches. This approach facilitates the collection of comprehensive information regarding the educational landscape in the Autonomous Community of Galicia (Spain), specifically focusing on the events that transpired before, during, and after the confinement period spanning the months from March to June 2020.

2.1 Determination of the Studied Sample

The analysed sample has been extracted from the target population, made up of the group of teachers who carry out their professional practice in the Autonomous Community of Galicia (Spain) with complete independence of the affiliation of the Educational Centers and its typology, whether of a public, private or concerted nature and covering the educational stages between early childhood and secondary education respectively, as they are considered stages of mandatory observance by Spanish educational legislation.

Considering these conditions and the fact that the target population consists of 12,500 teachers during the 2019-2020 academic year, as reported

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in the educational inventory by the Department of Education of the Autonomous Government of Galicia *(Edu.Xunta.es, 2020)*, a simple random probabilistic sampling has been conducted using a custom-developed Java class *(Rial, 2023, pp. 360-365)*. With this data in mind, the analysis of teacher distribution is based on two variables: the typology of the assigned Educational Centers and the province where they fulfil their roles, as illustrated in Table 1.

Table 1: Distribution of schools by type of Educational Centers and province in which they are located

Educational Centers typology	Coruña, La	Lugo	Ourense	Pontevedra
Baccalaureate	121	40	35	98
Training Cycles	109	35	30	87
Secondary	185	67	55	175
Primary	324	119	112	314
Totals	739	261	232	674

Note: The Table shows the breakdown of Educational Centers in the Autonomous Community of Galicia, regardless of their ownership (public, private, subsidized).

Given that the target population has a finite cardinality, meaning it is quantifiable and numerically ordered, the sample determination was conducted in accordance with Equation 1.

$$n = \frac{k^2 * p * q * N}{e * (N-1) + k^2 pq} \qquad (1)$$

In it, n indicates the value of the sample that should be considered, k is the level of confidence that is initially adopted by the study (95%), e is the percentage of accepted sampling error, p is the estimated proportion of the population that will coincide with the value of q, i.e., p=q=0.5 and N the cardinality of the target population, which, as indicated, amounts to 12,500 teachers.

Based on the provided data, the calculation has been performed to determine a heterogeneity percentage of 50%, a margin of error of 5%, and a confidence level of 95%. This calculation results in 373 teachers as the target for the study.

Since the survey was directed proportionally to each of the four provinces comprising the Autonomous Community of Galicia, considering the teachers performing their duties in each, a distribution was established. This distribution aligns with the various typologies of Educational Centers that constitute the educational landscape at the provincial level, as illustrated in Table 2.

Table 2: Proportional distribution of surveys vs. Educational Centers and Province

Educational Centers typology	Coruña, La	Lugo	Ourense	Pontevedra	Totals
Baccalaureate	24	8	7	19	58
Training Cycles	21	7	6	17	51
Secondary	36	13	11	34	94
Primary	64	23	22	61	170
Totals	145	51	45	132	373

Note: The Table shows the distribution of the surveys proportionally concerning to the data reflected in Table 1.

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2.2 Reliability of Data through the Application of Alpha-Cronbach

The Alpha-Cronbach is a statistical test that seeks to determine how reliable the data collected through the information collection tool is by measuring the consistency of a sample of the population *(Oviedo and Camp-Arias, 2005)* with complete independence of the format: paper or electronic and the target population and extracted sample, but conditioned by the type of responses and the number of items in them *(Toma, 2021)*.

Therefore, adhering to the test definition and applying Equation 2.

$$\alpha = \frac{k}{k-1}\left(\frac{\sum_{I=1}^{K}\sigma^2_{y_I}}{\sigma^2_x}\right) \tag{2}$$

In this context, where K represents the number of items in the scale, $\sigma^2_{y_I}$ denotes the variance of item i-th, and $\sigma^2_{y_I}$ signifies the variance of the observed scores of the individuals, the outcome displayed in Table 3 has been achieved. This outcome ensures, as depicted in Table 4, a high degree of reliability. In this particular case, the data and its implications are considered highly reliable.

Table 3: Reliability statistics set of grouped variables

∝-Cronbach	Elements number
0,902	72

Table 4: Cronbach's Alpha Consistency/Reliability Intervals

Alfa-Cronbach				
Very Slow	Slow	Moderate	Good	High
[0-0.2]	(0.2-0.4]	(0.4-0.6]	(0.6-0.8]	(0.8-1.0]

Note: Given that the ∝-Cronbach value is 0.902, the degree of reliability of the study carried out is considered "high reliability" Source: Rial (2023)

2.3 Proposal for an Indicator of the Degree of Boredom

The design of the new indicator is determined by the following factors that directly intervene in it: sample size, number of sampling-participation processes carried out, and effective participants in each process.

Taking this into account, we define the indicator "Degree of boredom" as:

$$G_h(n) \rightarrow (M, P)$$

Where n is the cardinality of the sample, i.e., the number of data that make up the sample and (M , P) the cardinality of the different Sampling-Participation processes carried out, or what is the same, the set of responses made in each of the phases in which the reception of responses was undertaken. With the definition made, the indicator can be calculated based on Equation 3.

$$G_h = \sum_{i=1}^{k}\frac{participants_i}{sample - \sum_{i=1}^{i-1}participants_{i-1}} \tag{3}$$

A series of restrictions determined by:

Participation necessitates expanding the initially obtained sample size to encompass the entire target population, as the initially projected size has not been achieved.

The degree of participation, denoted as G_h, will establish a scale that correlates each interval with the corresponding statement regarding the teacher's situation, as delineated in Table 5.

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Table 5: Degree of participation determined by Equation 1

Interval	Grade of boredom	Scale
[0-0,3)	Extrem	
[0,3-0,5)	Excesive	
[0,5-0,7)	Very high	
[0,7-0,8)	High	
[0,8-0,9)	Half	
[0,9-1]	Low	

Note: This G_h→Interval link determines the degree of boredom of the study participants. Table 6 serves as an example, which shows four examples of the application of the calculation of the degree of boredom and the association with the corresponding interval that determines how fed up the participants are.

Table 6: Degree of participation determined by Equation 1

n	n1	n2	n3	n4	x1	x2	x3	x4	gh
373	373[1]				1				1,0000
373	273[2]	100			0,7319	1,0000			0,5774
373	200[3]	100	73	0	0,5362	0,5780	1,0000		0,4730
373	173[4]	90	70	40	0,4638	0,4500	0,6364	1,0000	0,3921

Note: In Case 1, where only one sample participation was required, the boredom index is 1.0000, indicating that participants in this scenario have a low level of boredom. Moving on to Case 2, involving two sampling-participation phases, the boredom index is 0.5774, signifying a very high level of boredom. In Case 3, entailing three participation sampling phases, the boredom index is 0.4730, classifying the boredom level as excessive. Finally, in Case 4, the boredom index is 0.3921, once again indicating excessive boredom, as observed in the preceding case.

III. CONCLUSIONS

The school confinement due to COVID-19 has brought a series of consequences on the school community, among which is the absence of presence in the transmission of teaching-learning processes, being assumed by a new educational model of online teaching, never before applied in certain stages.

This has required teachers to exert extra effort in fulfilling their responsibilities to ensure that students have a normal educational experience during this period. Consequently, the time that teachers allocate to their personal lives has been diminished, compromising a more balanced allocation between personal and professional commitments.

Educational changes, reforms, and decisions within each temporal context studied suggest a

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Table 5: Degree of participation determined by Equation 1

Interval	Grade of boredom	Scale
[0-0,3)	Extrem	
[0,3-0,5)	Excesive	
[0,5-0,7)	Very high	
[0,7-0,8)	High	
[0,8-0,9)	Half	
[0,9-1]	Low	

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Gendered Vulnerability to Environmental Stressors in Slum Settings: Evidence from Douala, Cameroon

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ABSTRACT

While studies on the vulnerability to slum environments have received significant attention, albeit limited emphasis on its gender perspective. Put succinctly, recent evidence on the variations in the level of vulnerability especially for women and children in slum environments are lacking. To contribute to address this, this paper investigates the vulnerability of the population in the Douala IV slums of Cameroon, to environmental stressors. The characterization of environmental stressors in Douala reveals a complex interplay of challenges that impact the city's urban environment. Key stressors include air and water pollution, deforestation, inadequate waste management, poor road network infrastructure, inadequate healthcare facility and services, inadequate social and economic infrastructure and services, and climate-related issues..

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ABSTRACT

While studies on the vulnerability to slum environments have received significant attention, albeit limited emphasis on its gender perspective. Put succinctly, recent evidence on the variations in the level of vulnerability especially for women and children in slum environments are lacking. To contribute to address this, this paper investigates the vulnerability of the population in the Douala IV slums of Cameroon, to environmental stressors. The characterization of environmental stressors in Douala reveals a complex interplay of challenges that impact the city's urban environment. Key stressors include air and water pollution, deforestation, inadequate waste management, poor road network infrastructure, inadequate healthcare facility and services, inadequate social and economic infrastructure and services, and climate-related issues. These stressors are multifaceted, with implications for both human well-being and ecosystem health and the research Analyses variations in the level of vulnerability (exposure, sensitivity, adaptive capacity) to environmental stressors in Douala. A systematic sampling of 400 households was conducted in 8 neighborhoods in Douala. This was complemented by 15 key informant interviews and 15 focus group discussions Utilizing a double-layer sampling technique, the research focused on households in different neighborhoods, employing a systematic random sampling method. Questionnaires were administered, and the data were analyzed using SPSS Version 20 software. Results indicate that the women and children faces moderate exposure to floods, with various frequencies reported. Additionally, the study reveals high exposure to other environmental stressors. Sensitivity to floods and water contamination is notable, with a significant portion of the population perceiving moderate to high sensitivity. Health vulnerability is exacerbated by challenges such as waste disposal in streams, standing water, and limited access to healthcare facilities. The findings underscore the interconnectedness of environmental factors and health vulnerability in slum environments. The study equally provides new insights on the relative vulnerability to environmental stressors from a gendered perspective.

Keywords: children environmental stressors vulnerability women.

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I. INTRODUCTION

Urban informal settlements have increased dramatically over the last four decades throughout major cities in developing countries. Industrialization has increased economic opportunities and social facility options continue to increase rural-urban migration notwithstanding the challenging living conditions involved. These settlements are characterized by substandard housing conditions and a lack of essential services, because the governments of cities in developing countries do not have the necessary financial resources to provide better settlements (UN-Habitat, 2014), with replicating health effects. The 2016 World Cities Report, indicated that the population of slum dwellers in developing countries increased from 689 million

to 880 million in 2014. To this effect, a quarter of the world's total urban population reside in slums, making them vulnerable to environmental and man-made hazards.

Slum hazards can threaten their lives, livelihoods, property, infrastructure, economic productivity, natural resources, and regional prosperity (Huq *et al.,* 1999). Responses adopted to handle the risks can, in turn, have long-term implications for the sustainability of their communities. Both govern mental and non-governmental organizations have a key role in managing vulnerability and responding to hazards whether natural or human induced. Historically, public policy related to hazard management has reflected early hazard research practice. Its focus was on mitigation, preparedness, response, and recovery (Jones and Preston, 2011).

In the rapidly urbanizing context of Douala IV, slum environments have become focal points for understanding the intricate vulnerabilities faced by women and children due to environmental stressors. The burgeoning population and inadequate urban planning in these areas contribute to substandard living conditions, exposing residents, particularly women and children, to a myriad of environmental challenges. Overcrowded and poorly constructed housing, limited access to clean water, and insufficient sanitation facilities heighten the risks associated with floods, waterborne diseases, and other environmental stressors (UN-Habitat, 2003). The socio-economic disparities and lack of infrastructure exacerbate the vulnerability of these marginalized populations (Smith *et al.,* 2010). It is imperative to delve into the specific dynamics of vulnerability in the Douala IV slums to inform targeted interventions and policies that address the unique environmental stressors faced by women and children in these urban settings.

Exposure of a system to hazards is assessed in terms of the frequency, magnitude and duration of exposure. Hazards include any threats to the system, both sudden shocks (floods) and slow increases in stress on the system (IPCC, 2007). Sensitivity of a system to these hazards is determined by both the environmental and

human characteristics that contribute to how a system responds to exposure, while resilience of a system refers to future actions that can improve its ability to cope with outside hazards. It is the capacity of systems, communities, households or individuals to prevent, mitigate or cope with risk and recover from shocks (IPCC, 2007). Slum environments offer difficult living conditions for its inhabitants. Men, women and children in slum environments face different challenges and opportunities living in such environments. This has created more problems. Women and children are considered more vulnerable based on their inability to face and withstand challenges. This has exposed them environmental and health challenges especially in slum environment like that of Bonaberi in Douala. The objective of this article is to investigate and analyze the gendered vulnerability to environmental stressors in the Douala IV slums of Cameroon. The study aims to fill a gap in existing research by specifically examining the variations in vulnerability levels, considering exposure, sensitivity, and adaptive capacity, with a focus on women and children. The research seeks to contribute to a better understanding of the complex interplay of environmental challenges in urban settings, emphasizing the implications for both human well-being and ecosystem health. The research is significant in its exploration of various environmental stressors, including air and water pollution, deforestation, inadequate waste management, and climate-related issues. By systematically sampling households and conducting key informant interviews and focus group discussions, the study provides valuable insights into the interconnectedness of environmental factors and health vulnerability in slum settings. The findings contribute to the broader discourse on urban environmental challenges and highlight the need for gender-specific considerations in vulnerability assessments.

II. STUDY AREA AND METHODOLOGY

Located in the inter-tropical zone in the Gulf of Guinea in the Wouri estuary between latitude 4˚3' and 4˚7' North and longitude 9˚42' and 9˚48' East, Douala IV has a tropical humid climate. The

annual rainfall is more than 4000 mm with temperatures ranging between 24˚C and 27˚C hence, characterized by wet and dry seasons. Created by Decree No. 093-321 of 25th November 1993, Douala IV has an estimated surface area of 21,000 hectares with a population density of 145 persons/km2 (Douala city council 2019). It is the second largest Municipality after Douala III, bounded by the Nsape Drainage Basin to the North, Douala II and the Wouri River to the West and Douala III to the East and South (Figure 1).
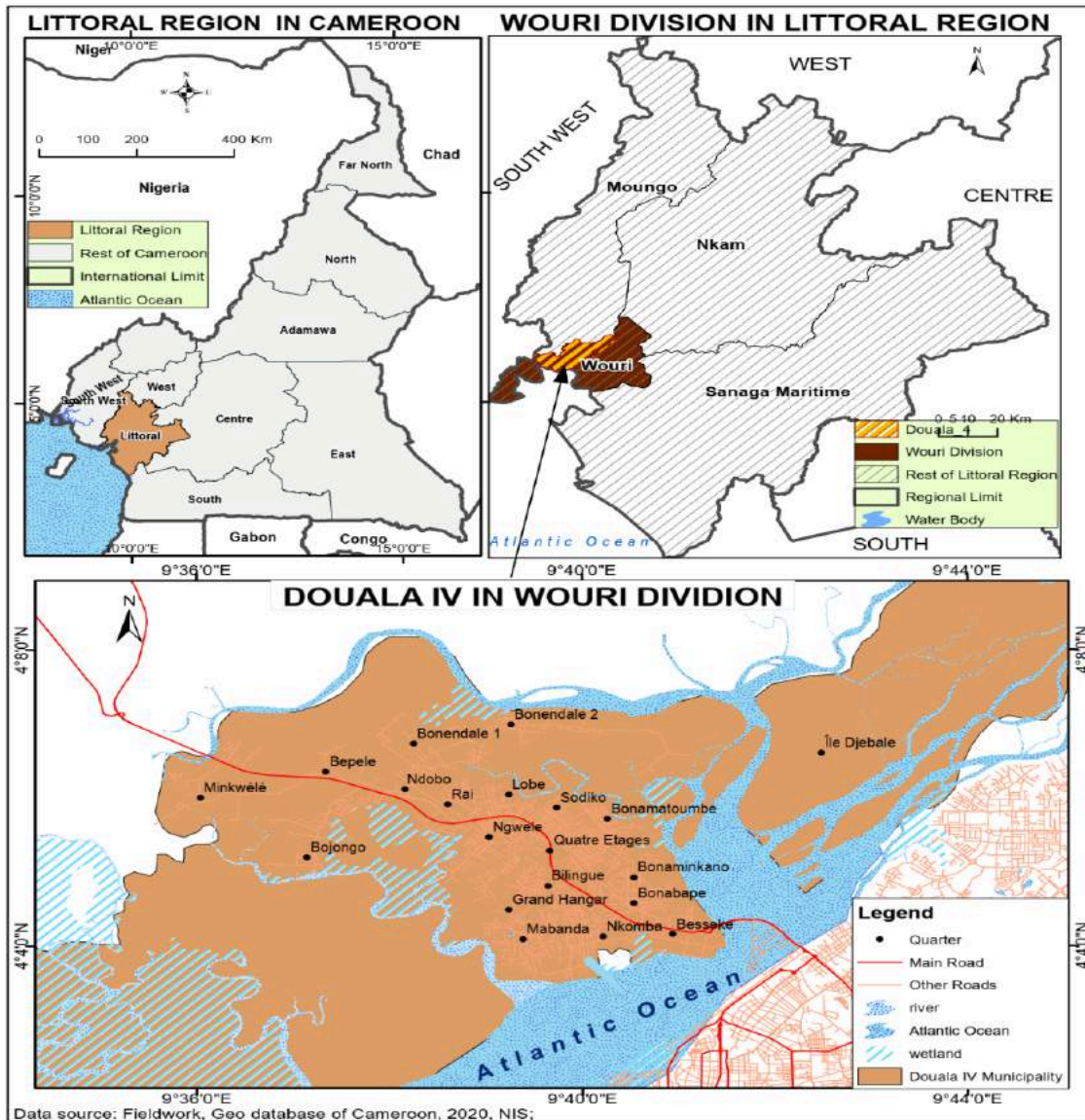
Figure 1: Location of Bonaberi

Douala IV features a tropical monsoon climate (Koppen climate classification), with relatively consistent temperatures throughout the course of the year. Though the city experiences colder temperatures in the months of July and August, the rest of the year is characterized by warm and humid conditions with an average annual temperature of 27.0°C (80.6°F) and an average humidity of 85. Douala IV records heavy rainfall during the course of the year, with an average of about 3000 millimeters per year. This area experiences its maximum dryness in the month of December when almost all punches and surface detentions are drying off. Douala IV climate favors floods and the spread of diseases due to high rainfall especially during the months of July and August which is a crucial moment for those who live in slum environment.

III. DATA COLLECTION AND ANALYSIS

The study employed a double-layered sampling approach to identify the target population, focusing on households across various neighborhoods in Bonaberi The study implemented a double-layered sampling strategy to ensure a representative and diverse portrayal of the target population in Bonaberi. The research design included the division of the study area into four quadrants (North, South, East, and West), each containing three neighborhoods. Within each quadrant, two neighborhoods were randomly selected for inclusion in the study. To determine the sample population, the study took into account the total number of households in the Douala IV municipality and the average household size. According to statistics from the council and the Ministry of Housing and Urban Development, the average household size ranged from 5 to 12 persons per household. Selecting eight persons per household as the median value, the study then divided the total population of the study area by the number of neighborhoods, resulting in an average of 25,000 persons per quarter. Considering the eight neighborhoods under investigation, the study worked with 25,000 inhabitants per quarter, multiplied by eight neighborhoods, estimating a population of approximately 200,000 inhabitants. Further division of the total population by the average household size of 8 yielded 25,000 households in the eight observed neighborhoods. A 5% sample of these households was then taken, resulting in a total of 1,250 households across the eight different neighborhoods under observation (refer to Table 1).

Table 1: Distribution of sampled population in slum areas

Quadrants	Neighbourhoods	Population	%	Questionnaires administered	%
1	Ngwele	55373	13.54	50	4.5
	Bojongo	41972	10.26	242	21.7
2	Mambanda	92849	22.70	302	27.0
	Grand Hangar	35455	8.67	89	8.0
3	Bonandale	64441	15.76	21	1.9
	Ndobo	33481	8.19	315	28.3
4	Quatre Etages	48397	11.83	40	3.6
	Sodiko	37018	9.05	56	5.0
Total		408986	100	1115	100

Source: Researcher's Construct, August 2023

Upon systematically selecting the eight neighborhoods within the slum area for the study, houses were methodically labeled using assigned code numbers for households. The study employed a comprehensive data collection approach involving trained data collectors who conducted face-to-face interviews using structured questionnaires for households, women, men, and stakeholders in eight selected slum communities in Douala, Cameroon. The 1,250 questionnaires, representing 5% of total households, focused on slum characteristics, causes of slum growth, vulnerability of women and children, and health challenges in the slum environment. The Likert scale-based questionnaire comprised four sections addressing population demographics, slum characteristics, vulnerability assessment, and health challenges. Additionally, key informant interviews were conducted with administrative stakeholders, community representatives, and service providers. Focus group discussions were held with

men and women separately, exploring various aspects of health challenges and opportunities in slum life. The study applied a double-layered sampling method to ensure representativeness. Interviews were conducted in multiple languages, and participants were given the flexibility to respond in their preferred language. The research demonstrated a meticulous consideration of ethical guidelines, including informed consent, and thoughtful strategies to encourage participation, such as providing a safe space for discussions. The study's rigorous methodology, involving quantitative and qualitative data collection from various perspectives, enhances the credibility and depth of its findings, providing a robust foundation for understanding environmental stressors and vulnerabilities in the studied slum communities. The collected questionnaires underwent analysis using the Statistical Package for Social Sciences (SPSS) Version 20 software. Following this, frequencies were generated and exported to Microsoft Excel 16, where tables were created. The assessment of exposure, sensitivity, and adaptive capacity employed a five-point Likert scale (ranging from least to extreme). This

paper delved into an examination of the health conditions of women and children in slum environments, emphasizing the extent of their vulnerability. The degree of vulnerability was gauged by considering exposure, sensitivity, adaptive capacity to the slum environment, and access to health services.

IV. RESULTS

4.1 Exposure to Floods

Exposure to floods not only leads to heightened anxiety but also results in the destruction of property, contamination of water sources, and the proliferation of water-borne diseases. Certain areas in the City of Douala, such as Mambanda, consistently grapple with flooding throughout the year due to their location below sea level. The prevalence of such persistent flooding is observed in 14% of the cases. In instances of moderate flooding, the frequencies are distributed as follows: 36.7% experiencing it once a year, 32% twice a year, 35.9% thrice a year, and 31.9% facing flooding throughout the entire year (refer to Table 2)

Table 2: Exposure to floods

Flood frequency	Least		Low		Moderate		High		Extreme	
	F	%	F	%	F	%	F	%	F	%
Once a year	190	17.0	308	27.6	409	36.7	179	16.1	29	2.6
Twice a year	157	14.1	396	35.5	357	32.0	173	15.5	32	2.9
Thrice a year	207	18.6	313	28.1	400	35.9	144	12.9	51	4.6
All year round	196	17.6	235	21.1	356	31.9	172	15.4	156	14.0
Average		16.8		28.1		34.1		15.0		6.0

Source: Fieldwork, November 2020

The prevailing perception of flooding in Bonaberi is characterized as moderate, holding a value of 0.34, followed by low (0.29), least (0.18), high (0.14), and extreme (0.05). The study delved into the impact of floods on the health of women and children, exploring the potential health challenges they may face due to flooding. Results indicated varying beliefs within the communities, with

16.8% of the sampled population perceiving floods as least likely to expose them to health issues. Additionally, 28.1% believed the occurrence of floods was low, while 34.1% observed a moderate distribution throughout the rainy season. Fifteen percent (15%) of participants expressed the view that floods were higher in the area during the year, and 6% considered the situation extreme.

The nature and intensity of flooding are influenced by the physical and topographical features of the environment, as well as the built structures within it. The impacts of floods can be both direct and indirect, posing risks of physical and non-physical harm to the human population. For instance, when floods come into contact with water bodies utilized by people, they contaminate the water with waste transported from nearby disposal sites, affecting the water sources crucial for human reliance.

4.2 Exposure to Other Environmental Stressors

Other environmental stressors that the population are exposed to are: fires (mostly from electric circuits and dry season burning of waste), land subsidence, outbreak of epidemics like cholera, wind storms, excessive heat and heavy rainfall (Table 3).

Table 3: Exposure to other environmental stresses

Environmental stresses	Least		Low		Moderate		High		Extreme	
	F	%	F	%	F	%	F	%	F	%
Fire	199	17.8	263	23.6	249	22.3	308	27.6	96	8.6
Land subsidence	214	19.2	235	21.1	334	30.0	233	20.9	99	8.9
Epidemics	175	15.7	259	23.2	351	31.5	233	20.9	97	8.7
Wind storms	167	15.0	195	17.5	424	38.0	232	20.8	97	8.7
Excessive heat	177	15.9	168	15.1	199	17.8	444	39.8	127	11.4
Heavy rainfall	162	14.5	183	16.4	207	18.6	432	38.7	131	11.7
Average		16.4		19.5		26.4		28.1		9.7

Source: Fieldwork, November 2023

The data reveals that the community experiences extreme values of 11.4% for excessive heat and 11.7% for heavy rainfall. Fires are generally prevalent, accounting for 27.6% of incidents. Land subsidence is considered moderately problematic at 30%, while moderate windstorms are observed at 31.5%. Furthermore, excessive heat is perceived as high by 39.8% of the population, and heavy rainfall is considered high by 38.7%. Overall, the community perceives a high level of exposure to various environmental stressors, with a value of 0.28. This is followed by a perception of moderate exposure at 0.26, low exposure at 0.19, least exposure at 0.16, and extreme exposure at 0.10.

4.3 Population Sensitivity in Slum Environments

Flooding is a global phenomenon with varying impacts across continents, contingent upon the preparedness of populations to manage such incidents. Consequently, every nation should establish a proactive and predictable emergency relief plan for floods. The severity of flood effects differs from one continent to another, reflecting the diverse strategies implemented by countries to mitigate these impacts. For example, what might be deemed catastrophic flooding in one continent may not hold the same gravity in another due to differing levels of preparedness. In the case of Bonaberi, the adverse effects of floods extend beyond the general population, significantly impacting women and children, who are particularly vulnerable.

Effects of floods	Least		Low		Moderate		High		Extreme	
	F	%	F	%	F	%	F	%	F	%
Loss of household property	192	17.2	165	14.8	335	30.0	402	36.1	21	1.9
Damage of buildings	108	9.7	210	18.8	364	32.6	397	35.6	36	3.2
Loss of livestock	204	18.3	252	22.6	274	24.6	362	32.5	23	2.1
Loss of human life	175	15.7	260	23.3	303	27.2	353	31.7	24	2.2
In accessibility to work & school	124	11.1	194	17.4	517	46.4	249	22.3	31	2.8
Average		14.4		19.4		32.2		31.6		2.4

Source: Fieldwork, November 2023

The sensitivity of women and children to the consequences of floods was notably evident, as evidenced by the fact that 32.2% of the population held a moderate perception of the impact of floods on the loss of household property, damage to buildings, livestock, and the loss of human life, along with disruptions to work and school accessibility during the rainy season. This indicates that a significant majority of households in this community have experienced one or more adverse consequences of floods. For this group, the effects of floods were perceived as neither excessively high nor low in the municipality, as recurring annual floods have become a norm over the past years, sometimes extending throughout the entire rainy season. In contrast, 31.6% of the population displayed a heightened sensitivity to the frequent occurrence of floods and their substantial effects on household property, damage to buildings, livestock, human lives, and the overall disruption of work and school during the rainy season. This group believed that floods exerted a profound impact on the community, lamenting significant losses in material possessions, human lives, income, social status, work productivity, and overall health. Another segment of the population adopted a different perspective, asserting that the effects of floods were low. In this context, 19.4% of the population acknowledged the impact of floods on household property, building structures, livestock, human lives, and the accessibility to work and school during the rainy season, but viewed these effects as relatively minimal.

There is a plausible likelihood that affluent and middle-income households, capable of affording quality housing, vehicles, and potentially securing a reliable water source for domestic activities, experience minimal impacts from floods compared to those with lower incomes. A segment comprising 14.4% of the population perceived the effects of floods as least significant concerning household property, building damage, loss of livestock, human lives, and disruptions to work and school accessibility. Notably, well-constructed homes in the area often disregard town planning principles, acting as impediments to stormwater and overland flow. The construction of substantial embankments and fences to shield homes from floodwaters contributes to a reduction in river channel capacity and alters drainage patterns, disproportionately affecting those who are less privileged. Consequently, the effects of floods are minimized and less acutely felt in these areas.

Contrastingly, 2.4% of the population held the view that the effects of floods were extreme concerning household property, building damage, livestock loss, human lives, and the hindrance of work and school accessibility. This minority

perspective likely reflects the harsh reality faced by certain households, emphasizing the urgency of targeted interventions to address the disproportionate impact of floods on vulnerable communities.

4.4 Sensitivity to Water Contamination

The study delved into the sensitivity of the population regarding water sources and their implications for healthcare. The aim was to gauge the community's awareness and understanding of the quality of water utilized for domestic tasks and its potential impact on health. The findings indicated that a significant portion, comprising 34.6% of the population, expressed sensitivity to the prevalent issue of high-water contamination in the Bonaberi area. This heightened awareness extended to concerns about waterborne diseases and pollution, recognizing these as significant threats to the health of women and children in the locality. This indicates a substantial level of recognition among the community regarding the critical linkage between water quality and the well-being of vulnerable demographics, underscoring the need for targeted interventions in water management and health education programs.

Table 5: Sensitivity to water sources

Water sources	Least		Low		Moderate		High		Extreme	
	F	%	F	%	F	%	F	%	F	%
Water contamination	213	19.1	210	18.8	281	25.2	370	33.2	41	3.7
Water borne diseases	183	16.4	251	22.5	259	23.2	381	34.2	41	3.7
Water pollution	187	16.8	208	18.7	256	23.0	406	36.4	58	5.2
Average		17.4		20.0		23.8		34.6		4.2

Source: Fieldwork, November 2023

The prevailing sentiment among the majority of the population emphasized that prolonged and frequent hospital visits were attributed to the poor quality of water used for domestic tasks and as a source for drinking within the area. The respondents asserted that many, if not all, household members experienced hospitalization, with some instances leading to fatalities due to water-related challenges such as contamination, pollution, and waterborne diseases like cholera, typhoid, and scabies, among others. Those holding a moderate viewpoint on the impacts of water contamination, waterborne diseases, and pollution, constituting 23.8% of the population, indicated that some of their household members had fallen victim to one or more of these challenges. Additionally, 20% of the population expressed a low perception of the existence of water contamination, waterborne diseases, and water pollution in their residential area, considering it a minimal concern for their health or that of their household in the Bonaberi slum environment. A segment comprising 17.4% of research participants viewed sensitivity to water source contamination, pollution, and waterborne diseases as a lesser concern for their families, while only 4.2% perceived water contamination, pollution, and waterborne diseases to be at an extreme level within the municipality. This underscores the urgent need for targeted health education initiatives and interventions aimed at enhancing water quality in the Bonaberi community, given the varied perceptions and experiences regarding water-related health challenges.

4.5 Health Vulnerability

Field observations conducted in Bonaberi underscored the intricate interplay between the physical and social characteristics, demographic dynamics, and the health landscape within slum environments, collectively influencing the

vulnerability of the area. Accordingly, any fluctuations in the social and physical structures across Bonaberi's slums may lead to corresponding variations in the closely intertwined relationship between vulnerability and slum conditions. The study identified five primary waste disposal methods prevalent in the region, including the disposal of waste in streams and springs, along road junctions and major streets, in garbage bins, in the surrounding bushes, and in gutters or water channels. These diverse waste disposal practices contribute significantly to the environmental challenges faced by the community, necessitating targeted interventions for sustainable waste management strategies and improved environmental health outcomes.

Table 6: Household waste disposal

Waste disposal	Least		Low		Moderate		High		Extreme	
	F	%	F	%	F	%	F	%	F	%
In a stream	189	17.0	233	20.9	379	34.0	260	23.3	54	4.8
By roadside	151	13.5	245	22.0	308	27.6	365	32.7	46	4.1
In garbage cans	100	9.0	190	17.0	403	36.1	378	33.9	44	3.9
In a bush	141	12.6	200	17.9	347	31.1	386	34.6	41	3.7
In gutters	115	10.3	186	16.7	325	29.1	422	37.8	67	6.0
Average		12.5		18.9		31.6		32.5		4.5

Source: Fieldwork, November 2023

The susceptibility of women and children to environmentally related diseases and infections is profoundly influenced by the prevailing waste disposal practices within the community and the perceptions held by its members regarding the consequences of such practices. According to the research participants, 32.5% affirmed the disposal of waste in streams and springs, while 31.6% perceived it to be of moderate occurrence. Additionally, 18.9% of the population indicated a low prevalence of waste disposal in these areas, with 12.5% considering it to be least common. A smaller proportion, 4.5%, acknowledged an extreme level of waste disposal in streams and springs within these communities. This highlights the urgent need for targeted interventions to address and rectify improper waste disposal practices, mitigating the associated health risks and fostering a healthier living environment for vulnerable populations.

4.6 Vulnerability to Standing Water

In the slum environments of Bonaberi, heavy storms have resulted in pervasive water accumulation around homes and streets, a condition that often persists until the dry season when temperatures rise. The health implications of this standing water cannot be underestimated. A significant portion of the research participants, 40.9%, expressed that the presence of standing water around their homes was extreme. Additionally, 21.1% perceived the frequency of standing water as low, while 16.5% reported a higher frequency. Another 15.9% believed the frequency was least, and 5.6% considered it to be moderate. This underscores the urgent need for targeted interventions to address the impact of standing water on the health of inhabitants, emphasizing the importance of comprehensive solutions to mitigate these environmental health risks in Bonaberi's slum areas.

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Table 7: Vulnerability enhancement by standing water

Standing water	Least		Low		Moderate		High		Extreme	
	F	%	F	%	F	%	F	%	F	%
Always	209	18.7	173	15.5	58	5.2	276	24.8	399	35.8
Frequently	112	10.0	334	30.0	41	3.7	172	15.4	456	40.9
Occasionally	185	16.6	223	20.0	39	3.5	158	14.2	510	45.7
Very rare	163	14.6	276	24.8	50	4.5	169	15.2	457	41.0
Not at all	217	19.5	173	15.5	124	11.1	143	12.8	458	41.1
Average		15.9		21.1		5.6		16.5		40.9

Source: Fieldwork, November 2023

In poorly drained areas like Bonaberi, storm runoffs, particularly during floods, combine with sewage from overflowing latrines and sewer systems, leading to pollution and a myriad of health challenges associated with an increased risk of waterborne diseases. The runoff, along with water infiltration from surfaces laden with substantial waste deposits, results in contaminated groundwater, a critical resource for various domestic activities. If this contaminated water is directly consumed from wells, it poses a potential risk of gastrointestinal diseases. The presence of open drains carrying sludge water becomes a source of infection, especially for children who play in them. Flooded septic tanks and leach pits serve as breeding grounds for mosquitoes, contributing to the spread of diseases such as malaria. This complex interplay of environmental factors underscores the urgent need for comprehensive strategies to address the diverse health risks emanating from the environmental conditions in Bonaberi's poorly drained areas.

Table 8: Diseases associated with water

Characteristics	Classification	Type
Water – borne: water acts as a passive vehicle for infectious agent	Bacterial	Salmonella (typhoid) Enterobacte Ndobo (E. coli) Campylobacter, Choleral Leptospirosi
	Viral	Hepatitis A, Poliomyelitis Rotavir Enteroviruses
	Parasitic	Amoebiasis, Giardasis, Inte protozoa, Balantidium coli
	Enteric	E.g. a proportion of diarrheas gastroenteritis
Water – Washed: infections that decrease as result of increasing the volume water available	Skin	Scabies, Ringworm, ulcers, Pyodermit
	Louse-Borne	Typhus and related fevers
	Treponematoses	Yaws, Bejel, Pinta
	Eye & Ear	Otitis, Conjunctivitis Trachoma

Water-Based: A necessary part of the life cycle of the infective agent takes place in an aquatic organism	Crustaceans	Guinea worm, paragonimiasis
	Fish	Diphyllobothriasis Anisakasis, Flukes
	Shellfish	Flukes, schistosomiasis
Water-Related: infections spread by insects that breed in water or bite near it	Mosquito	Malaria, Filariasis, Yellow fever, De: hemorrhagic fever
	Tsetse flies	Trypanosomiasis(Sleeping sickness)
	Blackflies	Onchocerciasis

Source: (Prost, 1993)

4.7 Vulnerability of Healthcare Delivery

The data analysis uncovered that 46.1% of the population perceived their vulnerability to the identified healthcare facilities as moderate. This suggests that they faced challenges such as encountering difficulties in accessing a doctor promptly, enduring long waiting times in health facilities, and experiencing inadequacies in the availability of necessary equipment when seeking assistance from these facilities. Another segment of the population, comprising 20.2%, acknowledged a low level of vulnerability to healthcare delivery. In contrast, 17% of the research participants expressed a belief that their vulnerability to healthcare delivery within the various facilities was high. This variation in perceptions highlights the multifaceted nature of challenges faced by the community in accessing and receiving adequate healthcare, emphasizing the need for targeted interventions to improve the overall healthcare delivery system.

Table 9: Vulnerability enhancement in healthcare delivery

Health care	Least		Low		Moderate		High		Extreme	
	F	%	F	%	F	%	F	%	F	%
Health facility with doctor	242	21.7	200	17.9	472	42.3	182	16.3	19	1.7
Health centres	161	14.4	276	24.8	406	36.4	237	21.3	35	3.1
Clinic	165	14.8	266	23.9	535	48.0	127	11.4	22	2.0
Dispensary	121	10.9	252	22.6	591	53.0	108	9.7	43	3.9
Pharmacies	97	8.7	184	16.5	557	50.0	231	20.7	46	4.1
Medicine stores	110	9.9	172	15.4	520	46.6	254	22.8	59	5.3
Average		13.4		20.2		46.1		17.0		3.3

Source: Fieldwork, November 2023

An additional 13% of the population held the perception that vulnerability to healthcare delivery was minimal in the Bonaberi slum environment, while 3.3% regarded it as extreme in the local context. The vulnerability of women and children to healthcare delivery in Bonaberi arises from the fact that there are more private and mission health facilities than public infrastructures, and the costs and quality of healthcare in these facilities vary significantly. The patient-healthcare provider relationship appears to be consistent across both private and public health facilities. The study further delved into the difference in the approximate distance an

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individual could cover to reach the nearest pharmacy, medicalized hospital, clinic, health center, and medicine store in both the enclaved communities and urban areas of Bonaberi (see Table 10). This exploration sheds light on the disparities in healthcare accessibility within the slum environment, emphasizing the need for targeted improvements to ensure equitable healthcare delivery.

Table 10: Differences in distances covered by households to the nearest facility between Rural and urban environments of Bonaberi

Quadrants	DTN medicalized hospital in km		DTN pharmacy in km		DTN clinic in km		DTN health center in km		DTN medicine store in km	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Quadrants1	1	6+	1.5	4-5	1	4-5	3	6+	0.5	1.5
Quadrants2	0.5	6+	3	6+	2	6+	2-3	6+	0.25	1
Quadrants3	1	6+	2	6+	2	5	2	6+	0.25	1
Quadrant 4	1	5	1	6+	1	6+	2	6+	1	1.5

DTN: Distance to Nearest. Source: Fieldwork, November 2023

Access to health centers and clinics in the rural areas of Bonaberi poses a significant challenge for community members, directly influencing household vulnerability. Limited pharmacies and hospitals with qualified doctors in these communities compel households to seek medical attention in clinics and medicine stores staffed with insufficiently qualified personnel. Equipped and standardized healthcare facilities are predominantly situated in the urban areas of Bonaberi, creating difficulties for the urban poor residing farther from these areas to readily access and afford healthcare. The study delves into various aspects of health vulnerability, including the presence of mosquito nets in homes, the source of water for domestic chores and cooking, the duration women and children spend at home in slum environments, and incidents of women and children falling victim to rape. Survey results indicate that 74.8% of the population affirmed having mosquito nets in all rooms of their homes, 21.8% expressed neutrality, and 6.4% disagreed with having mosquito nets in all rooms. This exploration sheds light on the multifaceted challenges faced by the community in terms of health access and vulnerability, emphasizing the need for targeted interventions to address these disparities.

Table 11: Other determinants of health vulnerability

Determinants	SA		A		N		SD		D	
	F	%	F	%	F	%	F	%	F	%
Mosquito nets in all rooms	393	35.2	441	39.6	210	18.8	33	3.0	38	3.4
Streams water for domestic cleaning	225	20.2	466	41.8	277	24.8	73	6.5	74	6.6
Well water for cooking	247	22.2	470	42.2	229	20.5	103	9.2	66	5.9
Women and children spend more time at home	303	27.2	426	38.2	217	19.5	56	5.0	113	10.1
Women and girls as rape victims	357	32.0	366	32.8	212	19.0	70	6.3	110	9.9

Source: Fieldwork, November 2023

The survey results illustrate that 62% of the population acknowledged using water from streams and springs for domestic cleaning in their homes, with 24.8% expressing neutrality and 13.1% disagreeing with this practice. However, it's crucial to note that water from streams and wells contains runoff from industries and sewage, carrying harmful substances unsuitable for human health. As women and children utilize this water, the chemicals present contribute to an increased vulnerability to health challenges, exposing them to severe diseases such as scabies and respiratory disorders. The number of hours spent within slum environments also plays a significant role in residents' vulnerability. The research found that 65.4% of the population agreed that women and children spend a substantial amount of time at home, compared to men and youths. Meanwhile, 19.5% of the population remained neutral, and 15.1% disagreed with this assertion. The prolonged exposure of women and children to slum environments increases their vulnerability to diseases, as they engage in household activities and child-rearing, while men frequently venture outside for work. Children, in particular, study and play within the same environments, emphasizing why women and children are more vulnerable than men. Additionally, the text touches on the grave issue of rape, highlighting its prevalence in Cameroon and the severe psychosocial and health effects it inflicts on victims. Rape exposes women and girls to risks such as sexually transmitted infections, unwanted pregnancies, emotional trauma, fear, guilt, and depression. The vulnerability of slum inhabitants' hinges on various factors, including their proximity to factories and other facilities. This comprehensive examination underscores the multifaceted nature of health vulnerability in slum environments, emphasizing the need for targeted interventions to address these complex challenges.

Table 12: Approximate distances to facilities

Facility	0-1 km		2-3 km		4-5 km		5 km+	
	F	%	F	%	F	%	F	%
Distance to the nearest factory	410	36.8	449	40.3	74	6.6	182	16.3
Distance to the nearest waste bin	411	36.9	414	37.1	189	17.0	101	9.1
Distance to the nearest stream	350	31.4	362	32.5	242	21.7	161	14.4
Distance to the nearest hospital	112	10.0	235	21.1	372	33.4	396	35.5
Distance to the nearest school	185	16.6	381	34.2	498	44.7	51	4.6
	<50m		51-100m		100-200m		>200m	
Distance to the nearest public tap	216	19.4	392	35.2	398	35.7	109	9.8
	<5 m		5-6 m		6-9 m		10 m+	
Distance to external toilet	611	54.8	259	23.2	169	15.2	76	6.8

Source: Fieldwork, November 2023

40.3% of the population hold that the distance from their homes to the nearest factory is estimated at 2-3km, while those with distance between 0-1km made up 36.8% of the population, while 17% of the research participants estimated the distance between their home and the nearest factor of industry to be between 4-5km. Another 16.3% of the research participants estimated their actual distance from their homes to the nearest factory to be beyond 5km. The relationship between environment and health is of extreme relevance in Public Health.

V.   DISCUSSION

As per the World Health Organization (WHO, 2020), 23% of global deaths are attributed to

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environmental factors, and numerous diseases could be preventable in healthier environments. Specifically, the European Environmental Agency reports that poor air quality results in 6.5 million premature deaths globally, with 620,000 occurring in the WHO European Region. The agency underscores that noise and air pollution persistently exert a severe impact on population health, with human activities, particularly in key sectors such as industry, energy, transport, and agriculture, contributing significantly to environmental stressors. The increasing recognition of health implications arising from alterations in environmental conditions due to anthropogenic activities, including industrial expansion in proximity to urban areas, atmospheric pollution, and climate change, plays a pivotal role in shaping perceptions and acceptance of risks associated with environmental challenges.

The examination of the estimated distance between homes and waste disposal sites contributes to understanding the waste disposal attitudes and effects of proximity on the vulnerability of women and children in Bonaberi's slum environments. The survey revealed that 37.1% of the population lives 2-3km away from waste disposal sites or bins, while 36.9% live within 0-1km, indicating closer proximity to dump sites. Additionally, 17% estimated the distance between their homes and waste bins to be 4-5km, and 9.1% live more than 5km away from waste disposal sites. Despite apparent distances, the impact of waste in the Bonaberi slum environment is widespread due to common flooding. Many households, living further from waste bins, experience waste scattered on the surface, transported by wind and water to nearby streams and springs, affecting the entire community. In Bonaberi, numerous streams flow within the area, some being enlarged river channels. An analysis of residential distance from streams showed 32.5% living about 2-3km away, 31.4% within 0-1km, 21.7% about 4-5km away, and 14.4% beyond 5km. Closer proximity to streams increases vulnerability to floods, vector infections, and contamination, as these water sources may carry chemicals and contaminants,

posing health risks during heavy rains, particularly for those residing nearby.

Proximity to health facilities plays a crucial role in understanding the health vulnerability of a population, especially in marginalized communities like the Bonaberi slum, which lacks adequate infrastructure. The analysis revealed that the majority (35.5%) of the population lives more than 5km away from a health facility, while 33.4% are approximately 4-5km away, 21.1% between 2-3km, and only 10% live within 0-1km of a health facility. The poorly served roads, lack of street lighting, bridges, and emergency evacuation facilities make transportation challenging, particularly during emergencies. Access roads into these communities are difficult to navigate, relying mostly on motorcycles, contributing to increased vulnerability, especially in emergencies, and making timely healthcare access nearly impossible.

The community's challenges with pipe-borne water distribution force women and children to travel long distances for potable water. The findings showed that 35.7% travel between 100-200m, 35.2% between 51-100m, 19.4% within 0-50m, and 9.8% more than 200m to reach a public tap. The scarcity of potable water affects the quality of water used for cleaning and cooking, increasing vulnerability to waterborne diseases. Limited public taps lead to longer wait times, creating tension and potential violence, further increasing vulnerability to physical and emotional injuries.

Slum environments in Bonaberi rely on exposed pit toilets, presenting challenges. The shallow depth of these toilets, close to the water table, raises vulnerability to bacterial transport by wind and vectors like flies. The risk extends beyond toilet type, as flies can carry contaminants to various surfaces. Analyzing the distance between houses and pit toilets aims to assess household exposure to infections. The vulnerability lies not only in toilet usage but also in the shared living environment, impacting all residents.

VI. CONCLUSION

In conclusion, this study provides valuable insights into the complex relationship between environmental stressors and the vulnerability of women and children in the Douala IV slums, specifically Bonaberi, Cameroon. The findings highlight the multifaceted nature of the challenges faced by the population, ranging from exposure to floods and other environmental stressors to sensitivity and adaptive capacity. The data reveal a substantial impact of floods on the health and well-being of the community, with a nuanced perception of exposure and sensitivity among the residents. Environmental stressors such as fires, epidemics, and inadequate waste disposal contribute to the overall vulnerability of the population. Water contamination emerges as a significant concern, affecting health and leading to increased hospital visits. Moreover, the study emphasizes the importance of healthcare accessibility, with a notable proportion of the population facing challenges in reaching health facilities. The distance to key amenities further complicates the vulnerability scenario, especially in the context of limited infrastructure and difficult access roads. In light of these findings, holistic interventions are imperative to address the root causes of vulnerability in the Douala IV slums. Efforts should be directed toward improving waste management, ensuring clean water sources, enhancing healthcare infrastructure, and developing sustainable urban planning strategies. Such comprehensive measures can contribute to the resilience of the population in the face of environmental challenges, ultimately fostering better health outcomes for women and children in these vulnerable slum environments.

RECOMMENDATIONS

To enhance the overall health and well-being of women and children in slum environments, particularly in Bonaberi, a comprehensive set of recommendations is proposed. This includes advocating for improved urban planning and infrastructure development to mitigate exposure to environmental stressors. Concurrently, implementing community health education programs is crucial to raise awareness about health risks, emphasizing water contamination and other stressors, and empowering communities with knowledge for healthier practices. Prioritizing access to clean water through reliable water supply systems is vital, along with promoting proper waste management strategies to minimize health risks. Additionally, advocating for improved healthcare accessibility, empowering women and children through education and vocational training, and collaborating with governmental and non-governmental organizations for sustainable development projects are essential components. Incorporating disaster preparedness and response plans, ongoing research, data collection, and policy advocacy at various levels contribute to a holistic approach aimed at addressing the multifaceted challenges faced by vulnerable populations in slum areas like Bonaberi.

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Human Trafficking and Child Education in Nigeria

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ABSTRACT

This study examines human trafficking and its impact on child education. Human trafficking has had various effects on child education in most part of the world including Nigeria. Therefore, the main objective of this study is to explore the relationship between human trafficking and child education, the causes of human trafficking, the effects of human trafficking on child education and ways the government can possibly tackle this problem. This study is based on qualitative method and an in-depth interview was conducted, and the opinions of the respondents were well articulated and transcribed. Three respondents participated in the study. The result revealed among others, that the causes of human trafficking are mostly poverty, lack of education, ineffective law/unenforced law, unemployment, and ignorance. The study further revealed that there is a relationship between human trafficking and child education in Nigeria.

Keywords: child education, human trafficking, children, violence, nigeria.

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This study examines human trafficking and its impact on child education. Human trafficking has had various effects on child education in most part of the world including Nigeria. Therefore, the main objective of this study is to explore the relationship between human trafficking and child education, the causes of human trafficking, the effects of human trafficking on child education and ways the government can possibly tackle this problem. This study is based on qualitative method and an in-depth interview was conducted, and the opinions of the respondents were well articulated and transcribed. Three respondents participated in the study. The result revealed among others, that the causes of human trafficking are mostly poverty, lack of education, ineffective law/unenforced law, unemployment, and ignorance. The study further revealed that there is a relationship between human trafficking and child education in Nigeria. Therefore, concludes the need for government to empower and strengthen various institutions of law and agencies with these responsibilities to rise to their mandates in curbing human trafficking. This will not only stop human trafficking but, will also promote child education in Lagos and Nigeria at large.

Keywords: child education, human trafficking, children, violence, nigeria.

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I.   INTRODUCTION

Human trafficking has historical parallels with the exploitation of black Africans in previous centuries, indicating that it is not a new phenomenon (Lee, 2013). The forced movement of people is as old as the laws of supply and demand. What is new is the growing scale of human trafficking and the realization that little or nothing is being done to stop it. Human trafficking has raised serious social and political concerns in recent years. It is widely believed to cover a variety of crimes and abuses related to the recruitment, movement and sale of people in various exploitative conditions around the world. Despite the fact that human trafficking has long existed in various forms, it has only recently been acknowledged as a serious ethical and social issue, as shown by public discourse and media coverage (Farrell and Fahy 2009; Gulati 2011; Weitzer 2007).

Human trafficking is defined differently, but the different definitions share three key characteristics. These include the intention or purpose to exploit, the illegal activities carried out, and the approach taken. Human trafficking may be intentional rather than accidental and may not be intended to be mutually beneficial, according to the intention to exploit the (United Nations Palermo protocol, 2000) .The idea of criminality or illegal activity points to the subversion of victims' rights and violation of both national and international mechanisms designed to protect those rights. The approach taken by the perpetrators is important because it shows how victims are incorporated into the trafficking system. Illegal activities refer to the steps taken, and methods emphasize how victims are made into inputs in the system of trafficking, the intent can be thought of as the output (Hartmann, 2018).

Human trafficking is understood as a form of slavery (Bales 2005; Ould 2004). Human trafficking as a modern form of slavery is not characterized by legal ownership of one human being by another or long-term servitude, but rather by temporary ownership, debt bondage, labour, and overexploitation contracts in the global economy (Bales 2000; Bales 2005).

Human trafficking, sometimes known as modern slavery, takes many different forms. Sex trafficking, or the sale of women and children as prostitutes, is the most prevalent kind of human trafficking. The sale of men, women, and children for forced work with little to no payment is known as labor trafficking. The use of children as soldiers, war brides, and organ harvesting are further types of trafficking (Barrows and Finger, 2008). Victimization and criminology are useful tools for studying the minds of victims and system protagonists when applied to the study of human trafficking. Although victims may be taken captive or enter the system voluntarily or involuntarily, they ultimately find themselves at the mercy of human trafficking perpetrators. Through the system, victims may sustain permanent psychological and emotional harm.

According to the United Nations Protocol to Prevent, Suppress and Punish Trafficking in Persons (2000), human trafficking includes the recruitment, transfer, reception or harboring of persons through force, threats or other deceptive practices. kidnapping, coercion, fraud, abuse of power or vulnerability, position, or receiving or giving payment or wages to obtain that person's consent to control that other person for the purpose of exploitation.

Human trafficking is a serious crime and a serious violation of human rights. Every year thousands of men, women and children fall into the hands of traffickers at home and abroad. Almost every country in the world is affected by human trafficking, be it the country of origin, transit or destination of the victims. Trafficking in human beings can take place anywhere as long as the surrounding area has vulnerable conditions. According to Shelley (2010), human trafficking is seen as one of the most dynamic activities of international criminal organizations. Human trafficking is condemned by international conventions as a violation of human rights. Despite this condemnation, trafficking persons still remains rampant in the society.

However, human trafficking encompasses the exploitation of vulnerable school-age youths, particularly those with unstable family circumstances or limited social support. Studies reveal that children as young as 11 to 14 years old are trafficked into the commercial sex trade. (SDCOE, 2021). When children are trafficked, they are often forced into harmful and unsafe work that jeopardizes their health, safety, and values. As a result, they are unable to attend school, which deprives them of the chance to create a better future for themselves (UNICEF, 2016). The right to learn is a component of a child's right to education. Nelson Mandela famously remarked that "education is the most powerful weapon which you can use to change the world." Education and knowledge of trafficking in persons among all members of society are key to beating human traffickers (Chutikul, 2011).

II. OPERATIONALIZATION OF CONCEPTS AND THEORETICAL FRAMEWORK

Human trafficking, commonly referred to as trafficking in persons, is the crime of forcing or coercing a person to engage in sexual activity for profit or for the provision of work or services. Coercion can be mental or physical, covert, or overt. Regardless of whether coercion, deception or force was used, the commercial exploitation of children always constitutes human trafficking (The United States department of justice, 2020). Humans do not have to cross borders for human trafficking to take place. The movement of people defines human trafficking, and it can take place within a single nation or even within a single community (Anti-slavery, 2016). Human trafficking occurs in all parts of the world: people are sold, bought and traded like goods Victims of human trafficking fall into the hands of traffickers through deception, coercion or kidnapping (UNHCR, 2020).

The act, the method, and the purpose are the three main components of the crime of human trafficking. Traffickers use a variety of ways to keep their victims under control, including physical and sexual abuse, blackmail, emotional manipulation, and the removal of official documents. The victim may be exploited at home, while migrating, or in a foreign nation (UNODC). Regardless of race, nationality, gender, age, or economic standing, anyone can become a victim of human trafficking in today's world. Social media and the internet have suddenly made it easier for human trafficking. The victims of traffickers may not even recognize themselves as victims; instead, they are used as control tools. (Hannah Gould, 2017).

2.1 Human Trafficking in Nigeria

Nigeria is counted among the countries with a significant prevalence of human trafficking. The country faces the serious issue of millions of young Nigerian women and girls being vulnerable to human trafficking. This vulnerability arises from factors such as gender imbalance, poverty, high unemployment rates, cultural bias against women, deprivation, and other related causes. It is important to note that the global exploitation industry generates more than $32 billion by victimizing around 27 million people, with over 70% being women and girls (Ismaila and Ivy, 2020). The 2016 Global Slavery Index Report indicates that there are over 875,500 Nigerian victims. From a personal perspective, the statistics may seem relatively low, emphasizing the need for government and independent organizations to collaborate in gathering accurate data on this heinous crime (United Nations, 2017).

Nigerian women and girls who fall victim to trafficking are primarily recruited for domestic servitude and sex trafficking, while boys are often coerced into working on plantations in commercial farming, construction, quarries, mines, or engaging in petty crimes and the drug trade. These Nigerian victims are transported to various countries in West and Central Africa, including Cote d'Ivoire, Mali, Benin, Equatorial Guinea, Cameroon, Gabon, Guinea, as well as South Africa. Edo and Delta States are major

sources where women and girls, mainly, are subjected to forced prostitution and trafficked predominantly to Italy (Olujuwon, 2008), as well as Spain, Scotland, the Netherlands, Germany, Turkey, Belgium, Denmark, Finland, France, Sweden, Switzerland, Norway, Ireland, Slovakia, the Czech Republic, Greece, and Russia. The trafficking of young Nigerian women to Europe for sexual exploitation represents one of the most enduring trafficking flows due to its sophisticated organization and challenging detection (UN Global Report, 2014). Victims of the sex trade and forced labor are also transported to North Africa (Libya, Algeria, and Morocco), the Middle East (Saudi Arabia), and Central Asia (ILO 2006). An important characteristic of the Nigerian trafficking system is the use of charms or threats of voodoo curses by traffickers to control Nigerian victims and coerce them into prostitution (Siddhert, 2015). The Nigerian National Agency for the Prohibition of Trafficking in Persons reports that approximately 90 percent of girls trafficked to Europe are subjected to "oaths of secrecy" at shrines (Wilmot, 2012). In other words, these young women are often either willing or enticed by the promise of a better life to engage in prostitution abroad. Nigeria is also a destination for victims of human trafficking from neighboring African countries such as Togo, Chad, Cameroon, Niger, Benin, Liberia, Mali, Burkina Faso, and Ghana (Akpmera, 2009). Boys are primarily forced to work in Nigeria's granite mines, while women and young girls are coerced into prostitution or exploitative domestic work. As a transit country, Nigeria serves as a hub for the distribution of trafficked individuals to West Africa, Gabon, and Cameroon. Additionally, Nigeria acts as a transit point for trafficked persons from the Republic of Benin and Togo en route to Europe and the Middle East. Over the past two decades, there has been a rise in internal trafficking of Nigerian women and children within the country itself (UNESCO, 2006). A growing number of people are trafficked from rural communities to urban areas such as Lagos, Abeokuta, Abuja, Ibadan, Kano, Kaduna, Calabar, and Port Harcourt. Trafficking within these regions is primarily for exploitative domestic and farm labor, prostitution, or ritualistic purposes

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(International Movement against All Forms of Discrimination Racism, 2015) (United Nations, 2017).

Aristotle (384-322BC) defined education as the process of developing a healthy mind in a healthy body. It refines man's faculties, especially his mind, and enables him to enjoy the meditation of ultimate truth, goodness, and beauty, which is essentially perfect happiness. Education, in accordance with Tagore, "is the broadest path to solving all issues. Education is defined as the conscious, methodical, and ongoing process of imparting, provoking, or acquiring knowledge, values, attitudes, abilities, or sensibility, as well as any learning that arises from the process" (Cremin, Public Education, p. 27). Education is an intentional activity, as this broad definition suggests. Additionally, education is seen as a procedure rather than a physical location. It is an intentional action that can take place in many different contexts, not just in establishments with the name "school."(Barry Chazan, 2020). Article 26 of the Universal Declaration of Human Rights identifies education as a human right that children have the right to learn. In addition to stating that technical and professional education should be "generally available," it also states that higher education should be "equally accessible to all on the basis of merit." Education should be free and mandatory. Since low-income potential is a major contributing factor to poverty, poor education has a detrimental influence on people's life and the lives of their families, especially their children. Additionally, there are more cases of trafficking in occupations that don't need a degree. A good education can help people find better employment and stay away from situations that might lead to exploitation (Emmaline Huberty, 2019).

Education is essential for establishing environmental and ethical awareness, values and attitudes, skills, and behavior compatible with sustainable development, as well as for effective participation by the public in decision-making (UNESCO, 1992). According to the UNESCO Global Education Monitoring Report, education is not only a means to acquire knowledge but also a catalyst for social and economic development. It empowers individuals, promotes social cohesion, reduces inequalities, and enhances economic productivity (UNESCO, 2020). Education equips individuals with the necessary skills and competencies to actively participate in society, make informed decisions, and contribute to their communities (OECD, 2019). Moreover, education fosters critical thinking, creativity, and problem-solving abilities, which are essential for addressing global challenges and promoting innovation (UNESCO, 2015).

2.3 Education in Nigeria

Education continues to play a crucial role in the growth and development of nations, including Nigeria. Around the world, countries, especially developing nations, strive to enhance the quality of their education systems. Nigeria is no exception and has undergone a significant shift towards achieving high-quality education for its population. With a history of British colonization, Nigeria witnessed the introduction of formal or Western education on December 19, 1842, in Badagry by Mr. and Mrs. William De Graft and Rev. Thomas Birch Freeman of the Wesleyan Methodist Church. (Tete and Matthew, 2020).Their primary objective was to provide missionary education to convert the local population to Christianity. These missionary organizations actively pursued their mission, incorporating religious interpretations into various subjects of instruction. The Bible often served as the main textbook, while moral education was emphasized to instill exemplary values in students (NTI, 2007).

The Nigerian educational system is overseen and managed by the federal, state, and local governments. Education falls under the shared responsibility of these authorities. The Federal Ministry of Education plays a role in setting national policies and ensuring quality control across the education system. It is also responsible for overseeing higher education at the federal level. State governments are in charge of administering secondary school education, while local governments handle basic education within their jurisdiction. Nigeria's educational system comprises three levels: primary school education

(lasting nine years), post-basic/senior secondary education (spanning three years), and higher education which lasts for four to six years, depending on the program of study (Samuel and Jacob, 2020).

Conflict theory, originating in the late 19th century through the work of Karl Marx and Friedrich Engels (Hutchison, 2013), focuses on examining power structures and disparities, specifically how power imbalances contribute to social inequality (Hutchison, 2013; Parillo, 2012; Rössel, 2013). Based on the ideas of Marx, Hobbes, and Machiavelli, conflict theory analyzes power imbalances between people or social groupings. It implies that while competing for riches and power, individuals are naturally hostile. The Civil Rights Movement questioned the predominant roles of Whites and men, which helped the argument gain progress. Conflict is a fundamental aspect of family interactions, and conflict theory acknowledges that conflict is an inevitable outcome of social interaction. Positive conflict, on the other hand, can trigger beneficial change and problem-solving. The objective is to stop disagreement before it damages someone permanently or interferes with one's own interests. Family split, divorce, and communication failures can result from unresolved disagreement. Power, influence, and resource conflicts are the causes of conflict. (Paige and Frederick).

Conflict theory aims to explain why and how social inequality, power imbalances, and oppression occur in the context of human trafficking and human rights. Barner, Okech, and Camp (2014) show how factors like sexism, racism, and classism contribute to human rights violations such as child brides, sex trafficking, and organ trafficking. These violations are fueled by socioeconomic disparities not only between different classes but also globally between developed and underdeveloped nations. Similarly, a functionalist perspective questions the reasons behind and the role of oppression. It suggests that in the past, gender roles existed to meet the needs of society, with men performing labor and wage-earning tasks while women focused on homemaking and nurturing (Parillo, 2012). Some

argue that this still holds true today. To address human rights violations, it is crucial to understand the function they serve within society and then work towards creating a new harmony without such violations. For instance, labor trafficking provides cheap labor for higher profits, sex trafficking caters to the demand for sex and benefits pimps, child soldiers serve militant groups during conflicts, and organ trafficking supplies a limited resource to those in need. By examining the functions of human rights violations, it becomes possible to intervene and prevent them by addressing the underlying needs. (Meshelemiah, 2013).

III. RESEARCH METHODOLOGY

The exploratory research design was chosen for the purpose of this study. The selected research project is appropriate as the study is exploratory in nature as the research aims to better understand the experiences of victims of human trafficking and its impact on the education of children in Lagos State. The interview would help to know the opinions of people who are experts in the fields that has to do with human trafficking.The number of observations used to calculate estimates for a certain population is known as the sample size. The sample size is chosen from the population and 4 people will be selected. The researcher has selected Lagos State as the human trafficking victim sample frame for this study. This is due to the fact that Lagos State, known as the center of excellence, has many cases of human trafficking. The sample technique to be used is the simple random sampling technique.

Data were collected through in-depth interviews with individuals who have a knowledge of human trafficking and also victims of human trafficking. Open-ended questions were asked. For the responders to cooperate, a nondisclosure and confidentiality agreement was required. Secondary data was also utilized; it was gathered from journals, websites, and other relevant items. In addition to helping the researcher understand the research topic, this would provide insight into the experiences of victims of human trafficking. For this study, the chosen data analysis approach will be thematic content analysis, which is utilized

Human Trafficking and Child Education in Nigeria

to examine qualitative data. This particular method enables the researcher to convert qualitative data into numerical form.

IV. RESULTS AND DISCUSSION

4.1 Relationship between Human Trafficking and Child Education in Nigeria

This research examines human trafficking and emphasizes the value of education in putting an end to it. When someone is compelled to labor or have sex against their will, it is called human trafficking. The meaning might signify different things to different people. Prevention of human trafficking requires education. It aids in understanding the dangers and deceitful practices of traffickers. Children may learn about human trafficking in schools, and everyone can be informed through public awareness campaigns. People who are educated are better able to spot indicators of human trafficking, understand their rights, and make wise decisions. Children can feel protected in schools, and education aids in the rebuilding of lives after a disaster. The main way to fight human trafficking is through education.

4.2 Causes of Human Trafficking in Nigeria

According to the study's participants, there are several reasons why people get trafficked. Poverty is a big influence, since people in desperate circumstances may think that moving overseas will give them greater chances and financial stability. As people who are ignorant of the strategies employed by traffickers are more prone to fall into their traps, lack of education also increases susceptibility. Traffickers can operate more freely without being stopped because of weak enforcement and unenforced regulations. A person may become vulnerable to trafficking if they leave their job to look for work elsewhere due to unemployment. . Finally, ignorance about the dangers of trafficking increases the risk of becoming a victim. To address this issue, it is important to tackle poverty, improve education, strengthen law enforcement, and raise awareness about human trafficking.

4.3 Effects of Human Trafficking on Child Education in Nigeria

Human trafficking has a big impact on children's education. It prevents them from going to school and forces them to work instead. This makes them miss out on learning and affects them physically and emotionally. Some children are promised jobs abroad, but they don't realize that they are being trafficked. This is really bad because education is important for kids to grow and have a better future. We need to stop human trafficking so that children can go to school and learn in a safe place.

4.4 Ways Government can curb Human Trafficking and Promote Child Education in Nigeria

One person who works for the government said that children who have been trafficked face many challenges. They may become violent and have psychological problems because of what they went through. Some of them are forced to do dangerous things like hard labor and sexual exploitation, which can harm their health and shorten their life. They also suffer from emotional abuse and may struggle to be good citizens in the future.

Another person said that those who have been trafficked may face stigma when they come back to their communities. People may treat them differently because of what happened to them.

Another person said that trafficked children have a lot of problems when it comes to going to school. They may feel scared, miss a lot of school, not have the right documents, not understand the language, and be treated poorly because of what they experienced. To help them, it's important to provide special support, like talking to someone about their feelings, helping them catch up in school, finding flexible ways for them to learn, and getting legal help when needed. Schools, child protection agencies, and other people who help children need to work together to solve these problems.

4.5 Relationship between Human Trafficking and Child Education in Nigeria

The first research question introduces and explains what human trafficking all is about. The

first question shows peoples perspectives on human trafficking. There is various perception about what human trafficking entails. Human trafficking involves compelling or coercing a person to provide labor or services, or to engage in commercial sex acts. The coercion can be subtle or overt, physical or psychological. Exploitation of a minor for commercial sex is human trafficking, regardless of whether any form of force, fraud, or coercion was used (The United States Department of Justice, 2020). Various respondents were asked what they understood by human trafficking. The question goes thus "What is your perspective on Human Trafficking?" One of the respondents was asked about his perspective on human trafficking.

"Human trafficking is when people are forced to do labor or commercial sex for other people or traffickers or the act of taking people by force to do free labor or commercial sex" (Ministry of education staff 1 /Lagos/,2023).

According to the UNODC (2020) human trafficking is the act of obtaining individuals by coercion, fraud, or deception for the purpose of exploitation for financial gain. This crime occurs all throughout the world and may affect men, women, and kids of different ages and socioeconomic situations. To deceive and coerce their victims, traffickers frequently resort to violence, dishonest employment agencies, and false claims of chances for education and work. A Respondent who works in an immigration office also perceives it as:

"It is the smuggling of human beings out of the country. That's the simple way. It's the smuggling in of immigrants" (immigration officer /Lagos/, 2023).

Migrants who are smuggled are susceptible to abuse and exploitation. They may die at sea while being trafficked by profit-seeking criminals who consider them as merchandise, suffocate in containers, or perish in deserts, putting their safety and even lives at danger (UNODC,2023). Another respondent also claimed that:

"Human trafficking means that people are being traded and used in a bad way without their permission. This can happen when someone is forced to work, forced to do sexual things, or made to do other things they don't want to do. It is a very serious violation of people's rights, and it affects everyone, but children, women, and migrants are especially at risk" (Ministry of education staff 2 /Lagos/, 2023).

Human trafficking activities violate the fundamental rights of the victims of the crime. Many of the methods used in modern-day trafficking are categorically forbidden under international human rights legislation (Abiodun, 2021). According to Kara Napolitano, promoting and protecting human rights is especially important in the fight against human trafficking since abuses of human rights are both a cause of and a result of it.

Furthermore, the respondents were asked how education could be used as a preventive tool against human Trafficking. According to Allie (2023), "It is impossible to stop human trafficking unless everyone has equitable access to healthcare, education, and family-sustaining employment". The key to defeating human traffickers is education and awareness of the issue among every member of society (Chutikul, 2011). According to one of the respondents, he agreed that education is a great tool for combatting human trafficking.

"Education can be used when you allow all the children to go to school. And then there should be increased awareness in schools and in religious institutions and they should be told the risk of human trafficking and what usually happens to trafficked people and that they are usually abused. Also, they should know that traffickers usually deceive people and them good things they would do for them when they get abroad which usually is the opposite. Human trafficking usually takes some stages, the first is the recruitment stage, people are usually recruited by promising them that life abroad will be juicy for them and so it is usually easy to recruit people. The

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next is transportation stage, they travel through long distances which are usually dangerous routes and then when they get to their destination, they are forced to do free labor. Therefore, if children go to school, their minds will be occupied and so, traffickers will not have the opportunity to deceive children because they will be educated and more aware. And in schools now, it is advisable that the school should put it in their curriculum. They should put it in their school curriculum so that at the end of the day, there will be a subject on this human trafficking where they will be able to educate all the students that may be risked involved in human trafficking" (Ministry of education official1 /Lagos/, 2023).

Other than their homes, schools are one of the locations where kids spend the most time. Schools provide pupils the tools they need for the future and open doors to possibilities as adults. They are frequently important providers of stability and protection for kids, especially those who reside in dangerous homes or communities. Children not only learn to read and write but also social and life skills in school, which can boost self-assurance and efficacy (Gardner, 2023).

Another respondent also replied that people can be educated about human trafficking and its impact through public gatherings and programs.

"Well, we need to tell the public. To bring it to the public awareness by teaching them about the negative impact of human trafficking and how it destroys the lives of people. When we talk about education it is not only in schools but also in public gatherings" (immigration officer/Lagos/, 2023).

To defeat human traffickers, it is essential that all members of society are educated about the crime, its causes, and the harm it causes to victims. Governments, civil society, the media, and private businesses must all work to increase public awareness of this issue. It is essential that we try to increase education and information among the general public since they have specific role to play in the battle against human trafficking.

Additionally, their regular interaction with governments, the business community, and civil society is exceptional and creates new opportunities for collaboration in the fight against trafficking. Another respondent also replied that;

"Education is really important in stopping human trafficking. If we teach students, parents, and teachers about human trafficking in a way that they can understand, it helps them know what to look for and how to protect themselves. Education gives people the power to recognize when something is wrong, understand their rights, and make smart choices. It also helps people think carefully, care about others, and learn important skills that can stop exploitation from happening" (Ministry of education staff 2/Lagos/, 2023).

A student may opt to drop out of school or may be compelled to do so if their family is unable to support them financially. Traffickers usually take advantage of the weaknesses that such financial turmoil causes. Removing these obstacles and encouraging access to high-quality education might help people become less vulnerable to problems like human trafficking.

Education may help victims of human trafficking restore their lives in addition to acting as a preventative measure and an intervention tool. Opportunities for education frequently act as doors for survivors to acquire crucial skills, engage with their community, reestablish stability in their lives, boost confidence, and make plans for the future. But survivors commonly run into access issues with schools. For instance, a lack of funds may prevent survivors from paying for expensive tuition, and if they require assistance and time to rebuild their credit, they may not be eligible for student loans. Further preventing survivors from attending school are acknowledged problems including language hurdles and mental health challenges (Gardner, 2023).

4.6 Causes of Human Trafficking in Nigeria

The second research aims at explaining what causes human trafficking in Nigeria. The research question reads "What are the causes of human

trafficking?" During this research for in-depth knowledge, the causes of human trafficking were asked and most of the respondents agreed to the same reasons that lead to human trafficking. The respondents attributed the causes of human trafficking to poverty, Lack of employment, Lack of education, Ineffective law/ unenforced legislation and ignorance.

4.6.1 Poverty

Poverty is one of the root causes of poverty. Most people become victims because of poverty and this needs to be tackled. One of the respondents shared his opinion on this point;

> "The causes are many. The first one is Poverty. Because people are poor, they become desperate to get jobs. When they are looking for a job, they are looking for money. But because they are poor, they believe that if they are able to travel abroad, they will be able to get money" (Ministry of education staff 1/Lagos/, 2023)

People who are living in poverty sometimes have no alternative but to sell themselves. Traffickers have even been known to trick parents into handing up their kids in unusual circumstances. Parents send their children off in the hopes that they could have a chance at a better life. In this way, when they believe their children are somewhere happy, they can actually be working in a sweatshop or something even worse (Kolesnik, 2017).Another respondent also mentioned poverty was one of the major cause In his statement;

> "Poverty is the major reason because people who do not have money they will be hungry and so they will do anything to get money. There is the saying a hungry man is an angry man and so they become so angry that they will do anything to provide for themselves even if it is to exploit their fellow men".(immigration officer /Lagos/,2023)

According to an ILO/IPEC research, 40% of Nigerian street children and hawkers are trafficked children as a result of poverty, and 8 million Nigerian children are employed in exploitative child labor (Barr, 2015).

4.6.2 Lack of Education

Article 26 of the Universal Declaration of Human Rights identifies education as a human right. "Everyone has a right to education," the text declares. It continues by stating that technical and professional education should be made "generally available" and should be free (at least in the primary and fundamental phases). All people should have equal access to higher education based on their merit. One of the respondents said:

> "Some of those people who are being trafficked don't have education. And those who are educated don't have awareness and do not know how human trafficking works and so they fall into the traps of human traffickers because most of the traffickers, what they do is deceive them and they tell them that they are going to give them a lucrative job abroad. But only when they get there, that is the time, they will now realize that it's not a lucrative job they have come to do. They have come to do forced labor. And they are coming to do commercial sex" (Ministry of education staff 1/Lagos/, 2023)

This can also been as a cause for human trafficking because they are not exposed enough. Poor education has an adverse effect on a person's life as well as the lives of their family members, which includes their offspring. Potential for income is a major factor in this. Without education, it is far more difficult to leave poverty. Additionally, there are more cases of trafficking in the industries like agriculture, mining, fishing, construction, and domestic service, which often do not require a college degree. Another respondent responded that;

> "Because some people are not educated, they are less aware of human trafficking and so, this makes them vulnerable to traffickers" (Ministry of education staff 2/Lagos/, 2023)

4.6.3 Ineffective Law/ Unenforced Legislation

Human trafficking has become more widespread because the police and laws are not strong enough. The laws mostly focus on trafficking for sexual exploitation, but there are other types of

trafficking too. The police are not well-prepared and don't know how to handle these cases properly. They also need to be more sensitive to gender issues (UNESCO, 2006).A respondent spoke on this issue of ineffective law/ unenforced legislation as one of the causes;

> "*Also, Ineffective Law/unenforced legislation. Promotes human trafficking because when traffickers know that there is no law that is going to send them to jail or punish them, they will force people to do free labor for them. This usually encourages people to go into human trafficking. There is a law but it is not usually enforced" (Ministry of education staff1/Lagos/, 2023*)

Trafficked people often say that some Nigerian officials work together with traffickers. They help them get fake documents and help them cross borders and ports. Police officers are usually not interested in investigating violent crimes, especially against women and children. This is because the victims cannot afford the costs of investigations or bribe the police officers. So, people who commit rape, sexual assault, domestic violence, and human trafficking often get away without being punished in Nigeria. (UNODC, 2006). Another respondent also said*;*

> "*Human trafficking is made easier by weak law enforcement, dishonesty and the existence of organized crime networks". (Ministry of education staff 2/Lagos/, 2023)*

Porous borders, dishonest government employees, involvement of foreign organized crime organizations or networks, and the inability or unwillingness of immigration and law enforcement agencies to manage border traffic (Barr, 2015).

4.6.4 Unemployment

Another reason is unemployment. One of the most serious societal issues Nigeria is now dealing with is unemployment. It has far-reaching effects on the economy and national security and impacts every member of society, young and old (Johnson, 2017). A respondent who is a government official said;

> "*The second one maybe job. Some people willing let themselves to be trafficked because of their desperate desire to get a job and also ignorance. Some people do not know they are being trafficked because of ignorance" (immigration officer /Lagos/, 2023)*

About one in four Nigerians are unemployed, according to the country's 33% unemployment rate. With such a high unemployment rate, many people in the nation are unable to find job (Johnson, 2017).Another respondent also said;

> "*There are many reasons why human trafficking happens, and they are complicated. Some of these reasons include not having enough money, not having access to education, treating men and women unfairly, having wars or fights, not having stable governments, and not being included in society. People who do human trafficking take advantage of these problems. To stop human trafficking, it's important to help people who are poor, provide education, treat everyone fairly, make peace, have stable governments, and include everyone in society" (Ministry of education staff 2/Lagos/, 2023).*

Even though Nigeria has one of the largest and fastest-growing economies in Africa, many of its residents struggle to find employment. For many people, it is difficult to obtain a good education and acquire the necessary skills to find employment. As a result, they attempt looking elsewhere. It is also crucial to note the difficulty in finding employment, especially for individuals with a degree and relevant experience. Additionally, they could run into con artists while they look for work overseas who could use the pretense of job to seduce them into doing something horrific (Kolesnik, 2017).

4.6.5 Ignorance

Traffickers frequently use promises of better living circumstances abroad to lure in the weak. The traditional lure is a job opening with more pay than what is offered in the neighborhood. Traffickers often take advantage of chances for additional education or skill development. Most

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often in the unofficial and unregulated industries, such as hairdressers, nannies, or domestics, they make promises about possible marriages or offer positions abroad. A respondent claimed that;

"Some people do not care they are just ignorant about things and therefore they can easily fall victims" (immigration officer/Lagos/, 2023).

Many victims of international human trafficking, particularly women and girls, are unaware of what awaits them when they arrive in their new country. Due to the fact that many of the women and girls had little to no education, they were readily seduced by the positive portrayal of their sponsors' lifestyles (Mosimabale & Iyore, 2020).

4.7 Effects of Human Trafficking on Child Education in Nigeria

This research question aims to understand the effects of human trafficking on child education. The question is "What are the effects of human trafficking on child education in Nigeria?" Human trafficking has affected the education of children in many negative ways. Some respondents gave their view on the question "What are the effects of human trafficking on child education?" According to one of the respondents;

"Human trafficking affects the education of children because most of them will not be able to go to school and so, this will affect them physically and so some of them become violent and this may affect them psychologically. And another thing is that it may result in poor living conditions. When you see children doing jobs, their parents must have forced them to do that job and so definitely, most of these children will not be able to go to school. So it will decrease the number of children in school and increase the number of children not in school. And this thing is going to affect the economic life of Nigeria in future because those who are not in school may take to crime and then they may do all other bad things." (Ministry of education staff 1/Lagos/, 2023)

Human trafficking affects the education of children because children who have been trafficked will not be able to go to school to have a better future because children who have been trafficked are usually restrained and their freedom is usually restricted.

"Those who don't have the knowledge that they are being trafficked It affects their education because some are promised job abroad. Once they are promised jobs, they forget about education. They promise them jobs abroad without them knowing that they are but then you don't know that they are being trafficked" (immigration officer/Lagos/,2023).

Another respondent also said;

"Human trafficking really affects children's education. Kids who are trafficked often can't go to school or have to stop going. They might have to work for a long time, be in dangerous situations, and be hurt physically or emotionally. Because of this, they can't learn and grow like they should. We want to stop human trafficking so that children can go to school and learn in a safe and caring place" (Ministry of education staff 2/Lagos/, 2023).

Human trafficking has severe consequences on children's education. It prevents them from attending school, leading to physical and psychological impacts. It also results in poor living conditions as children are forced into labor instead of receiving an education. This decreases the number of children in school and increases the number of children who are unable to access education. These circumstances can negatively affect Nigeria's future economy, as children deprived of education may resort to crime and engage in harmful activities. Furthermore, some children are lured into trafficking by the promise of jobs abroad, causing them to prioritize work over education without realizing they are being trafficked. Trafficked children face dangerous situations, endure physical and emotional harm, and are unable to learn and develop properly. Efforts to combat human trafficking are crucial to

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4.8 Ways Government can curb Human Trafficking to Promote Child Education in Nigeria

This research question aims at finding ways in which the government can curb human Trafficking and promote child Education. The research question is "How can the government curb human trafficking to promote child education system in Nigeria?" There are various steps the government can take to increase awareness about human trafficking.

One respondent replied that;

> "Government should encourage religious institutions about creating awareness to the people. There must be awareness through the religious organization that can educate people about the risk of this human trafficking. Through school, the government should put it among school activities so that there will be a day set aside to educate them about this human trafficking risk. It should be added to school curriculum. There must be an agency created against trafficking in persons .These agencies should go to market places, bus stops and so on to tell people about the risk of human trafficking. We have an agency in Nigeria now known as NAPTIP. Also there should be programs created by government officials for awareness purposes" (Ministry of education staff 1/Lagos/, 2023).

To increase awareness about human trafficking, respondents suggested various actions the government can take. One approach is to involve religious institutions in spreading awareness and educating people about the risks of human trafficking. Incorporating human trafficking education into school activities and curriculum is another important step. Another respondent replied that;

> "The government should create subjects in the school curriculum in schools so people can be more aware about human trafficking and also, agencies should be created although there is an agency called NAPTIP that is against trafficking of persons" (immigration officer/Lagos/, 2023).

Creating dedicated agencies or organizations focused on combating trafficking and conducting awareness campaigns through media platforms like TV, radio, and the internet were also recommended. Organizing meetings and classes for teachers, parents, and the community can further enhance awareness. Collaboration between the government, organizations, police, and other countries is crucial to effectively combat human trafficking. This collaboration can involve preventive measures, support for victims, and ensuring appropriate punishment for offenders. Another respondent also replied that;

> "The government can do many things to make people more aware of human trafficking. They can create special campaigns that tell people about it using TV, radio, and the internet. They can also organize meetings and classes for teachers, parents, and people in the community to learn about it. It's also important for the government to work together with organizations, police, and other countries to stop human trafficking. They can work on ways to prevent it, help find and support the people who are hurt by it, and make sure that the people who do it are punished" (Ministry of education staff 2 /Lagos/, 2023).

Also, the respondents were also asked the question about the measures to be taken to prosecute traffickers. The question goes thus; "What are the measures taken to prosecute traffickers?"

According to a respondent;

> "Traffickers who are caught and arrested should be made to face the law immediately. Not that they will just arrest them and keep them in detention for a long period without a prosecution. In Lagos state I think there is a special court for that. So that they will be able to do away with the cases and then to serve as a deterrent to the offenders. If they are enforcing the legislation, I think this human trafficking will reduce" (Ministry of education staff 1/Lagos/, 2023).

Another respondent also replied that;

"To stop the people who do human trafficking, the government needs to take strong actions. They should make strict laws and make sure the police and other enforcement groups are strong enough to catch and punish the traffickers. It's important for countries to work together and have special units that focus on stopping human trafficking. They should also give help to the people who have been hurt by trafficking and help them get better. To prevent trafficking from happening, it's important to control the borders, keep an eye on the agencies that recruit people, and have strict rules for how people are treated at work" (Ministry of education staff 2 /Lagos/,2023).

Respondents emphasized the importance of immediate legal action against traffickers upon arrest. They advocated for the establishment of special courts, such as in Lagos state, to expedite cases and serve as a deterrent to offenders. Strong actions should be taken by the government, including the enactment of strict laws and ensuring that law enforcement agencies are capable of catching and punishing traffickers. Collaboration between countries and the establishment of specialized units to combat human trafficking were also highlighted. Support should be provided to trafficking victims for their recovery. To prevent trafficking, effective border control, monitoring of recruiting agencies, and strict workplace regulations are crucial.

There were various steps taken by the government to combat human trafficking. The Lagos State Task Force against Human Trafficking was established by the Nigerian state of Lagos to combat illegal immigration and human trafficking. In order to combat human trafficking and associated issues in the state, the Lagos State administration wishes to collaborate closely with the National Agency for the Prohibition of Trafficking in Persons (NAPTIP). By offering them the assistance and services they require, the NAPTIP Lagos Command assists victims of trafficking as well as persons who have returned

from nations such as the Arab Emirates, the Benin Republic, Lebanon, Libya, Mali, and others (Busari, 2020).

V. CONCLUSION AND RECOMMENDATIONS

This study was conducted to examine the significant relationship that exists between human trafficking and child education. As the study progressed, it became evident that human trafficking has negative effects on child education and human trafficking has been a growing phenomenon. To address the issue of human trafficking and its impact on child education, the following recommendations are suggested based on the findings of this study.

- Make the laws stronger and better: Create clear rules and guidelines that specifically focus on stopping human trafficking. These rules should cover everything from preventing trafficking to protecting the victims and punishing the traffickers. It's important to keep updating these rules to keep up with new ways that traffickers might try to do their bad actions. Also, make sure that different parts of the government, like the police and schools, work together to stop trafficking and protect children.
- Make the police and other law enforcement groups stronger: Give them more money and training so they can do a better job of finding, catching, and punishing the people who do human trafficking. Create special teams and groups that focus specifically on stopping trafficking. Encourage them to share information and work together with other countries. By improving their techniques and focusing on helping the victims, we can make sure that the people who do human trafficking are caught and their networks are taken apart.
- Work together with other countries to stop trafficking: Make agreements and treaties with them to share information and help each other catch the traffickers. This includes working together on operations, sharing important details, and bringing the victims back to their home countries. Take an active role in international groups and meetings to share

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what works best and learn from others who have been successful in stopping trafficking. By collaborating with other countries, we can have a bigger impact and make a difference in the fight against human trafficking worldwide.

- Create campaigns that teach people in communities, parents, teachers, and young people about the dangers of human trafficking and why it's important to protect children's education. Use different ways to reach people like TV, radio, social media, and events in the community. Share the right information, show them what to watch out for, and encourage them to report any suspicious activities. Work with people who are respected in the community, like leaders and organizations, to help get the message out even more. By making more people aware, we can all work together to stop human trafficking.

- Set up and make stronger support systems for people who have been trafficked: Make sure they have safe places to stay, and get the medical and emotional help they need. Provide them with legal assistance and support for their education. Give them counseling that understands the trauma they've been through. Create different ways for them to learn that fit their needs, like flexible schedules or programs that help them catch up with their studies. Work together with organizations, government agencies, and other people involved in protecting children to make sure they get the help they need at every step of their healing and rejoining society.

- Encourage teamwork between schools and organizations that protect children: Make it easier for education authorities, people who help protect children, police officers, and non-profit groups to work together regularly. Create plans and systems for sharing important information, managing cases together, and referring children who might be victims of trafficking to the right people. Help teachers and school staff get better at recognizing, supporting, and getting help for children who might be in danger. Also, make sure schools are safe and welcoming places that help children feel strong and happy. By working together, we can make sure that

children who have experienced trafficking get the support they need and can succeed in school.

- Make efforts to stop human trafficking before it happens: Look at the main reasons why trafficking happens, like poverty, lack of good education, unfair treatment of different genders, and people being left out of society. Create plans that tackle these issues, like helping poor communities have better job opportunities, giving scholarships and support to children who are at risk, and empowering women and girls. Also, work with communities to create programs that teach people about their rights, challenge harmful beliefs, and help children and families become strong and confident. By doing these things, we can prevent trafficking and create a safer and fairer world for everyone.

- Create strong rules and systems to make sure that recruitment agencies don't exploit or traffic people. Check on them regularly to make sure they follow fair labor rules and treat people ethically. Make sure the agencies are licensed and accredited properly, and have a way for people to report if they're being mistreated or taken advantage of. By doing these things, we can make sure that people are hired for jobs in a fair and safe way.

- Help people who have survived trafficking get job skills and support for their lives: Create programs that teach them practical skills for jobs and help them start their own businesses. Make sure these programs also connect them with opportunities to earn money. Work together with companies to help them find jobs and encourage fair and ethical employment practices. By doing these things, we can help survivors of trafficking build a better future for themselves.

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