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## Forward

There is witnessed growth in researches carried across the globe, sectors and disciplines. Machakos University Journal of Science and Technology provides unique opportunities to the researchers, academicians and professionals by minimizing such publication bottle necks.

The Volume three (3), Issue 1 of Machakos University Journal of Science and Technology presents research articles in the areas of Science, Technology, Engineering, Mathematics and Business. The manuscripts in this issue have been subjected to the right editorial and peer-review process. The quality of these articles has been enhanced by a rich editorial board drawn from a diverse disciplines. The Journal is published in both print and online forms.

I acknowledge the efforts, commitment from our editorial and reviewers teams towards actualizing the publication of the first issue of volume three of the Machakos University Journal of Science and Technology journal.

Prof. Stanley Makindi

<u>Chief Editor</u>

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## Ikisiri

Mitandao ya kijamii imekuwa ikitumika sana kama vyombo vya mawasiliano na utangamano miongoni mwa watu katika ulimwengu wa sasa. Kando na kutupa uhuru wa kusambaza maoni yetu, mitandao ya kijamii imewezesha watu wengi kutoa maoni yao kuhusu masuala ya kiuchumi, kijamii na kisiasa hata kuliko zamani. Habari nyingi zinazosambazwa katika mitandao hii hazidhibitiwi kwa vile zinatokana na fikra za kibinafsi, mihemko na makabiliano ama majibu ya papo hapo ambayo inaweza kuwa yenye mapendeleo. Kutokana na haya, makala hii ilichanganua jumbe teule za mwanamtandao Mkenya maarufu aitwaye Eric almaarufu Amerix katika mtandao wa X, (hapo awali *Twitter*), akijitambulisha kama @Amerix. Ilitathmini kauli zake kwa kuhusisha nadharia za ubabedume na ufeministi. Kwa maoni yetu, tunadai kuwa @Amerix amechukua nafasi hii ya kuwepo kwa pengo la kijinsia linalodumu kushughulikia masuala ya 'wanaume' lakini kwa upande mwingine, tungependa kuonyesha kuwa inawezekana kuwa shughuli zake zimedhoofisha maendeleo ambayo yalikuwa yashapatikana katika kuumbua mifumo ya kiubabedume katika mpito wa wakati. Data ilikusanywa kwa usampuli wa kimakusudi ambapo jumbe teule zilizopata majibu mengi, zikasambaa sana na hata kupendwa zilitumika. Jumbe zilizoteuliwa ni zile zenye kuibua umaarufu kutokana na nembo ya *hashtag #MasculinitySaturday* inayotokana na vipindi vya @Amerix vya Jumamosi na kusababisha wafuasi wake wengine kumtuhumu kama anayeendeleza itikadi za kiubabedume. Utafiti huu ulibaini kuwa @Amerix ni mwenye taasubi ya kiume kutokana na anavyotetea masuala ya kiume. Aidha, ilidhihirika kuwa ni 'mwasi' kwa vile anapinga baadhi ya tamaduni ambazo zimekuwepo na hata maendeleo ambayo yalikuwa yashapatikana katika kuleta usawa wa kijinsia. Tunapendekeza watafiti wa baadaye kuchunguza namna majukwaa mengine yanavyoshughulikia suala la kijinsia. Pia, wanaweza kutoa suluhu la udunishaji wa jinsia moja. Tunatumai kuonyesha kuwa mitandao ya kijamii inatoa kipera ibuka cha mahusiano ya kifasihi na kutokana na hayo, kukutana kwa ubunifu na mijadala ya kifasihi.

**Istilahi muhimu**: *mitandao ya kijamii, 'uume sumu' ufeministi, mfumo wa uume, udenguzi*

## UTANGULIZI

Mtandao wa kijamii ni mfumo wa mawasiliano ya kielektroniki unaopitia katika kompyuta ulimwenguni unaotumiwa kutafuta taarifa, kuwasiliana na kupeana taarifa (TUKI, 2004: 280). Maelezo haya yanaonyesha kuwa mtandao wa kijamii umeleta mahusiano ulimwenguni

ambapo watu kutoka pembe tofauti za ulimwengu hutangamana kwa njia ya kielektroniki. Upekee wa mtandao huu ni kuwepo kwa utangamano huu na zaidi ya yote, uhuru wa mtumizi wake kutoa habari, mawazo, mihemko, na hata matamanio yake. Kando na hayo, watu huutumia kama jukwaa ama soko la kutangazia bidhaa na huduma zao. Vilevile, umesaidia watu kuunganishwa na marafiki wao wa zamani na hata kuunda marafiki na mahusiano mapya. Baadhi ya 'majukwaa' ya mtandao ya kijamii yanayotumika sana kuwaunganisha watu ni kama vile: *Facebook, Instagram, X (hapo awali Twitter), LinkedIn, Tiktok, Telegram* na kadhalika.

Katika makala hii, tulijikita katika mtandao wa *X* mbapo, kutokana na uhuru ambao mtumizi wa mtandao huu anao wa kuelezea habari na mawazo yake, tulichanganua jumbe teule za mwanamtandao Mkenya maarufu aitwaye Eric almaarufu Amerix. Yeye hujitambulisha kama @Amerix katika mtandao huu. Tuliamua kuchagua mtandao wa *X* na kuchambua jumbe kwa mkondo wa kifasihi kwa vile tunaamini kuwa mtandao huu ni kipera ibuka cha fasihi kwa vile kina sifa ya kifasihi ambayo ni kutumia lugha kwa usanii na kuwasilisha suala fulani kwa njia inayoathiri, kugusa na kuacha athari fulani kwenye hadhira. Sifa hii ndiyo inayompa @Amerix uhuru (ushatajwa) wa kuzungumzia masuala ya kijinsia. Kwa kuhusisha nadharia za Ufeministi na Ubabedume, tulitathmini kauli zake zinazomchora kama mwenye taasubi ya kiume. Taasubi ya kiume ni dhana inayotumiwa kueleza na kuhusishwa na wanaume ambao wanaipendelea na kuikweza jinsia yao huku wakiidhalilisha ile ya kike. Hii ni sifa muhimu na ya kawaida katika itikadi ya ubabedume. Taasubi ya kiume ni moja kati ya sifa nyingi zinazoshambuliwa na wafuasi wa Ufeministi (Wamitila, 2003: 209).

Wafula na Njogu (2007: 90), wanadai kuwa nadharia ya Ufeministi hupigania haki za wanawake katika jamii ya ubabedume. Wanadai kuwa mhimili mkuu wa nadharia hii ni kubaguliwa kwa wanawake katika jamii kwa misingi ya jinsia yao ya kike. Matokeo yake ni wao kuwa miongoni mwa wanyonge katika jamii. Beauvoir (1949) katika Kimondiu (2019:18) anashambulia asasi ambazo zinachangia katika ukandamizaji wa mwanamke ambazo ni ndoa na utamaduni. Anaishambulia mielekeo ya utamaduni ya kumfanya mwanamume kama kaida au binadamu-kielelezo na kumchora mwanamke kama kitu hasi na duni. Katika makala hii, mhimili mkuu wa nadharia ya ufeministi uliotuongoza ni: jamii huongozwa na mfumo wa kiubabedume umwekao mwanamume kama msingi mkuu katika jamii na uliopangwa kwa njia inayomdunisha mwanamke katika nyanja zote za kiutamaduni zikiwemo: famila, dini, siasa, uchumi, jamii na kadhalika (Yanni, 1995:37). Vilevile, malengo mawili ya uhakiki wa kifeministi yalituongoza ambayo ni: kuziangalia upya kazi zilizoandikwa na wanaume kwa mtazamo wa kike. Kwa mujibu wa Maggie (1986) katika Osoro (2003:13), uhakiki wa

kifeministi ni uchunguzi kuhusu usawiri wa kijinsia na itikadi katika fasihi kwa mtazamo wa kike. Pili, ni kuchunguza jinsi lugha inavyotumiwa kuashiria mambo mbalimbali katika fasihi. Tunaamini kuwa, lugha ya kifasihi hutumika kusawiri mambo mbalimbali kuliko jinsi lugha hiyo inavyoweza kutumika katika miktadha isiyo ya kifasihi.

Nadharia ya ubabedume, kwa mujibu wa Wamitila (2003:241) ni dhana inayotumiwa kuelezea mfumo wa kijamii unaomtukuza mwanamume huku ukimdhalilisha au kumdunisha mwanamke. Ni mfumo unaomfanya kaida kuu ya kijamii. Huzichukulia amali za kiume na mawazo yao kama kaida za kufuatwa katika jamii nzima. Connell (2005) katika Kibigo (2020:27) anadai kuwa, ubabedume hutazamwa kwa njia zaidi ya moja kama vile mahusiano ya kijinsia, ukatili, malezi na kadhalika. Huu ndio mkondo tutakaotumia kudhihirisha ubabedume katika jumbe teule. Hii ina maana kuwa, ubabedume si sawa na nguvu za kimwili bali ni matendo ya wanaume ya kijamii. Mhimili mkuu utakaotuongoza katika utafiti huu ni ule unaojikita kwenye sifa za ubabedume. Ni sifa ambazo sharti mwanamume awe nazo ili kuweza kujenga, kudumisha na kudhihirisha ubabe. Sifa hizi ni kama vile: uvumilivu, uwezo, kutoogopa, kuthubutu, ukware miongoni mwa sifa nyingine (Kibigo, 2020:28).

## Suala la Utafiti

Majukwaa ya mtandao wa kijamii yamekuwa yakitumika kama vyombo vya mawasiliano na utangamano miongoni mwa watu katika ulimwengu wa sasa. Majukwaa haya yamewezesha watu kutoa maoni yao kuhusu masuala ya kiuchumi, kijamii na kisiasa hata kuliko zamani. Habari nyingi zinazosambazwa katika majukwaa haya hazidhibitiwi kwa vile zinatokana na fikra za kibinafsi, mihemko na makabiliano ama majibu ya papo hapo ambayo yanaweza kuwa yenye mapendeleo. Kutokana na uhuru huu wa kutumia majukwaa haya, makala hii ilichanganua jumbe teule za mwanamtandao Mkenya maarufu aitwaye @Amerix (keshatajwa) zinazomchora kama 'mwasi' na mwenye taasubi ya kiume.

## Sababu za kuchagua Mada, Malengo ya Utafiti na Usampulishaji

Suala la jinsia, uana na ngono limeenea katika jamii tuliyomo. Limekuwa na athari miongoni mwa wanajamii katika nyanja za kiuchumi, kijamii na siasa. Hivyo, mtafiti aliteua suala hili ili kuchunguza maoni na msimamo wa mwanamtandao mwanamume ya jinsia, uana na ngono. Aidha, kwa vile suala la wanawake limeshughulikiwa na watafiti kama vile Kimondiu (2019), aliyechunguza "Usawiri wa Mwanamke katika Nyimbo za Sifo za Wakamba," naye Kibigo akachunguza suala la ubabedume katika miviga ya Shilembe na Mchezasili, ndipo nasi tukaona tuchunguze suala la ubabedume tukijikita katika mtandao wa X.

Malengo mawili yaliongoza utafiti huu ambayo ni mwanzo, kumchora @Amerix kama mwenye taasubi ya kiume na pili, kudhihirisha mtandao wa kijamii kama kipera ibuka cha fasihi kinachoweza kuzungumzia masuala muhimu ya kijamii, kisiasa na kiuchumi.

Usampuli ulikuwa wa kimakusudi ambapo jumbe teule zilizozungumzia masuala ya kijinsia, zikapata majibu mengi, zikasambaa sana na hata kupendwa zilitumika. Jumbe zilizoteuliwa ni zile zenye kuibua umaarufu kutokana na nembo ya *hashtag #MasculinitySaturday.*

## MBINU ZA UKUSANYAJI WA DATA NA MATOKEO YA UTAFITI

Utafiti ulikuwa wa maktabani ambapo tulihakiki jumbe katika mtandao wa *X*. Jumbe hizi ndizo zilizokuwa data ya msingi. Jumbe zilizohakikiwa ni zile zilizozungumzia masuala ya jinsia, uana na ngono. Data ya upili ilipatikana kwa kusoma vitabu, makala na tasnifu za watafiti wengine zenye uhusiano na mada teule. Vifaa vilivyotumika katika utafiti huu ni vifuatavyo: kipakatalishi, daftari, kalamu na rununu. Data iliyokusanywa ilichanganuliwa kwa njia ya uchanganuzi maelezo.

Utafiti ulipata @Amerix ni 'mwasi' na mwenye taasubi ya kiume. Vilevile, tulibaini kuwa mtandao wa kijamii ni kipera ibuka cha fasihi. Tumejadili ifuatavyo.

## UBABEDUME UNAVYODHIHIRIKA KATIKA JUMBE TEULE ZA *X* ZA @AMERIX

Katika uainishaji wa jumbe za @Amerix kwenye mtandao wa *X*, tuligundua kuwa, jumbe hizi zimemchora kama mwenye taasubi ya kiume kwa njia tofauti. Tofauti hizi zinatokana na kuainisha jumbe ifuatavyo: zinazoonyesha mapendeleo kwa mwanamume, zinazomhimiza mwanamume kuwa msingi mkuu na kaida kuu katika jamii, zinazomdunisha mwanamke kwa njia ya moja kwa moja, zinazomdunisha mwanamke kwa njia isiyo ya moja kwa moja na zinazomchora @Amerix kama mwasi.

Ni kweli kusema kuwa, @Amerix ametumia nafasi hii ya kuwepo kwa pengo la kijinsia linalodumu katika jamii kushughulikia masuala ya wanaume. Ametumia mtazamo wa kijamii kuwa jinsia ya kiume imepuuzwa kama jukwaa la kuandika jumbe zinazohuzu kushauri urejeshaji wa ubabedume uliokuwa umeanza kufifia kutokana na upiganiaji wa usawa wa kijinsia. Tunakisia kuwa, matatizo ya kijamii kama vile ripoti za mauaji ya wanawake, kuvunjika kwa ndoa nyingi na malezi mabovu ya watoto ni mazao ya kufa kwa ubabedume ambao @Amerix anapigania kurejeshwa kwake.

## Mapendeleo kwa mwanamume

Kwanza, katika kumchora @Amerix kama mwenye taasubi ya kiume, tumechambua matumizi yake ya lugha na uteuzi wa hadhira yake. Tumegundua kuwa, tabia ya kuelekeza jumbe zake kwenye jinsia ya kiume inaonyesha kuwa kwa namna fulani, anapuuza ile ya kike. Hii ni licha ya kuwa jumbe zake zingine zinaweza zikawafaa wanawake hasa zinazogusia masuala ya afya, uchumi na jamii lakini inatokea kuwa anapendelea jinsia ya kiume. Hii inaonyesha kuwa, anaiona jinsia ya kike kama isiyo na thamani yoyote au yenye thamani duni sana katika jamii. Ujumbe wake wa tarehe 26/03/22 unasema kuwa,

*"Men, here are enemies of men, - Masturbation - Pornography - Obesity/Fatness - Betting & gambling - Alcoholism - Prostitution - Smoking - Sugar & seed oils - Lack of sleep. Stay away from these enemies. Your loved ones depend on you for survival. #MasculinitySaturday"*

*"Wanaume, haya ndiyo maadui ya wanaume: punyeto, filamu za ngono, wizani kupita kiasi, uchezaji kamari, ulevi, ukahaba, uvutaji wa sigara, sukari mafuta ya mbegu na ukosefu wa usingizi. Wapendwa wako wanakutegemea ili kuishi."*

Ujumbe huu unampa wosia mwanamume njia ya kulinda afya yake. Anaonyeshwa vitabia vinavyoweza kuidhoofisha afya yake na kushauriwa kujiepusha navyo. Kwa maoni yetu, huu ni ujumbe ambao ungefaa hadhira ya jinsia zote mbili kwa vile hivi vitabia pia huathiri mwanamke. Mwanamke ana afya anayofaa kulinda pia. Vilevile, inatokea kuwa amechora mwanamume kama tegemeo la familia. Kwa kusema kuwa, "Wapendwa wako wanakutegemea ili kuishi," inaonyesha kuwa pasipo mwanamume, familia haiwezi kudumu. Amewachora wanawake na watoto kama wategemezi ijapokuwa katika maisha ya sasa, wanawake wengi wamechukua jukumu la kulea watoto kibinafsi. Rais wa Kenya alitaja suala hili la ulezi wa watoto kibinafsi katika sherehe za Madaraka mnamo tarehe 01/06/22. Akadai kuwa visa kama hivi vimeongezeka kutoka asilimia ishirini na tano nukta moja hadi asilimia thelathini na nane nukta tisa (25.1%-38.9%) kati ya miaka ya 2009-2019. Tunakisia kuwa, idadi kubwa ya visa vya ulezi wa kibinafsi ni ile ambayo mwanamke ndiye anayechukua jukumu la ulezi.

Tarehe 25/03/2022, @Amerix alisema,

*"Men, TV news is propaganda, its content: - Diseases - Disasters -*

*Distraction – Deaths. It is designed to emasculate the man & weaken the*

*mind. Protect your mind from Media's 4Ds. Read books, journals & periodicals to build a resilient mindset. #MasculinitySaturday"*

"Wanaume, habari za televisheni ni propaganda. Zina : magonjwa, mikasa, vifo. Zimeundwa kumdhoofisha mwanaume na akili yake. Ilinde akili yako kutokana na yaliyo katika mtandao huu. Soma vitabu, majarida na magazeti ili kuunda akili yenye nguvu."

Katika ujumbe huu, mwanamke ametengwa. Televisheni ni chombo kinachotumika na jinsia zote mbili. Suala la kuzingatia mwanamume moja kwa moja kwenye ujumbe huu linaweza kufasiriwa kama mbinu ya kumtenga mwanamke katika ushauri ambao ni bora kwa jinsia zote mbili na hivyo tabia hii inamchora @Amerix kama binadamu ambaye hamthamini mwanamke.

@Amerix anaendelea kusema kuwa,

*"Men, when life gets bad, Get hard! When setbacks and hardships punch you hard, it is an opportunity to punch back harder, Don't allow victim mentality to take over, Get up and punch harder. A man becomes better. When things become bad. #MasculinitySaturday"*

"Wanaume, maisha yanapokuwa mabaya, kuwa mgumu! Vikwazo na Magumu yanapokuandama kwa mpigo, ni nafasi yako kujikaza zaidi. Usiruhusu mafikira ya unyonge kukutawala, inuka na ujikaze zaidi. Mwanamume huwa bora zaidi mambo yanapoharibika."

Kwa kawaida, maisha huwa magumu kwa jinsia zote mbili. Kwa kweli, ushauri huu, ungefaa jinsia zote mbili. Tendo la kuuelekeza kwa hadhira ya wanaume kunaonyesha namna anavyomthamini mwanamume katika maandishi yake na hivyo kuna uwezekano kwamba @Amerix anapuuza wanawake. Tunaonelea kwamba, mtazamo wa @Amerix unafaa kuhusisha hadhira ya jamii kwa jumla pasipo kutenga jinsia yoyote kwani majukumu ya jamii, shida zinazokabili binadamu na jinsi ya kutatua matatizo ni jukumu la kila mmoja wetu.

Kuanza taarifa zake kwa kusema, *"Men* (wanaume)*"* na kumalizia kwa *#MasculinitySaturday (Jumamosi ya uume)* kunaonyesha wazi namna anavyochukulia kwa uzito suala la kumwinua mwanamume. Kunaonyesha pia anavyojitia hamnazo kuhusiana na maendeleo ya mwanamke. Tabia ya kulenga wanaume tu kama hadhira yake kunaleta mtazamo uliokitwa kwenye msingi wa fikra za kiume kuwa mazungumzo muhimu yanafaa kuelekezwa kwenye hadhira ya

wanaume na hivyo basi kutenga wanawake na kusababisha kubaguliwa kwao. Wafeministi wamepigania usawa wa kijinsia katika masuala ya kiafya, kisiasa, kijamii na kiuchumi kwa kudai kuwa jinsia zote ni sawa. Kwa maoni yetu, katika utoaji wa ushauri kuhusiana na masuala mbalimbali ya maisha, @Amerix angelenga jinsia zote mbili kuwa hadhira yake.

### Mwanamume kama msingi mkuu na kaida kuu katika jamii

Nadharia ya ubabedume inachukulia amali za kiume na mawazo yao kama kaida za kufuatwa katika jamii nzima (Wamitila, 2003:241). Ubabedume hutazamwa kwa njia zaidi ya moja kama vile: mahusiano ya kijinsia, ukatili, malezi na kadhalika, (Connell, 2005) katika Kibigo (2020:27). @Amerix ameshikilia haya kwa uzito. Mnamo tarehe 26/3/22, alisema,

*"Men, a true man must scatter his seeds. Your scrotum carries 4 generations. Scatter them. If you attend a true man's funeral, you will see newer children being introduced. Why? Because a man does not walk around with one headlamp like a motorcycle. #MasculinitySaturday"*

*"Wanaume, sharti mwanamume wa kweli asambaze mbegu zake. Uzazi wako hueba vizazi vinne. Zisambaze. Unapohudhuria mazishi ya mwanamume wa kweli, utaona watoto wageni wakitambulishwa. Kwa nini? Kwa sababu mwanamume hatembei na taa moja kama pikipiki."*

Ujumbe huu unamhimiza mwanamume kuwa mkware. Kwa kusema kuwa, "…mwanamume wa kweli sharti asambaze mbegu zake," na kuendelea kusema, "…hatembei na taa moja kama pikipiki," ni mbinu ya kumhimiza kuwa mkware. Kwa hivyo, kushauriwa kutotembea na tochi moja ni lugha yenye fumbo. Anaelezwa kuwa anafaa kuwa uhusiano na mwanamke zaidi ya mmoja. Atafanya haya ili kudhihirisha ubabe. Ukware ni moja ya sifa za kiubabedume anazozizungumzia Kibigo (2020:28). Kwa mujibu wa Chiramaoke (2005:141), kiungo cha dhakar kifanye kazi. Kiweze kupenyeza na mwenye uhusiano wa ngono na kimapenzi zaidi ya mwanamke mmoja nje ya ndoa. Kwa hivyo, nadharia hii hufungamanishwa na dhakar au uume na mwenye kuimiliki. @Amerix anaendelea kudokeza,

*"Men, people are not equal and shall never be equal. So, in a relationship, never level the field. Make it as*

*unequal as possible. Remain at the top always. The moment you will try to level the field, she will conquer you,*

*lose interest and dump you. #MasculinitySatuturday.*

"Wanaume, watu si sawa na hawatawahi kuwa sawa. Kwa hivyo, katika mahusiano, usiwahi ruhusu uwanja uwe sawa. Ufanye usiwe sawa kadri ya uwezo wako. Daima kuwa juu. Punde tu utakaporuhusu uwe sawa, mwanamke atakushinda, apoteze hisia zake kwako na akuache."

Katika ujumbe huu, mwanamume anahimizwa kuwa daima juu ya mwanamke katika mahusiano yao. Awe ndiye wa kufuatwa. Hii ni sifa kati ya zingine alizozitaja Kibigo (2020:28), ambazo mwanamume anafaa kuwa nazo ili aweze kujenga na kudumisha ubabe. Sifa hizi ni kama vile: uwezo, kuthubutu, kutoogopa miongoni mwa zingine. @Amerix amemchora mwanamke kama ambaye daima anafaa kuwa chini ya mwanamume na anayehitaji mwongozo wa mwanamume katika kila jambo maishani. Anamwona mwanamke kama aliye daima kwenye ushindani na mwanamume na hivyo sharti adumishwe kwenye hadhi ya chini kuliko mwanamume katika nyanja zote za maisha. Mtazamo wa @Amerix katika ujumbe huu kuhusu wanawake ni kuwa mwanamke ni mjanja na aliyejawa na nia ya kumwondoa, kumharibu na kumtawala mwanamume. Hapa ni anaposema kuwa, "Punde utakaporuhusu uwe sawa, mwanamke atakushinda, apoteze hisia zake kwako na akuache." Kwa maoni yetu, madai haya si ya kweli kwa vile Ufeministi unapigania usawa wa kijinsia na uthamini wa uwezo walio nao wanadamu bila kubagua jinsia. Vilevile, inawezekana kuwa wapo wanaume wengine wanaoweza kuwa na sifa ambazo @Amerix anawapa wanawake ikiwa majukumu yangepinduliwa.

Katika suala la uzazi, @Amerix anashauri ifuatavyo,

*"Men, be in charge of conception. Do not allow your woman to dictate how many babies she wants. Take control of your sperms because it is you who will shoulder the burden of responsibility, NOT her. Let her cry as she wants, but guard your seeds. #MasculinitySaturday"*

"Wanaume, kuwa mdhibiti wa uzazi. Usimruhusu mkeo kutoa uamuzi wa idadi ya watoto ambao angependa. Dhibiti manii yako kwa vile wewe ndiye utakayebeba mzigo wa kuwajibika, SI yeye. Acha alie namna atakavyo, lakini linda mbegu zako.

Ujumbe huu unaonyesha kuwa, mwanamke hana uhuru wa kutoa uamuzi ama maoni katika suala la uzazi na ulezi. Mwanamume anahimizwa kuwa ndiye anayefaa kudhibiti uzazi. Daima, mwanamke awe ndiye anayefuata maoni na maagizo ya mumewe kuhusiana na uzazi. Mwanamke amechorwa pia kama asiye na uwezo wa kiuchumi wa kulea kwa kusema, "…. wewe ndiye utakayebeba mzigo wa kuwajibika, SI yeye." Kwa maoni yetu, kwa kuandika 'SI' kwa herufi kubwa, kunaonyesha ama kusisitiza namna mwanamke anavyodunishwa na kutengwa katika suala la ulezi. Kwa hivyo, mwanamke amechorwa kama chombo cha kuzaa tu huku mwanamume akichorwa kama mwenye kukimu na kutosheleza mahitaji ya familia. Hii ikiwa sifa inayofungamanishwa na ubabedume (Walsh, 1997) katika Kibigo (2020:34). Ifahamike kuwa, katika uzazi, jinsia zote ni sawa kwa vile, mwana haji bila jinsia hizi mbili kujamiiana. Vilevile, mwanamke pia ana uwezo wa kukimu mahitaji ya familia. Momanyi (2002) katika Kimondiu (2019:33), anadai kuwa, wanawake halisi wanatekeleza majukumu mengi muhimu ambayo hubainisha vipawa vyao. Vipawa hivi ni kama vile kukidhi mahitaji ya mume na yale ya watoto kama vile: upishi, usafi, utoaji wosia, na kadhalika, kuajiriwa na kuchangia kukua kwa nchi kiuchumi, uongozi wa kisiasa na kwenye makampuni ya kiserikali, ya kijamii na yale ya kibinafsi

Kutokana na matamshi ya @Amerix, yanavyomhimiza mwanamume kuwa msingi mkuu na kaida kuu katika jamii, tunakubaliana na maoni ya Walsh (1997) katika Kibigo (2020:34) kuwa, mwanamume hazaliwi na uume kama sehemu ya viungo vyake bali hujengwa na kukuzwa na utamaduni anamokulia. Tunaamini kuwa, juhudi za @Amerix za kurejesha ubabedume zinamfanya apuuze majukumu ya wanawake na mchango wao katika jamii.

## Usawiri wa mwanamke

Katika uchambuzi wa jumbe za @Amerix, tumegundua kuwa amemchora mwanamke kwa njia hasi. Anamdunisha kwa njia ya moja kwa moja na kwa njia isiyo ya moja kwa moja. Mogere (2003) anadai kuwa, usawiri wa wahusika wa kike katika fasihi ya Kiswahili una utata mwingi kufikia sasa. Inadaiwa kwamba, wanawake wanasawiriwa kwa njia isiyofaa hasa katika kazi zilizoandikwa na wanaume. Mwanamume anapoandika kazi ya kifasihi, huwaonea wanawake na kuwasawiri wahusika wa kike kwa njia isiyopendeza huku akiwapendelea wahusika wa kiume. Inadhihirika kuwa, @Amerix kama mwanamtandao wa kiume, amemchora mwanamke kwa njia hasi. Katika sehemu hii, tutachunguza jumbe zake kuhusu usawiri wa kijinsia na itikadi katika fasihi kwa mtazamo wa kike, hili likiwa ni moja kati ya malengo ya uhakiki wa kifeministi.

### Kudunishwa kwa mwanamke kwa njia ya moja kwa moja

@Amerix ametumia mbinu hii kumchora mwanamke kama kiumbe duni. Anamweleza mwanamume kuhusu uhasi wa mwanamke kwa uwazi. Hii inadhihirika kutokana na jumbe zifuatazo:

*"Men, it's very easy to con career women, they think their cars, money & stilettos attract men, a sly man with a hired car & a borrowed suit will easily slide into her pants & wallet. Career women are weaker, make wrong choices & unknowingly date thugs. #MasculinitySaturday."*

magari, pesa na viatu vyao vya kuchuchumia huvutia wanaume. Mwanamume mjanja aliyekodisha gari na kuomba suti ataingia kwenye suruali na kibeti chake kwa urahisi. Wanawake kama hawa ni dhaifu, hufanya uamuzi usiofaa na hata kuingia kwenye mahusiano ya kimapenzi na wahuni.

Wanaume, ni rahisi sana kulaghai wanawake wenye kazi. Wao hudhani

Ujumbe huu unaonyesha namna mwanamke aliyejikomboa kiuchumi anavyodunishwa. Ni kweli kusema kuwa, katika ujumbe huu, @Amerix amemchora mwanamke kama mtu mjinga kwa vile hata baada ya ya kujikomboa kiuchumi, ni rahisi kwa mwanamume mjanja na mwenye nia mbaya kupenya kwenye suruali na kibeti chake. @Amerix anamwona mwanamke kama mwepesi wa kulaghaiwa na kudhibitiwa ili atosheleze matamanio ya mwanaume licha ya kiwango chake cha elimu na uwezo wake wa kiuchumi. Kwa upande mwingine, mwanamume amechorwa kama mjanja na mwenye busara ya maisha, mwenye uwezo wa kumtumia mwanamke katika harakati zake za kibinafsi. Kwa hivyo, mwanamke amechorwa kama mwenye elimu ya kazi yake tu bali si ya maisha kwa jumla. Kusema kuwa mwanamume anaweza kulaghai mwanamke kwa suti ya kuomba na gari la kukodisha tu kunaonyesha kuwa mwanamke ni mwepesi wa kudanganywa. Anayeona uzuri wa kitu wa nje tu bali si wa ndani. Ujumbe huu unaonekana kupinga na kukinzana na maoni ya Woolf (1929) katika Kimondiu (2019 :103) anayelipa uzito suala la uchumi katika ukombozi wa mwanamke. Kulingana na Woolf, mwanamke hawezi kupata ukombozi wa aina yoyote kama hajakombolewa kiuchumi. Kwa hivyo, kuchorwa kwa mwanamke afanyaye kazi kama mjinga ni

kumdunisha kwa njia kubwa. Uwezo wa @Amerix kuwa na ushawishi mkubwa kwa wafuasi wake kunawawezesha hasa wale wa kiume kudunisha mwanamke wanapoeleza sifa za mwanamke na hivyo basi hata bila kunuia, kunafanya iwe sawa kwa wanaume kushikilia maono hayo na kumdharau mwanamke. Anaendelea kusema kuwa,

*"Men, don't commit to a church girl, especially if she's above 30 years. Church girls are diabolical, duplicitous & hypocritical. When they pray, they cry so loudly because they regret wasting their 20s kneeling for blowjobs instead of kneeling for God. #MasculinitySaturday."*

"Wanaume, usimpe muda mwingi msichana aliyezamia kanisani hasa akiwa zaidi ya miaka 30. Wasichana walioshikilia kanisa huwa wanafiki. Wanapoomba, hulia kwa sauti kwa sababu wanajutia kupoteza miaka yao ya 20 walipokuwa wakipiga magoti kufanya tendo la ngono badala ya kupigia Mungu magoti.

Ujumbe huu unaonyesha maisha ya mtu wa jinsia ya kike yakiwa mafupi; yanayokitwa na wakati sana. Kwa kusema kuwa anayezidi miaka 30 asipewe muda na mwanamume, ni kuonyesha kuwa ameshapitwa na wakati. Anamfananisha na ua ambalo sifa yake ni urembo lakini hunyauka kwa haraka. Kwa hivyo, mwanamke anaonekana kama asiye na thamani ya kudumu. Vilevile, msichana mcha Mungu anaonekana kama anayetumia sifa hii kulipiza muda wake wa hapo awali aliokuwa akiutumia kujihusisha katika ukware. Ifahamike kuwa, ikiwa alijihusisha katika ukware katika miaka yake ya 20, je, alijihusisha katika tendo hili peke yake? Jinsia ya kiume sharti iwe na mchango katika tendo hili kwa sababu, kwa kawaida, jinsia hizi mbili sharti zitangamane ili tendo hili kufanyika. Kwa hivyo, @Amerix anamwona mwanamume kama asiye na doa na kumhukumu mwanamke anayezidi miaka 30 kwa kuchelewa kuolewa. Asasi kama hizi ndizo Beauvoir (1949) anazoshambulia, zinazomkandamiza mwanamke ambazo ni ndoa na utamaduni. Tunakubaliana na maoni ya mke wa Rais mstaafu wa Taifa la Amerika, Michelle Obama aliyesema, "Wanaume wakakamavu- wanaume ambao ni vielelezo bora vya kweli, hawafai kudunisha wanawake ili kujidhihirisha kama wenye nguvu."

Katika ukuaji wa mwana wa kike, @Amerix anapendekeza,

*Abolish boarding schools for GIRLS. They suppress their feminine instincts, they deny them an opportunity to appreciate masculine dominance, they destroy their natural roles in making the right life choices and damage their emotions. Few parents know this.*

Ondoa shule za bweni za wasichana. Huwa zinadunisha silika zao za kike, zinawanyima nafasi ya kutambua kuwepo kwa uume, zinaharibu majukumu yao ya kiasilia katika kufanya uamuzi bora maishani na kuharibu mihemko yao. Wazazi wachache wanafahamu haya.

Ujumbe huu unaonyesha kuwa @Amerix anamwona mwanamume kama kiumbe muhimu katika ukuaji wa mwana wa kike. Hapa ni anaposema kuwa, shule za bweni za wasichana ziondolewe kwa vile zinawanyima nafasi ya kutambua kuwepo kwa uume. Anaelekea kudai kuwa sharti mwana wa kike akulie kwenye kivuli cha mwanamume kwa sababu kuna 'sifa teule za kike' ambazo anafaa kuzipata kutoka kwa mwanamume anaposema, "…zinaharibu majukumu yao ya kiasilia katika kufanya uamuzi bora..." Kwa kutosema shule za bweni za wavulana ziondolewe, anamdunisha mwanamke kwa vile inadhihirika kuwa, mwana wa kiume anaweza akakua vyema bila kuwepo kwa mwanamke maishani mwake lakini yule wa kike ni duni kwa vile sharti akulie kwenye kivuli cha mwanamume. Kwa hivyo, kwa uwazi, anamwona mwanamke kama atakayekuwa duni ama dhaifu akikulia kwenye mazingira ya kike tu, asiye na uwezo wa 'kujilea' ama hata 'kulea' mwenzake.

## Kudunishwa kwa mwanamke kwa njia isiyo ya moja kwa moja

@Amerix ametumia mbinu hii kumchora mwanamke kwa njia hasi. Ni mbinu isiyotumia uwazi kueleza uhasi wa mwanamke. Kwa mfano, kwenye suala la malezi, @Amerix anasema

*"Men, detach your son from his mother as early as possible, send him to go play with other boys, let him learn to fight there, let him learn team-building there, let him learn creativity there, do not allow him to cling to his mother. Raise a son! #MasculinitySaturday"*

"Wanaume, mtenganishe mwanao wa kiume na mamake mapema iwezekanavyo. Mtume akacheze na wanaume wenzake, wacha akajue kupigana na ufanyaji kazi kama kundi moja, apate kuwa mbunifu, usimruhusu kukaa na mamake. Lea mwana wa kiume!"

Ujumbe huu, hauonyeshi udhaifu wa mwanamke kwa uwazi lakini kutokana na uchambuzi wa ndani, inadhihirika kuwa, mwanamke anasawiriwa kama asiye na uwezo wa kulea mwana wa kiume ingawaje yeye ndiye aliyemzaa. Kwa mwana wa kiume akaaye na mamake sana, inakisiwa kuwa atakua na vitabia visivyo vya kiume, hatakuwa mwanamume. Inaonekana kuwa mwana wa kiume anapokua na vitabia visivyo vya kiume, mwanamke ndiye atakayesingiziwa.

@Amerix anaendelea kudokeza,

*"Men, a father is an important pillar in the life of a woman. If a woman grew up without a father, it becomes disastrous for her. A father is a woman's first boyfriend. Before you date, find out her relationship with her father. Save yourself from chaos. #MasculinitySaturday*

Wanaume, baba ni mnara muhimu katika maisha ya mwanamke. Ikiwa mwanamke alikua bila baba, atapata changamoto. Baba ni mpenzi wake wa kwanza. Kabla ya kuingia kwenye mahusiano na msichana, chunguza kuhusu uhusiano wake na babake. Jiokoe kutokana na vurugu.

Jumbe hizi zinaonyesha kudunishwa kwa mwanamke katika suala la malezi. Anaonekana kuwa asiye na mchango mkubwa katika kukua kwa mtoto. Kwa kusema kuwa, "Jiokoe kutokana na vurugu," inaonyesha kuwa mwana asiyekua bila baba mwishowe huwa mtu asiyetoshea katika jamii kwa kukosa maadili fulani ambayo ni mzazi wa kiume tu ambaye anaweza kumfunza mwana katika kukua kwake. Maoni ya @Amerix yanakinzana na ya Kasiva (2019, uk.52), anayemsawiri mwanamke kama mlezi mwema katika uchambuzi wake wa usawiri wa mwanamke katika nyimbo za sifo za Kikamba. Anamwona mwanamke kama anayehakikisha watoto wake na mumewe wamepata lishe. Watoto kumlilia mama ni dhihirisho tosha kuwa mama ni muhimu katika malezi ya mtoto. Kasiva anaendelea kusema kuwa, tendo la bwana kumrai mke wake arudi nyumbani wanapokosana ni dhihirisho tosha kuwa mama ni mnara muhimu katika familia. Kwa hivyo, kwa maoni yetu, mwanamke aheshimiwe katika familia. Ijulikane kuwa ana mchango mkubwa katika kukua kwa watoto.

@Amerix anaongezea maongezi yake kwa kusema,

*Men, do not take relationship advice from women. You will burn your fingers.*

*Whether she is a 'professional marriage counsellor' or an 'experienced wife.' A*

*gazelle does not teach a lion how, when, why and where to hunt. #MasculinitySaturday*

Wanaume, msipokee ushauri unaohusiana na mahusiano ya kimapenzi kutoka kwa

wanawake. Mtachoma vidole vyenu. Awe ni 'mtaalam wa kutoa ushauri wa ndoa' ama 'mke mwenye tajriba', msikubali. Paa hamfunzi simba njia ya, lini, kwa nini na mahali pa kuwindia.

Ujumbe huu kwa njia isiyo wazi, unamsawiri mwanamke kama kiumbe dhaifu hasa kwa kumlinganisha na paa huku ukilinganisha mwanamume na simba. Vilevile, mwanamke anaonekana kama kisababishi cha madhara yanayomfanyikia mwanamume kwa kusema, "…mtachoma vidole vyenu." Hapa ni baada ya kupokea ushauri kutoka kwa mwanamke. Kando na hayo, mwanamke msomi na mwenye tajriba anadunishwa kwa kutopewa nafasi ya kuitumia tajriba yake @Amerix anaposema, "…awe ni mtaalam wa kutoa ushauri wa ndoa' ama mwenye 'tajriba', msipokee ushauri."

Wamitila (2002) anadai kuwa, usawiri mzuri wa wahusika hufanya wasomaji wajitambulishe nao kwa kuhisi wanavyohisi na kuwaza wanavyowaza. Kwa maoni yetu usawiri hasi wa mwanamke unaifanya hadhira kuwa na itikadi potovu kwake. Ni vyema kuonyesha sifa zake chanya. Kama Momanyi (2002) katika Kimondiu (2019:33) anavyodai, fasihi ya Kiswahili haina budi kushughulikia namna ambavyo mwanamke anaweza kuigwa kutokana na uwezo wake. Ni vyema kudhihirisha sifa zao pasi kudidimizwa kwa ule uwezo wao wa kimaumbile. Mwana wa kifalme Harry, (*Prince Harry*) anadai kuwa, "Tunajua kuwa wanawake wanapoinuliwa, huboresha maisha ya kila mtu katika mazingira yao, familia zao, jamii zao na nchi zao kwa njia isiyomithilika," haya ni maoni ambayo tunakubaliana nayo.

## @Amerix kama mwasi

Mwasi ni mtu mwenye tabia ya kuvunja sheria au kutotaka kufuata amri (TUKI, 2004: 294). Katika muktadha huu, tumemchora @Amerix kama anayepinga masuala fulani ya kijinsia katika jamii, anayetupilia mbali suala la usawa wa kijinsia ambao umepiganiwa na wafeministi na kufanikiwa kwa kiwango fulani. @Amerix anadai kuwa,

*"A woman must respect her husband. She must respect the man that gave her motherhood. She has no choice. If she*

*becomes disrespectful & disdainful, she will join the slippery road to misfortune,*

*loneliness and misery. Things won't work out for her, forever. #BetterTogether"*

"Mwanamke sharti amheshimu mumewe. Sharti aheshimu mwanamume aliyemfanya mama, hana chaguo. Mwanamke anapokosa heshima, atafuata njia inayomwelekeza katika kutofanikiwa, upweke na shida. Hatafanikiwa katika matendo yake, milele."

Hapa, mwanamke anaonekana kuwa daima anafaa kuwa chini ya mwanamume kihadhi. Mwanamume anaonekana kama anayestahiki heshima kutoka kwa mwanamke. Ulimwengu nao unaonekana kama wenye uwezo wa 'kumwadhibu' mwanamke asiyemheshimu mumewe @Amerix anaposema kuwa, "...anapokosa heshima, atafuata njia inayomwelekeza katika kutofanikiwa..." Usawa wa kijinsia umepiganiwa kwa muda mrefu na wafeministi katika nyanja za familia, dini, siasa uchumi, jamii na kadhalika na kufanikiwa kwa kiwango fulani. Mwanamke anastahiki heshima pia kutoka kwa mumewe kwa kumfanya baba kama yeye alivyofanywa mama. Wote wana mchango sawa katika uzazi. Kwa hivyo, matamshi ya @Amerix yanamsawiri kama anayepinga usawa wa kijinsia kwa kutoonyesha kuwa heshima ina uwili. Kunafaa kuwa na heshima kati ya jinsia zote mbili katika ndoa tofauti na anavyoisawiri ndoa kwa kuonyesha kuwa mwanamume anamfanyia mwanamke neema. La kweli ni kuwa maongezi yake yameelekezwa kwa mwanamume kwa njia inayomhimiza kumdunisha mwanamke.

Katika suala la dini, @Amerix anasema,

*"Men, still on religion, your woman must join your religion, she should abandon her denomination for your denomination, if you go to your church while she goes to her church, you are an idiot! Or, if you are also going to her church, you are pussified! #MasculinitySaturday"*

Wanaume, bado katika dini, mke wako sharti ajiunge na dini yako, aliwache dhehebu lake aje lako. Ukienda kanisa lako huku akienda lake, wewe ni mjinga! Ama ikiwa unaenda kanisa lake, unaongozwa na uke!

Ujumbe huu unamhimiza mwanamume kuwa ndiye kiongozi wa familia na kumkashifu vikali anayefuata mienendo ya mkewe kwa kumwita "mjinga" na kumwambia kuwa anaongozwa na uke. Mwanamke anachorwa kwa chombo

kinachoweza kulainishwa ili kuoana na matakwa ya mumewe. Katiba ya Kenya inampa kila mwananchi uhuru wa kidini. Uhuru wa kufuata dini aipendayo na kwenda dhehebu apendalo. @Amerix kusema kuwa sharti mwanamke ajiunge na dhehebu la mumewe kunaonyesha kuwa anapinga uhuru wa kidini walio nao Wakenya. Kwa hivyo, anaonekana kama anayedhoofisha maendeleo ambayo yalikuwa yashapatikana katika kuumbua mifumo ya kiubabedume.

Kwa kuwa na maoni yanayokinzana na utamaduni, anaendelea kuonekana kama mwasi anaposema,

*Men, when your woman gives birth, make sure it is you giving a name to your baby. Your baby must own your name or the name of your ancestry. Then keep the birth certificate in your custody. Never give away this power and privilege to her.* #MasculinitySaturday

Wanaume, mkeo anapojifungua, hakikisha kuwa wewe ndiye unayempa mtoto jina. Sharti mwanao amiliki jina lako ama la ukoo wako. Kisha weka cheti chake. Usimpe mwanamke uwezo na neema hii.

Kwa kumnyima mwanamke haki ya kumpa mwana jina na kuweka cheti chake cha kuzaliwa, mwanamke anaonekana kama asiye na haki ya kummiliki mtoto. Kwa kupinga mwana asipewe jina la ukoo wa kina mwanamke, @Amerix anaonekana kuwa mwasi. Kwa kawaida, jamii nyingi za Kiafrika wana hupewa majina kutoka koo zote mbili. Kwa mfano mwana wa kiume na kike wa kwanza hupewa jina la ukoo wa kina mwanamume huku wa pili wakipewa la ukoo wa kina mwanamke. Mfano ni katika jamii ya Wakikuyu.

Katika suala la utamaduni tu, anazidi kusema,

*Men, avoid a wedding as much as possible, the ring is a symbol of imprisonment. A wedding is a covenant you make with the Government. Break the covenant and face the Government in court.* #MasculinitySaturday

Wanaume, jiepushe na harusi kadri ya uwezo wako, pete ni ishara ya kifungo. Harusi ni agano kati yako na serikali. Vunja agano hilo na ukabiliane na serikali kortini.

Tangu enzi za mababu zetu, harusi imekuwa ni sherehe inayounganisha mke na mume nayo pete ikiwa ni ishara ya muungano huu. Serikali pia hutambua jukumu la harusi. Ingawaje si

lazima kwa mke na mume kuwa na sherehe hii wanapoamua kuoana, tendo la @Amerix kupinga harusi linaonyesha namna anavyokinzana na utamaduni. Kwa hivyo, ingawaje @Amerix anamhimiza mwanamume kuwa na ubabe, anajitokeza kama mwasi kwa kuwa na maoni yanayokinzana na utamaduni. Inawezekana msomi kumwona @Amerix kama mwenye maoni potovu ambayo yanaweza kuelekeza wanajamii kutenda isivyofaa na mwishowe kuangamia.

Uelekezaji wa usemaji wake kwa wanaume kwa njia inayowahimiza kudunisha wanawake ni ushahidi tosha kuwa anatumia mtandao wa kijamii kwa njia chanya na hivyo basi kustahiki kuitwa 'mwanamtandao mwasi'.

## HITIMISHO

Makala hii imeonyesha mtandao wa kijamii ikijikita katika X, kama kipera ibuka cha fasihi. Imeonyesha uhuru alio nao mtumizi wa mtandao huu wa kutoa habari, mawazo, mihemko na hata matamanio yake. Tunaamini kuwa ni kipera ibuka cha fasihi kwa vile kina sifa ya kifasihi ambayo ni matumizi ya lugha kwa usanii na kuwasilisha suala fulani kwa njia inayoathiri, kugusa na kuacha athari fulani kwenye hadhira (Wamitila, 2003: 42). Ni kutokana na uhuru huu, ambapo @Amerix amechukua fursa hii na kutumia jukwaa hili la mtandao wa kijamii kushughulikia suala la mahusiano ya kijinsia. Kutokana na uchambuzi wetu wa jumbe zake, inadhihirika kuwa ni mwenye taasubi ya kiume kutokana na anavyotetea masuala ya kiume na kutowacha shauku yoyote katika mawazo ya msomaji kuwa amejawa na masuala ya kiume yenye mapendeleo na yanayobagua wanawake. Anapozungumzia wanawake, ni kwa njia hasi inayowadunisha na kuonyesha kuwa daima mwanamke anafaa kuwa chini ya mwanamume kihadhi katika nyanja zote za maisha. Kutenga siku ya Jumamosi *'#MasculinitySaturday'* *(Jumamosi ya uume)* ili kuwashauri wanaume na kuanza jumbe zake kwa kusema, *"Men"* (Wanaume) kunadhihirisha namna anavyopendelea jinsia ya kiume. Vilevile, anaonekana kuwa 'mwasi' kwa vile anapinga maendeleo ambayo yalikuwa yashapatikana katika kuleta usawa wa mahusiano ya kijinsia na hata kupinga tamaduni ambazo zimekuwepo. Vilevile, anapinga jukwaa lolote lenye uwezo wa kuleta usawa wa kijinsia na hata kuona kuwa mwelekeo huu utamfanya mwanamume kuwa na tabia za kike. Matokeo ya uchambuzi wetu yamepatikana baada ya kuchambua jumbe za @Amerix kwa kutathmini usawiri wa mwanamke,

kutathmini mahusiano ya kimamlaka katika misingi ya kijinsia na kuonyesha kiwango cha ama umbali ambao mfumo dume umesonga na hata kujibu swali la ikiwa wanawake na wanaume ni tofauti kwa sababu za Kibayolojia ama tofauti zao zinatokana na maoni ya jamii, haya yakiwa ni kati ya majukumu ya uhakiki wa kifeministi kwa mujibu wa Barry (2009, uk.128). Tunaunga mkono maoni ya Joss Whedon kuhusiana na usawa wa kijinsia kuwa, "Usawa si dhana. Si jambo ambalo tunafaa kung'ang'ania kupata. Usawa ni kama mvutano. Tunafaa kusimama katika dunia hii kama wanaume na wanawake na udunishaji wa mwanamke uliopo katika kila jamii si sehemu ya kweli ya hali ya mwanadamu." Kutokana na utafiti huu, tunapendekeza watafiti wengine wachunguze majukwaa mengine ya mtandao wa kijamii yanavyoshughulikia suala la jinsia, uana na ngono. Aidha, wanaweza kuchunguza masuala ya wanawake tofauti na sisi tulioshughulikia kukwezwa kwa wanaume. Vilevile, wanaweza kutoa suluhu la suala la udunishaji wa jinsia moja.

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The Relevance of Indigenous Languages in Education for Sustainable Development.

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## Abstract

The purpose of this study is to explore the role that can be played by indigenous language education in the attainment of the United Nations Sustainable Development Goals (SDGs). Thus, it focuses on the potential benefits, barriers, and strategies of integrating indigenous languages into the educational system to support sustainable development. A qualitative research design is adopted for the research. The researcher used the narrative review method which involves summarizing and synthesizing extant literature on a particular research question in a narrative format to gain insights and make conclusions. The research finds that one key aspect of achieving Sustainable Development Goals is the recognition and promotion of indigenous languages in education. Indigenous languages are a critical component of cultural heritage, and are key to preserving indigenous knowledge, practices, and values. Thus, incorporating indigenous languages into education can help to promote cultural diversity, social inclusion, and environmental sustainability. Indigenous languages offer unique perspectives on the natural world and traditional ecological knowledge, which can contribute to sustainable resource management and environmental conservation. By integrating indigenous languages into educational curricula, teachers can promote greater understanding of traditional ecological knowledge and the importance of biodiversity. However, the use of indigenous languages in education is often limited due to unfavorable language policies, lack of resources, and the marginalization of indigenous communities. In conclusion, addressing these challenges and promoting the use of indigenous languages in education as a means of achieving the SDGs is important.

**Key words**: *Education, indigenous languages, indigenous knowledge, communication, knowledge management, sustainable development*

## INTRODUCTION

The United Nations Sustainable Development Goals (SDGs) are a set of 17 goals adopted in 2015 by UN member states to end poverty, protect the planet, and ensure prosperity for all. One of the key goals of the SDGs is to ensure inclusive and equitable quality education for all, which is essential for achieving sustainable development. The SDGs recognize that education is not only a fundamental human right but also a driver of economic growth and social development. To achieve this goal, the SDGs call for the provision of quality education at all levels, from early childhood to tertiary education, that is accessible, affordable, and equitable for all. This includes ensuring that all learners have the necessary knowledge and skills to thrive in today's rapidly

changing world, and that they are empowered to contribute to sustainable development in their communities and beyond.

## Background

Recognizing and promoting indigenous languages in education is crucial for achieving the goal of inclusive and equitable quality education for all. Indigenous languages are a critical component of cultural heritage and play a vital role in preserving indigenous knowledge, practices, and values (Smith, 1999). They offer unique perspectives on the natural world and traditional ecological knowledge that can contribute to sustainable resource management and environmental conservation. Skutnabb-Kangas (2000:1) highlights that "Linguistic and cultural diversity on the one hand and biodiversity on the other hand are correlated - where one type is high, the other one is too, and vice versa". Incorporating indigenous languages into educational curricula can promote cultural diversity, social inclusion, and environmental sustainability, as well as help to foster a greater understanding and appreciation of the histories and cultures of indigenous peoples.

Moreover, language is a key factor in building strong relationships between individuals and communities, and in facilitating communication and collaboration. By promoting the use of indigenous languages in education, communities can strengthen their social networks, enhance cultural identity, and foster sustainable development through collective action. Skutnabb-Kangas (2000) notes that the disregard for indigenous languages in education is not only a cultural tragedy, but it is also a form of genocide. Indigenous languages can also help to improve educational outcomes for Indigenous learners by ensuring that they have access to culturally relevant and responsive education that reflects their unique perspectives and experiences.

According to Salimi (2019) language and culture are two sides of the same coin and they both shape the identity of a person and form their perspective. As a distinctly human phenomenon, language is central to the collective advancement of communities by leveraging knowledge sharing and creation of new knowledge. According to Ondondo (2020) the language, knowledge, and know-how of indigenous people, which is deeply rooted in their relationship with nature and community, has proven to be efficient in responding to some of these challenges including environmental degradation.

However, the use of indigenous languages in many African jurisdictions in education is often limited due to language policies, lack of resources, and the marginalization of indigenous

communities. Tikly (2016) warns that, "…it is alarming that language-in-education policy is so often at the periphery of global debates about the quality of education at a time when learning for all is a key part of the educational component of the Sustainable Development Goals." It is important to address these challenges and promote the use of indigenous languages in education as a means of achieving the SDGs.

After this brief introduction, the paper addresses how incorporating indigenous languages into education can promote cultural diversity, social inclusion, environmental sustainability, and economic development, the third section discusses the connection between indigenous language education and aspects of sustainable development, the next section identifies problems bedeviling the use of indigenous languages in education and lastly, the concluding section summarizes the salient points raised in the paper.

## Problem statement

Despite the growing recognition of the importance of sustainability and the need to promote it in educational systems, indigenous languages are often overlooked in this context. This is concerning given that indigenous languages play a critical role in preserving traditional knowledge, cultural practices, and ecological wisdom that are essential for sustainable development. The lack of attention paid to indigenous languages in education can contribute to the erosion of cultural diversity, the loss of traditional knowledge, and the degradation of the natural environment. Therefore, there is a need to explore the relevance of indigenous languages in education for sustainable development and identify strategies to promote their integration into educational systems.

## Research objectives

The paper examined the role of indigenous languages in preserving traditional knowledge, cultural practices, and ecological wisdom that are essential for sustainable development; explored the potential benefits of integrating indigenous languages into educational systems for sustainable development, including the preservation of cultural diversity and the promotion of ecological sustainability; identified and interogated best practices and strategies for integrating indigenous languages into educational systems for sustainable development, including approaches to curriculum design, teacher training, and community engagement; and assessed the challenges and barriers to integrating indigenous languages into educational systems for sustainable development and identify potential solutions to these challenges.

## Scope

The study carried out a comprehensive examination of the issue of integrating indigenous languages into educational systems for sustainable development. This involved examining the role that indigenous languages play in preserving traditional knowledge, cultural practices, and ecological wisdom, as well as investigating the extent to which they are currently integrated into educational systems and identifying the factors that contribute to their neglect.

The study also explored the potential benefits of integrating indigenous languages into educational systems, including the preservation of cultural diversity and the promotion of ecological sustainability. The challenges and barriers were assessed integrating indigenous languages into educational systems and identify potential solutions to these challenges. The study would be focused on the intersection of indigenous languages, education, and sustainable development, with a particular emphasis on identifying practical solutions that can be implemented in educational settings.

## LITERATURE REVIEW

### Cultural diversity

Incorporating indigenous languages into education can promote cultural diversity, social inclusion, environmental and economic sustainability in several ways.

By recognizing and promoting the use of indigenous languages in education, we can acknowledge and celebrate the diversity of cultures and ways of life that exist within our societies. This helps to foster a sense of respect for cultural differences and promotes intercultural dialogue and understanding (Hinton, 1994). Skutnabb-Kangas (2000) views cultural diversity, which is maintained by linguistic diversity as important as biodiversity in the context of human survival. Her views are not perplexing by any measure because all knowledge is stored and shared through language in a cultural context. Promoting indigenous languages in education also ensures that Indigenous peoples are not excluded or marginalized within mainstream education systems, which in turn contributes to social exclusion and discrimination.

Furthermore, indigenous language education can make a significant contribution to promoting cultural diversity by supporting the preservation and transmission of indigenous knowledge. According to Hikwa and Maisiri (2020) by preserving indigenous languages, a country

preserves its intangible heritage while maintaining the diversity of its knowledge base. Development in almost all spheres of life draws on multiple sources of knowledge, including indigenous knowledge, to make advancements that improve the people's quality of life. Indigenous knowledge is thus an integral tool for development and advancement of communities. The use of indigenous languages in education ensures the preservation of indigenous knowledge.

## Social inclusion

SDGs aim for inclusive development that leaves no one behind. Social exclusion of indigenous communities is one of the foremost impediments to achieving SDGs. Van der Stoel (1997: 153) warned that "...in the course of my work, it had become more and more obvious to me that education is an extremely important element for the preservation and the deepening of the identity of persons belonging to a national minority. It is of course also clear that education in the language of the minority is of vital importance for such a minority." De Varennes and Kuzborska (2016) concur, and they posit that language has a tremendously important role as both gatekeeper and doorway. While social inclusion is the process of ensuring that all individuals and groups in society have access to the resources, opportunities, and services that they need to fully participate in society. Education plays a critical role in its realisation by creating a society where all people are valued and respected, regardless of their background or circumstances, and where everyone has the chance to reach their full potential. Provision of education that provides for the linguistic preferences of indigenous communities has been shown to improve student retention and success in schools. It involves removing barriers to participation and creating a more equitable society. This can include addressing issues such as poverty, discrimination, and social exclusion, and ensuring that everyone has access to education, healthcare, employment, housing, and other essential services. Social inclusion is important because it helps to promote social cohesion, reduce inequality, and create a more just and sustainable society.

## Environmental sustainability

Also, incorporating indigenous languages into education can help to preserve and transmit traditional ecological knowledge, which is often embedded in indigenous languages. If indigenous languages are not maintained, vast knowledge of plants held by farmers, local knowledge of medicinal plants and systems, as well as the plants themselves could become extinct within one or two generations (Thrupp, 1999; Christie & Moonie, 1999). Traditional

ecological knowledge encompasses the knowledge, practices, and beliefs that indigenous peoples have developed over generations to manage and sustainably use natural resources. By integrating indigenous languages into educational curricula, we can help to ensure that this knowledge is passed on to future generations, contributing to environmental sustainability and the preservation of biodiversity.

Indigenous languages offer unique perspectives on the natural world and traditional ecological knowledge that can contribute to sustainable resource management and environmental conservation in several ways. They often contain a wealth of knowledge about local ecosystems and the biodiversity that exists within them. This knowledge is embedded in the language itself, reflecting the close relationship that indigenous peoples have with the natural world. For example, some indigenous languages have specific terms for different types of plants, animals, and natural phenomena, which reflect the unique characteristics and uses of these resources. By incorporating indigenous languages into educational curricula, countries ensure that this knowledge is passed on to future generations, contributing to sustainable resource management and environmental conservation.

Through their languages, indigenous communities reflect a deep understanding of the interconnectedness of all living beings and the importance of maintaining balance and harmony within ecosystems. This knowledge can help to inform sustainable resource management practices that are based on principles of reciprocity and respect for the natural world. For example, some indigenous communities have developed traditional practices of hunting, fishing, and farming that are based on principles of sustainability and long-term resource management. By incorporating indigenous languages into educational curricula, we can help to ensure that these practices are preserved and passed on to future generations.

### Economic development

Finally, language-in-education policy draws attention to the continuing hegemony of colonial languages in the context of contemporary globalization and the marginalization and under-development of indigenous languages (Tikly, 2016). Participation in the national and global economy has for a long time been coupled with competence in dominant, colonial languages. The marginalisation of indigenous languages on many levels has mirrored the exclusion of indigenous communities. However,

### MATERIALS AND METHODS

## Research design

A combination of qualitative and quantitative methods was employed, including surveys, interviews, and case studies, to gather data from a range of stakeholders, including teachers, students, community members, and policymakers. Qualitative research is adapted for exploring and understanding complex social phenomena such as education and sustainable development. The study uses the narrative review approach which involves summarizing and synthesizing the existing literature on a particular topic or research question in a narrative format (Atkins & Wallace, 2012). This approach is particularly useful in exploratory research of this nature where the goal is to broadly understand the relevance of the incorporation of indigenous languages in education to support the attainment of Sustainable Development Goals.

## Data collection

Data for this research study was collected systematically through a rigorous process of identifying, selecting, and synthesizing relevant studies on the topic of education and sustainable development. The main steps involved in data collection were searching for relevant studies from various online scholarly sources, such as databases, journals, books, reports, and websites. This was followed by extracting and summarizing the key information from each study.

## Data analysis

The study utilized a thematic analysis approach for processing the research data. Thematic analysis is a qualitative method that involves identifying and analyzing patterns or themes in a set of data. The study focused on the benefits and challenges of incorporating indigenous languages in education for sustainable development.

## RESULTS AND DISCUSSION

### Benefits of integrating indigenous languages into Education for Sustainable Development

The analysis of literature reveals that the use of indigenous languages in education is an indisputable asset for achieving quality and inclusive education for all. However, its implementation is often limited by a range of challenges, including language policies, lack of resources, and the marginalization of indigenous communities.

*Sustaining cultural diversity*

One of the key aspects of Education for Sustainable Development (ESD) is to respect and value cultural diversity and local knowledge, including indigenous languages. Indigenous languages are not only a means of communication, but also a source of identity, culture, history, worldview, and wisdom. They embody the collective memory and experience of a people and provide insights into their relationship with nature and their environment. It has been shown that there is a positive relationship between cultural and linguistic diversity on one hand, and biodiversity on the other.

*Responsiveness to needs of learners*

ESD endeavors to respond to the global need for advancing the cause of the attainment of SDGs. The integration of indigenous languages in the education system responds to the linguistic preferences of learners. It can also enhance the quality and relevance of education by making it more responsive to the needs, interests and aspirations of learners and communities. Marginalized communities are likely to respond positively to new systems when they incorporate elements of their language and culture. The success of the overarching goal of providing quality and inclusive education for all may hinge on attuning the curriculum and its delivery to responsively address the needs of communities.

*Fosters intercultural dialogue*

ESD fosters intercultural dialogue and mutual understanding among different groups and promote respect for human rights and diversity. Unity in diversity is an integral element of sustainability and world peace. An education system that recognizes different cultures promotes diversity and encourages dialogue among different cultures throughout society.

*Promotes social cohesion*

The recognition of indigenous languages in education may play a crucial role in maintaining social cohesion, peace, and stability by fostering respect for diversity, human rights, and democratic values. By demonstrating that less developed, minority or marginalised languages have value in the generation and transmission of knowledge, communities appreciate the value of every member of society and accept their cultural values as equal to their own. Moreover, appreciation of diversity serves to dispel myths and unwarranted stereotypes held by one group against the other through education and dialogue.

*Preservation of indigenous cultures*

The integration of indigenous languages into education curricular improves the preservation and revitalization of indigenous languages and cultures, which are often endangered or marginalized by dominant languages and cultures. It can also strengthen the sense of identity and belonging of indigenous peoples and empower them to participate in decision-making processes that affect their lives.

*Creates decent jobs*

At the societal level, ESD can support the transition to a green and circular economy that reduces environmental impacts, creates decent jobs, and improves resource efficiency. Education is a key enabler of social mobility especially for indigenous communities from marginalised backgrounds. Improved accessibility of education through the integration of indigenous languages thus provides opportunities for future decent jobs, awareness of the imperative to manage resources and avoid excessive environmental impact.

*Foster entrepreneurship, innovation, and creativity*

ESD can also foster entrepreneurship, innovation, and creativity, which are essential for economic growth and competitiveness. Drawing on the indigenous knowledge systems of environmental protection, food production among others, innovations and new businesses may emerge as members of communities begin to leverage their education and indigenous knowledge for sustainable development.

Incorporating indigenous languages in education for sustainable development can have positive impacts on the cognitive, social, cultural, economic, and environmental dimensions of learning. It can also support the achievement of the Sustainable Development Goals (SDGs), which call for inclusive and equitable quality education, cultural diversity and intercultural understanding, and the protection of the planet and its natural resources.

**Challenges encountered in integrating indigenous languages into education for sustainable development.**

*Language policies*

Many countries have language policies that prioritize the use of a dominant or official language in education, often at the expense of indigenous languages. This can make it difficult for

indigenous communities to use their languages in educational contexts, particularly if they are not recognized or supported by the state.

*Lack of resources*

Indigenous languages are often under-resourced in terms of teaching materials, teacher training, and infrastructure. This can make it difficult for indigenous communities to develop and implement effective educational programs that incorporate their languages.

*Marginalization of Indigenous communities*

Indigenous communities are often marginalized and disadvantaged within wider societies, which can make it difficult for them to access education in their own languages. Discrimination, poverty, and social exclusion can all contribute to the marginalization of indigenous communities and limit their opportunities for educational success.

*Attitudes towards Indigenous languages*

Negative attitudes towards indigenous languages, including beliefs that they are primitive or inferior, can also pose a significant barrier to their use in education. These attitudes can be held by both non-indigenous and indigenous people, non-educated and educated folk, and can contribute to a lack of support for their use in educational contexts. This is especially true during this era where knowledge generation, technological innovation and business has been dominated by a few hegemonic languages.

*Lack of political will*

Finally, a lack of political will or commitment to supporting the use of indigenous languages in education can also be a significant challenge. This can be due to a range of factors, including political instability, competing priorities, and a lack of recognition of the importance of indigenous languages in advancing sustainable development.

To address these challenges, it is important to develop policies and programs that recognize and support the use of indigenous languages in education, and to work towards creating more inclusive and equitable societies that value cultural diversity and indigenous knowledge.

**Discussion**

This study set out to highlight the relevance of indigenous languages in the implementation of Education for Sustainable development. Findings reveal that when integrated into the education system, indigenous languages had several benefits which include maintenance of cultural diversity and promoting environmental sustainability through preservation of indigenous knowledge. The study also established a myriad of challenges that bedevil the use of indigenous languages in education. Nevertheless, these challenges are surmountable, and the study notes several avenues for alleviating the same.ESD advocates for inclusivity and quality education for all regardless of cultural background or economic status. The study establishes a positive connection between the use of indigenous languages in education and the sustenance of cultural diversity. Moreover, language is a source of identity, culture, history, worldview, and wisdom. Thus, indigenous languages in education would ensure the preservation of critical knowledge drawn from various indigenous communities for the benefit of the entire world, whose survival may hinge on such knowledge.

While education aims to impart knowledge, the study further acknowledges that such knowledge must be relevant to the needs of the learners. The United Nations Education Science and Culture Organisation (UNESCO) recognises the centrality of mother tongue instruction especially at the early stages of education. The study finds that the incorporation of linguistic preferences of the learners as a facet of responsiveness to learner needs serves an integral purpose. It heightens the relevance of education and promotes positive attitudes towards education which in turn enables wider coverage as envisaged in the SDGs.

Intercultural dialogue and social cohesion are important in the sustainability matrix. Collaboration among cultures united under the banner of humanity fosters peace and stability which are backbones of sustainability. This research underscores the importance of indigenous languages in the education system to social inclusion, cohesion, and intercultural mutual understanding.

Improved accessibility to education through the integration of indigenous languages provides opportunities for future decent jobs, awareness of the imperative to manage resources and avoid excessive environmental impact. Polities that recognize the rights of indigenous communities to access education in their languages are likely to achieve higher education coverage particularly for marginalized groups. Higher educational coverage predicates a better chance of achieving sustainable development.

Although the study identifies several benefits of incorporating indigenous languages in education for sustainable development, it notes a few challenges. Language policies in Africa for instance, largely remain colonial in outlook serve for a few polities, with the colonial language dominating all the high function domains of government, business, and education. This scenario has encumbered the development of many indigenous languages to attain enough materials to be meaningfully used in formalized domains such us education. The lack of materials is itself a separate barrier albeit one that is perpetuated by the policy environment which continues to favor the so-called dominant languages like English and French. The situation is often compounded by the lack of political will to recognize indigenous languages in high status domains. The tacit link between language and ethnicity especially in Africa means that recognising linguistic diversity may militate against the nationalist goals of nation building. In some cases, however, indigenous communities themselves exhibit negative attitudes towards their languages which limits the success of implementing education in those languages. In the ensuing section, we deal briefly with strategies for overcoming some of the challenges identified above.

## CONCLUSION AND RECOMMENDATIONS

The paper offers a concise outline of the salient issues pertaining the importance of recognizing and promoting indigenous languages in education as a means of achieving the SDGs. It identified and discussed several benefits linked to the use of indigenous languages for the advancement of sustainable development. The study also identified challenges that have largely impeded the recognition and promotion of indigenous languages in education for sustainable development.

**Strategies for promoting the use of indigenous languages in education as a means of achieving the SDGs.**

There are several strategies that can be employed to address the challenges of lack of resources, lack of political will, and negative attitudes towards indigenous languages, and to promote the use of these languages in education as a means of achieving the SDGs. Some of these strategies include:

*Advocacy and awareness-raising*: Raising awareness of the importance of indigenous languages for sustainable development and promoting their use in education can be an effective strategy for addressing negative attitudes and lack of political will. Advocacy can involve engaging with

policymakers, educators, and the wider community to promote the value of indigenous languages and the benefits of incorporating them into educational curricula.

*Capacity-building*: Building the capacity of Indigenous communities, educators, and policymakers to develop and implement effective educational programs that incorporate indigenous languages is critical for promoting their use in education. Capacity-building can include providing training and support for language teachers, developing teaching materials and resources, and investing in infrastructure and technology to support language learning.

*Community-led initiatives*: Community-led initiatives that prioritize the use of indigenous languages in education can be an effective way of promoting their use and ensuring that they are grounded in local contexts and cultures. Such initiatives can involve engaging with Indigenous communities to develop educational programs that reflect their unique perspectives and experiences, and that are designed to meet their specific educational needs.

*Collaboration and partnership-building*: Collaboration and partnerships between Indigenous communities, educators, policymakers, and other stakeholders can be an effective way of addressing the challenges of lack of resources and political will. Collaborative efforts can involve sharing resources, expertise, and knowledge, and working together to develop and implement effective strategies for promoting the use of indigenous languages in education.

*Policy and legal frameworks*: Developing policy and legal frameworks that recognize and support the use of indigenous languages in education is critical for promoting their use and ensuring that they are protected and valued. Such frameworks can include language policies, legislation, and regulations that prioritize the use of indigenous languages in education, and that provide resources and support for their development and implementation.

By and large, promoting the use of indigenous languages in education as a means of achieving the SDGs requires a range of strategies, including advocacy and awareness-raising, capacity-building, community-led initiatives, collaboration and partnership-building, and policy and legal frameworks. By working together to address the challenges of lack of resources, lack of political will, and negative attitudes towards indigenous languages, we can ensure that they are recognized and valued as important components of cultural heritage and key to achieving sustainable development.

## Implications

The research has significant implications for various stakeholders, including indigenous communities, policymakers, educators, and linguists. Some possible implications involve preservation of cultural heritage, empowerment of indigenous communities, improved communication and understanding, protection of biodiversity, linguistic diversity and human right, and economic development.

Overall, the paper concludes by briefly identifying areas of possible future research to actualise the integration of indigenous languages in education for sustainable development.

The study has shown that, to attain sustainable development, indigenous cultures must be preserved and maintained. Indigenous languages are often closely linked to the cultural heritage of a community. Promoting and recognizing these languages can help preserve cultural traditions and knowledge, which are essential for sustainable development. Therefore, achieving sustainable development is inextricably linked to the preservation of cultures worldwide. Languages perform the dual function of communication and carrying culture, thus there is no cultural preservation without linguistic diversity.

Further, the study establishes that the recognition and promotion of indigenous languages can empower indigenous communities by giving them a voice in the development process. It can also help to reduce inequalities and discrimination against indigenous people. Policy makers would benefit from the recognition that empowerment and involvement of indigenous communities in development discourse is a net positive for the goals of sustainable development.

Indigenous languages often contain knowledge about local ecosystems and natural resources. Promoting these languages can help to protect biodiversity and support sustainable management of natural resources.

Recognizing and promoting linguistic diversity as a human right can help to protect and promote the diversity of languages and cultures around the world.

Promoting indigenous languages can also have economic benefits, such as fostering cultural tourism, creating jobs in language-related industries, and promoting local products and services.

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An Investigation of Phonological Awareness Skills of Learners With Kikamba Reading Disorders in First Grade in Selected Schools Within Mwala Sub - County, Machakos County, Kenya

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## Abstract

The paper investigated the phonological awareness skills of learners with Kikamba reading disability. When one is considered a normal reader, he or she does not encounter much difficulty in reading and understanding texts. However, there are learners who have problems with phoneme identification and thus have difficulties in reading and comprehending texts. Such learners should be identified and assisted so that they can proceed with their learning lives. This research was guided by the following objectives: to investigate phonological awareness of learners with Kikamba reading disability; to establish the correlation among the various measures of Kikamba phonological awareness and to determine the significance of rapid automatic naming in Kikamba reading. A sample of pupils in grade one from the selected schools in Mwala sub - County, Machakos, Kenya was used in the study. Kikamba phonological awareness skills of these learners were tested to find out the nature of their awareness and skills in the tasks that were given. The study adopted an electric theoretical approach. The study was guided by the following theories: The phonological awareness theory which states that reading based on the alphabetic system requires that readers be aware that words are made up of individual sounds and the Rapid Naming theory which states that a good reader is one who has the ability to recall quickly and verbalize the names of presented objects which would also be individual alphabetic letters. The data was obtained from tape - recorded texts from respondents and analyzed to establish their nature of phonological awareness. Descriptive statistics measures which include measures of central tendency and measures of correlation was used to analyze and describe data. This study contributes theoretically and empirically to the area of phonological awareness and its importance in Kikamba reading. The paper recommends; there are difficulty levels of the various measures of phonological awareness, there is need for an effective training approach that includes these measures.

**Keywords:** *difficulties, normal readers, phonemes, phonological awareness, reading disability and nature*

## INTRODUCTION

## Background

Reading skill which involves the skill and knowledge to understand and recognize phonemes or speech sounds is one of the essential elements of reading that formed the basis of this study. Difficulties resulting from insufficient phonological processing of knowledge to decode words and non- words is referred to as reading disability or reading disorder. Consonant sounds and vowel sounds are referred to as phonemes. Phonemic awareness is the understanding that words

are made of individual consonants and vowel sound. Phonics is the teaching of reading that puts more emphasis on letter- sound relationships. Largely, in reading studies, phonological awareness is the understanding of phonemes. It is the knowledge of readers to recognize words that rhyme, to identify the syllables in words and to recognize and manipulate sounds in words (Kirby, et al 2003). Persistent difficulties in word decoding is experienced by learners who manifest deficits in phonological awareness (Blachman, 1991).The present study sought to investigate the manifestations of phonological awareness deficits experienced by selected pupils in grade one with Kikamba reading disabilities in selected primary schools in Mwala - subcounty, Machakos, Kenya, Due to the significance of phonological awareness in Kikamba reading process.

## Selection of the Research

Indigenous language as a learning area was introduced in the CBC curriculum in a bid to actualize the National language policy in education. In grade one in the Kenya Institute of Curriculum Development (KICD) curriculum design, indigenous language is covered as Literacy activities. The learning experiences and the reading tasks that learners in grade one should be able to perform include: comprehension passages, phonemic awareness, phonemic development, phrases and sentences among others. For a grade one pupil to perform well in these tasks, they should not be having any reading difficulties. The scenario where there are learners who manifest disabilities in reading is what led to the present study.

## Reading Ability

This study focused on investigating pupils with Kikamba reading disorders. Reading disorder is a learning disorders characterized by significant impairment of reading accuracy, comprehension or speed to the extent that the impairment interferes with activities of daily life or academic achievement. People with reading disorders perform below the level one would expect on the basis of their general educational opportunities and intelligence. Common problems in people with reading disorders include: Omission of words or sounds while reading, slow reading speed, difficulty decoding syllables or single words and associating them with specific sounds, poor comprehension when reading materials either aloud or silently, reversal of words or phonemes, limited sight word vocabulary and dysfluency (Owens,2008).The current study was concerned with investigating the phonological awareness skill of learners with

Kikamba reading disorders which entails knowledge of phonemes that aids the learners in decoding of words.

*Components of Phonological Awareness*

Phonological awareness is the broad class of skills that involve attending to, thinking about and intentionally manipulating the phonological aspects of spoken language, especially the internal phonological structure of words. (Scarborough 2005). Word level activities, ike identifying the number of words in a phrase or sentence; Syllable tasks such as syllable counting or syllable blending; phoneme segmentation task like counting or identifying phonemes, sound blending tasks, in which learners join individual sounds or syllables to make word and phoneme manipulation like identifying, deleting, adding, substituting or transposing phonemes or syllables; rhyme tasks like identifying and producing rhymes, are corresponding instances of tasks that are often used to teach or measure phonological awareness (Schuele & Boudreau, 2008).

Phonological awareness is believed to develop from the global to the small and more subtle, that is, from the rhyme to the syllable, to intra - syllabic units, such as the onset, rhyme and then to the phoneme level (Muter, 2003; Goswami, 2005). The difficulty in phonemic awareness derives in part from the fact that we speak in overlapping vocal movements that blur distinctions between individual phonemes (Schedule & Boudreau, 2008)

This study was guided by the following tasks in formulation of tasks to test the phonological awareness of pupils with reading disability who participated in the study: Researchers employ a variety of cognitive and linguistic tasks to test phonological processing. Decoding of phonetic non- words, naming speed of familiar stimuli such as letter, digits, colors and objects and non - word repetitions, are other tasks that can be used to test phonological awareness. The tasks were specifically on phonemic awareness. Phonemic awareness is considered the most important phonological element to the successful acquisition of reading and writing (Yopp, 1992; & Copter, 2005; Juel, 1988; Yopp, 1988).

*Components of Phonological Awareness*

To understand phonemic awareness better, one has to know the components that make it up. This knowledge can be obtained from understanding phonetics and phonology. Phonology deals with the study of the abstract presentation of sounds in a particular language whereas phonetics

is the process of describing sounds the way they are used in speech (Roach, 2009). There are two main types of phonemes in Kikamba language. They are referred to as consonants and vowels. A combination of consonants and vowels form a syllable, which is a typical structure of sonority that peaks with the vowel (Hudson, 2000). Vowels and syllabic consonants form the peak of the word or syllable that they appear in while consonants may or may not appear on either side of the vowel. Consonant sounds can be classified based on the following parameters: voicing, place of articulation.

*Kikamba Phonological Parameters*

Maundu (1980) Kikamba has five varieties, the Kitui North, the central Kitui, Eastern - Southern, Kilungu and Makueni, and Machakos.Kikamba has a total of 19 consonants (Kitavi, 1992). And two more consonants found in Kitui North variety (Mathooko, 2004). The two varieties are: voiced alveolar trill [r] and the voiced velar fricative [ɣ ]. This study focuses on the Kimasaku variety which does not have the two additional phonemes.

**Kikamba Consonants**

| Place<br><br>Manner | Bilabial | Dental | Alveolar | Palato-<br><br>Alveolar | palatal | Velar |
|---|---|---|---|---|---|---|
| Stops | | | t | | | k |
| Prenasalised stops | mb | | nd | | | ŋ g |
| Affricates | | | | tʃ | | |
| Prenasalized Affricate | | | | ndʒ | | |
| Fricatives | φ | ɵ | s | | | |
| Prenasalized Fricatives | | nɵ | nz | | | |
| Nasals | m | | n | | ɲ | ŋ |
| Laterals | | | l | | | |

| Glides | w | | | | j | |
|--------|---|---|---|---|---|---|
| | | | | | | |

## Kikamba Vowels

Kikamba vowel system contains seven vowel phonemes (Ndeti, 1972)

a) Short Vowel
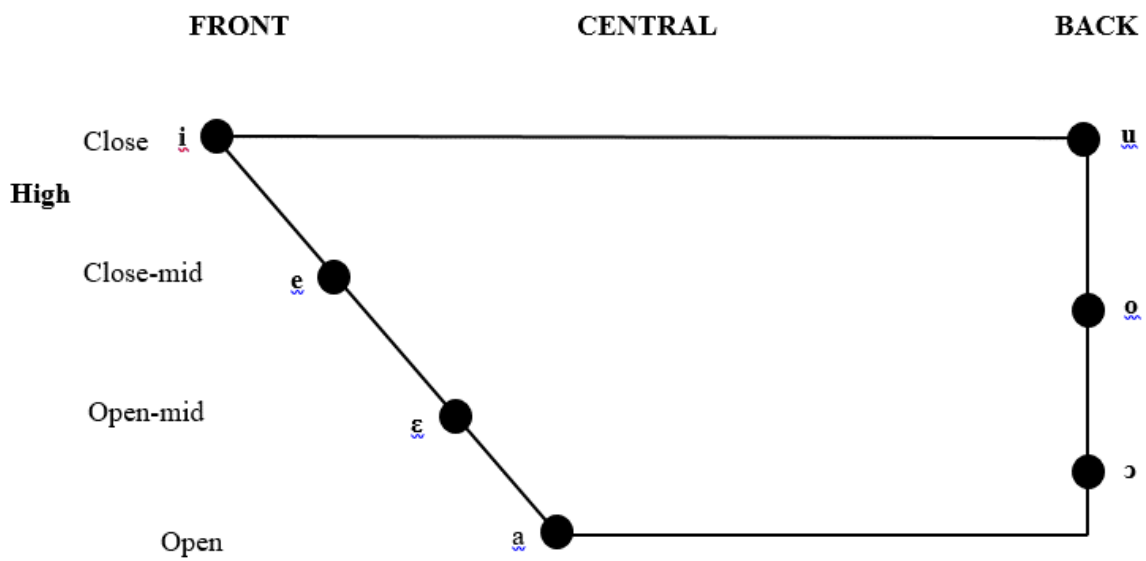
## FIGURE 1: THE VOWEL CHART

|  | Front | Back |
|---|---|---|
| Close | ii | uu |
| Close - mid | ee | oo |
|  | ɛ ɛ | oo |
| Open-mid | ɛ ɛ | ɔ ɔ |
| Open |  | aa |

## FIGURE 2: LONG VOWELS

## PHONETIC AND ORTHOGRAPHICAL REPRESENTATION OF KIKAMBA VOWELS

| IPA Symbol | Kikamba Orthography | Examples | Gloss |
|---|---|---|---|
| a | a | vata  /vata/ | need |
| ɛ | e | ete  /ɛ tɛ / | bring |
| e | î | wîa  /wea/ | work |
| i | i | ndia  /ndia/ | Fool |
| ɔ | o | osa  /ɔ sa/ | take |
| o | û | kûna /kona/ | beat |
| u | u | mumo /mumɔ / | grace |

## THEORETICAL FRAMEWORK

The current study adopted the phonological awareness theory and and the rapid automatized naming theory. These theories are thus explained in details.

## Phonological Awareness Theory

A processing ability mostly related to literacy is phonological awareness. It encompasses phoneme awareness which is the ability to manipulate individual sounds (phonemes) in words, and rudimentary phonological skills, such as judging whether two words rhyme. It demonstrates that individuals who have difficulty detecting or manipulating sounds in words will struggle with learning to read. Explicit instruction on phonological awareness is beneficial for typically developing children, young children at risk of reading difficulties and for poor readers (Anthony & Francis, Carts & Kamhi, 2005; Ehri et al., 2001; Kirby, Pfeiffer, & Padilla, 2003).

Distinctions among phonological awareness skills based on unit of word structure include whether the syllables are the focus of the task or whether smaller intrasyllabic units, like onsets, rhymes or phonemes are the focus. The onset is the initial consonant or consonant cluster present in many but not all Kikamba syllables; The rhyme is the remaining vowels and consonants. For instance, in the word *ndia* /ndia/ which means fool in Kikamba 'nd' is the onset; 'i' is the rhyme and /nd/, /i/ is the rhyme and /nd/, /i/ and /a/ are the phonemes.

Two patterns of phonological awareness development are evident. First, children can become increasingly sensitive to smaller and smaller parts of words as they grow older. Children can detect and manipulate syllable before they can detect or manipulate onsets and rhymes, and they can detect or manipulate onsets and rhymes before they can detect phonemes within intrasyllabic word units. Secondly, children can detect similar and dissimilar - sounding words before they can manipulate sounds within words, and children can generally blend phonological information before they can segment phonological of the same linguistic complexity (Anthony et al., 2003). Finally, children refine phonological awareness skills they have already acquired while they are learning new phonological awareness skills (Anthony et al., 2003; Anthony et al., 2005)

The study found phonological awareness theory relevant to this study in that it informs the study of the importance of the learners having phonological processing abilities in order to be good readers. In addition, the theory suggests the various tasks that can be used to detect if a child has developed phonological awareness skills. The current study used the following tasks to determine the nature of phonological awareness skills; phoneme manipulation; phonological production; non- word reading; phoneme blending and phoneme segmentation all of which were informed

from the tasks suggested in this theory. The present study looked at the skills of learners at the word level, the phoneme level and the syllable level. These distinctions are important in the analyses of the responses of the respondents in the current study.

## Rapid Automatic Naming (Naming Speed Theory)

The ability to recall quickly and to verbalize the name of a presented object is called rapid naming. Naming speed is typically accessed by Rapid Automatic Naming Test (Denckla and cutting, 1999), which requires children to name familiar colors, digits, letters and pictured objects (Klein, 2002). Researchers and clinicians have known for years that the Rapid Automatized Naming test (RAN) is a strong predictor of early reading ability and that people who have poor performances on these tasks are expected to have difficulty reading fluently (Katzir et al., 2006; Wolf and Bowers, 1999).

Rapid naming tasks are characterized by whether the task includes orthographic recall (letters and numbers) or pictorial recall (pictures and colours). Good readers engaged in a rapid naming task frequently will read more fluently (I.e faster and more accurately) on those tasks involving orthographic naming ability than on pictorial tasks (Klein, 2002).

The current study used the automatic naming theory to help explain the speed of reading of the respondents in the phonological awareness tests. This theory informed the timing of each test the respondents took in the study.

## MATERIALS AND METHODS

This paper employed a descriptive research design in investigating of phonological awareness skills of learners with Kikamba reading disorders in selected primary schools in Mwala - Sub county, Machakos, Kenya. Descriptive research design is a method designed to investigate the current status and the nature of a given phenomenon (Kasomo, 2006). The researcher focused on grade one pupils. Measures of phonological awareness were the independent variables and single word reading was the dependent variable. A descriptive research design includes measures and techniques that produce non - statistics data. These data can be symbols, sounds, words and other non - numerical records (Davies 2007 and Mc Nabb2004). The study employed this approach because part of the data was non- numerical.

This paper employed descriptive statistics in summary of data specifically percentages and frequencies of the scores of the respondents in the phonological awareness tests. The data was

collected through tape recording and thereafter transcribed and then analyzed in prose and the numerical data presented using means, frequencies and percentages. Statistical analysis was also done to measure the correlation between the various measures of phonological awareness.

The study was conducted in primary schools in Mwala sub - county, Machakos, Kenya. Most of the residents who live in Mwala sub-county are Kambas of Machakos dialect. This area is therefore an ideal area of study because the respondents who speak the language had a probability of being selected in the study.

The researcher selected 25 respondents from a group of 65 pupils who had been recommended by their various class teachers from sixteen schools that had been visited exhibiting various reading disorders. The respondents sixteen boys and nine girls were aged between five to nine years old.

This research was guided by the following objectives: to investigate phonological awareness of learners with Kikamba reading disability; to establish the correlation among the various measures of Kikamba phonological awareness and to determine the significance of rapid automatic naming in Kikamba reading

## RESULTS AND DISCUSSION

### The Nature of Phonological Awareness Skills of the Respondents

This study used various tasks in determining the learners' skill in phonological awareness that are suggested by the phonological awareness theory. They included; phonological manipulation, non- word reading, phonological production, phoneme segmentation and phoneme blending to test the respondent's nature of phonological awareness.

*Mis- Articulation in the Pa Tests*

It was observed that substitution mis- articulations were the most common followed by the atypical mis - articulations with phoneme deletions and insertions being fewer in the tasks. The respondents also showed inadequate phonemic awareness in the segmentation task.

*Substitution Mis - Articulation*

This study discussed substitution mis - articulation in two categories. These are articulation substitutions involving consonant sounds and those involving vowel sounds.

*Substitution of Consonant Sounds*

Roach (2009) classified consonant sounds according to some of the following distinctive features: place of articulation, voice and manner of articulation. The present study has grouped Substitution mis - articulation realized into these three categories then explained.

*Voicing Mis - Articulation*

In the following examples consonant sounds were classified under "voice" because the changes in words depended on whether the sound involved was voiced or voiceless. The sound /nɵ / was substituted the sound /ɵ / in the non - word "*nthî*" transcribed as /nɵ e/. Both are dental sounds. However, the consonant sound /nɵ / is voiced and the consonant /ɵ / is voiceless.

The respondents were to identify the first sound in the word */tuta/* meaning sweep. The sound /t/ was substituted with /nd/. The respondents response was /*ndunda*/. These sounds are produced when the blade of the tongue comes into contact with alveolar ridge. Thus, they are alveolar sounds. /nd/ is voiced alveolar stop while /t/ is its voiceless counterpart.

*Mis- Articulations due to Place of Articulation*

Consonant sounds are classified depending on the position within the vocal tract where constrictions take place during articulation. These sounds are produced along continuum based on the movement of both active and passive articulators within the vocal tract. For instance /m/ is bilabial, /k/ velar and is /s/ alveolar.

The consonant /ɲ / was substituted with the consonant /n/ in the non- word "*nya*" transcribed as /ɲ ya/. This led to the production of *na*/na/. The consonants /ɲ / and /n/ are nasals. However, /ɲ / is produced palatal whereas /n/ is alveolar. Another instance is that which involves two fricatives /nɵ / and /nz/ in the non - word /nɵ e/. The respondents instead of reading /nɵ e/ were reading /nze/.

*Mis - Articulation due to Changes of Manner and Place of Articulation*

Two distinctive features were used to determine mis - articulations: place of articulation and manners of articulation. The nature of constriction that takes place when the sounds are being produced is referred to as manner of articulation. Thus, a sound can be classified as a lateral, velar, stop and nasal just to mention a few.

It was observed that sound /j/ was replaced with /l/ in the non - word "y*a*" transcribed as /ja/. This made the resultant word be.  "*la* ". Even though they are voiced, /j/ is palatal glide while /l/ is alveolar lateral. Substitution of one of these two sounds in the same word position leads to new words of the Kitui dialect but same meaning.

## Substitution Mis - Articulation with the Vowel Sounds

There are different parameters used to classify vowel sounds: shape of the lips, horizontal tongue position and vertical tongue height. In terms of shape of the lips, a sound is either spread, round or neutral. In relation to horizontal tongue position, a sound can be said to be front, central or back. In relation to vertical vertical tongue height, a vowel sound can be said to be high, mid-high and low. Substitution mis - articulations involving the use of vowel sounds in the present study were determined using these parameters.

In the study some target sounds and the sounds that they were substituted with, in the non - word reading task and the phonological production task are illustrated below. For instance,the close - mid front unround vowel /e/ was substituted with the close high front unround vowel /i/.  Articulations of either sound in place of the other results in a different sound and can even change the meaning of the word. In the word /wea/ work the substitution leads to a new word /wia/ fear. Another example involves sound /o/ which is a close - mid back round with /u/ a close high back round. In articulating the non - word /ko/ ended up with a word /ku/ which means there. The assumption of the study is that the respondents were transferring their knowledge of sight word vocabulary to read these words.

## Short Versus Long Vowels

A change in the meaning of Kikamba word can stem from the length of the vowel used in the word.  The short /ɔ / is open - mid back round vowel was substituted with long open - mid back round back /ɔ :/ when respondents were instructed to produce Kikamba words words that had the vowel /ɔ /. Examples of word given were: *ng'ombe cow* and *ngo* leopard. A transcription of these words reveals that the 'o' is a long vowel sound /ɔ :/ (*ngombe* / ŋ ɔ :mbɛ / and *ngo* /ŋ gɔ :/ . The short vowel /ɛ / was substituted with /ɛ :/ . The responses given by the respondents were: *mbeve* accordium and *kenda* nine. A transcription of the two words shows that the first 'e' is a long vowel /ɛ :/ instead of the short /ɛ / . That is /mbɛ :ɸ ɛ / and /kɛ :nda/. These mistakes show that the respondents' letter knowledge Does not correspond to the sound knowledge. Arrow (2007) A child with good phonological awareness will be aware of the sound

in a word in addition to knowing the letters that make up the word. This is called letter -sound knowledge.

## Letter Naming

In the phonological manipulation test, the mis - articulations of naming letters instead of articulating the sounds was realized more than in any other test used in the current study. The respondents were expected to identify the first sound, the missing sound and the last sound in the Kikamba words in the phonological manipulation test. The respondents identified the letters instead of the sounds that appeared in the word positions as illustrated in the table below.

| Target Sound | Letter | Target sound | Letter | Target sounds | Letter |
|---|---|---|---|---|---|
| /j/ | y | /s/ | s | /l/ | 1 |
| /k/ | k | /n/ | n | /ɸ/ | v |

Arrow (2007) Literature shows that letter knowledge is a key component in training children how to read even though is not a clear demonstration of phonological awareness. Normally, the letter knowledge is acquired through the phonics approach. Studies show that, when phonics approach is combined with teaching of phonological awareness it would enhance children's reading abilities.

## Phoneme Insertion

The respondents were expected to identify the initial sounds in words, missing sounds and the last sound, in the phoneme manipulation test. In this test there were numerous insertions of the vowels in identification of various consonants. Examples of the articulations are illustrated in the table below.

| Target sound | Phoneme insreted | Examples of articulation |
|---|---|---|
| /tʃ/ | /i/ | /ti/ |
| /mb/ | /e/ | /me/ |

| /nz/ | /i/ | /ni/ |
|------|-----|------|
|      |     |      |

The vowel sounds that are inserted in the target phonemes tend to influence the way the respondents articulated the phonemes. Even though this shows no serious identification problems, it is noted that these respondents are lacking in the awareness of the segments that should go into the different parts of a syllable. The results show that the respondents were not aware that the onset of a word should only contain the initial consonant sound and that vowel sound is part of the time. Children should be made aware of how to identify the sounds that go to the onset and the ones that are part of the coda when teaching them phonological awareness skills. Such awareness has been shown to aid the children in acquiring reading competence. (Lonigan et al., Tunmer & Chapman, 2007).

## Phoneme Deletion

The phonological process where a speaker omits a sound or sounds that are expected to be articulated in a word is called phoneme deletion. Mis- articulations as a result of deletion were not common in the respondents' answers. Some examples of such mis- articulations are illustrated in the table below.

| Target Word | Sound Deleted | Words Articulated |
|-------------|---------------|-------------------|
| *inyanya* tomato /eɲ a:ɲ a/ | /e/ | nyanya /ɲ a:ɲ a/ |
| *Îtumbî* egg /etumbe/ | /e/ | tumbi /tumbe/ |
| *wakya* greetings /watʃ a/ | /w/ | akya /atʃ a/ |

## Analysis of Mis - Articulations in Segmentation

These are mis- articulations made while attempting to identify the individual sounds in the words that were given in the phoneme segmentation test

It was observed that some respondents spelled words instead of individual sounds that made them up. For instance, the word *aka women* was segmented into /a/, /k/ and /a/. Some spelled

< a>, <k> and <a>. Such respondents lacked letter-sound knowledge which is very vital in performance of phonological awareness tasks that test on the segmenting skills at the phonemes level.

Pronunciation of the entire task required the respondents to identify the phonemes that made up the words. 25.6 percent of the respondents opted to read the entire word instead of identifying the segments that made them up. For example, in the word *mbua* rain instead of identifying the sounds /mb/, /u/ and /a/ their response was *mbua.* This is an indication that phoneme segmentation is a difficult task among the phonological awareness tasks.

In splitting the word, it was noted that 32% of the respondents could not identify the individual phonemes in the words. One of the mistakes was where the respondents split the word into two with the vowel in the word combined with consonant in the word. For instance in the word *mbaki tobacco* instead of identifying phonemes /mb/, /a/, /k/ and /e/ the respondents split the word to "mba-*kî* ". This shows that the respondents were aware that words can be split but they are lacking the phonological awareness that words can also be split further into smaller units called phonemes. Segmenting at the phomemes level is one of the most difficult tasks for children learning to read (Chen, 2009; Armbruster, et al. 2004)

## Descriptive Statistics of the Performance of the Respondents

It was observed that there were difficulty levels in the measures of testing the phonological awareness skills of learners in grade one with reading disabilities. Phonological production was the least difficult, followed by non - word reading and phoneme blending tests. The most difficult sub - tests were phonological manipulation and phoneme segmentation.

## Significance of Rapid Automatic Naming in Learners Reading

From the results it was evident that respondents spent the least time in phoneme segmentation with mean limit of only 1 minute 6 seconds, followed by phoneme blending with a mean of 1 minute and 9 seconds. Non-word reading task had a mean of 2 minutes and 9 seconds, phonological manipulation with a mean of 3 minutes and 9 seconds and lastly phonological production with mean of 8 minutes and 4 seconds.

The study observed that one of the reasons the respondents spent less time In PS was because they did not have any idea what to do. This finding leads to the observation in the present study that performing a phonological task cannot singly be explained by rapid automatic naming

speed alone that is reading is influenced by other underlying components one of them being phonological awareness.

The analysis of the transcribed data in this study indicates that the respondents who scored low marks in the sub-tests of phonological awareness also spent longer time in responding to the tasks. It was also evident that there were no significant differences in the time taken by respondents in answering the PA tests across the ages of the respondents. The time taken by the girls was slightly higher than that of the boys in PB and PP whereas the time taken by the boys was slightly higher than girls in NW, PM, and PS.

## CONCLUSIONS AND RECOMMENDATIONS

The current study contributes theoretically and empirically to the area of phonological awareness and its importance in Kikamba reading. Theoretically, this study provides additional evidence that phonological awareness is a key factor in Kikamba reading and that children with deficits in it are likely to experience reading disabilities. Practically, it gives the nature of awareness of the respondents' phonological awareness deficits.

The findings of this study could be helpful to the curriculum developers in designing appropriate instructional strategies that will involve teaching of indigenous language reading using all the measures of phonological awareness. The study notes that there are difficulty levels of the various measures of phonological awareness and recommends that there is need for an effective training approach that includes these measures.

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## The Role of Electronic Dictionary in Kikamba Language Learning

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## Abstract

The role of a dictionary in language learning process cannot be denied. The dictionary can be extremely useful learning resource, particularly as it makes the learner more independent of the teacher. Dictionary is a treasure house for any language. The policy of language in Kenya emphasizes on the importance of first language. Presently in the new curriculum of education (CBC) the role of Mother tongue has been re-emphasized because it has not received as much attention in the 8-4-4 curriculum. It is on this basis that this paper examines the role of e-dictionary in Kikamba language. Electronic dictionaries are gaining popularity with the development of technologies that makes it possible to develop new lexicographical on-line and off-line products meeting demands of Kikamba language students, lexicologists, translators, and other stakeholders. The advantages of electronic dictionaries such as sophisticated searching, unlimited storage capability, speed and types of search among others will be described. This paper will examine types of electronic dictionaries and the role of the dictionary in Kikamba language learning. Language learning by acquiring language skills is assuming more importance in learning. If one could acquire listening skills, one could achieve other skills such as speaking, reading and writing. Listening skill can be developed by using technical gadgets. In this paper using technical gadgets such as e - library, language laboratory, and e- dictionary to acquire knowledge in language was examined. Learners were motivated to use technological gadgets to learn language and were given opportunity to develop their vocabulary by using electronic dictionary. The researcher found out that, use of electronic dictionary in Kikamba language learning helps bring out hidden talents of the slow Learners and develop learner's in language learning.

**Keywords:** *Online dictionary, offline dictionary, printed dictionary, language skills, Language learning, lexicography*

## INTRODUCTION

In the present context, Technology - Enhanced learning has taken huge leaps. Online educational resources are drawing popularity day by day. Among the online educational resources e- dictionary is an important tool in the learning process. Language learning is mainly for proficiency and fluency in communication in the speaking and graphic form. The present need of researchers and language learners cannot be satisfied by depending on compiling the manual dictionaries. Kikamba language learners, in this technological scenario, should be motivated to learn the language easily by using electronic dictionary in the classroom because it provides an accessible and easy way of learning Kikamba words. It is a powerful learning aid

that stimulates a desire to learn independently and promotes the better understanding of the language.

The word dictionary is taken from Latin word "dictionaries". It is derived from the word 'diction' which means 'style'. Lexicography deals with the practice of compiling dictionaries. Learners use electronic dictionaries in learning process to acquire language skills. Learners could be motivated themselves by improving vocabulary by referring to the different dictionaries which come under the reference materials. Learners could be attracted by the teaching methodology using technological gadgets in the classroom. The role of dictionary is to express the semantics and to expose the etymology of a word. Dictionary functions to accumulate word power, the modeling of using an apt word in the apt place and the usage of the word in different occasions and periods. No manual compilation could be vast and vivid as the expectation of the learners, moreover using manual dictionary which is full of time consuming and laborious. Bit giving semantics, syntactic and etymological forms of lexis by electronic dictionary can be much more beneficial and very quick access to learners. Therefore, introducing e- dictionaries is a welcoming factor in the language learning especially in Kikamba language. Learning Kikamba is found to be deteriorating in stranded with reference to vocabulary among children in lower CBC grades.

## Types of Dictionaries

In general dictionaries are categorized into Traditional or printed dictionary, Mobile dictionary Electronic, dictionary or e- dictionary, Daniel Jones phonetic dictionary, online dictionary, Encyclopedia andan Thesaurus. Of these dictionaries, this paper lays emphasis on electronic dictionary.

Electronic dictionary is a dictionary in the digital form. It can also be said to be dictionary of digital form which can be used to access any number of words or lexemes. Any reference material stored in electronic form that gives information about the spelling, meaning, or use of words can be referred to as electronic dictionary (ED). Electronic dictionaries may be divided into two main groups: those intended to be used automatically by computers for various applications, for instance in language technology contexts such as machine translation, and those intended to be used interactively by people for consultation or reading. An electronic dictionary can be intended for on-line and use off-line. Whereas an on-line dictionary has been published on the internet and is consulted via the internet and not stored with the individual

user, an off-line dictionary is stored with the individual user, either in an electronic pocket calculator or reading pen (PED) or in a personal computer (PCD). Like the print dictionary, the off-line dictionary can be regarded as a finished product, the on-line dictionary can be continuously revised and enlarged and is in principle an unfinished product etc. V. Dubichinskiy considers this characteristic to be a valuable one as at any stage the electronic on-line dictionary can be edited and perfected.

An additional type of electronic dictionary which is described by B. Svensen [13, c. 438] as a hybrid form between an on-line dictionary and off-line one – is stored on a server in the intranet of a company or institution, and is updated and consulted via that intranet and called Intranet dictionary.

At present, there are different types of Kikamba dictionaries which can be downloaded in the tablets, smart phones or as apps. It is user friendly and easy to learners to learn more words within the short time. It is better and faster for class- based activities. Even though it may create a great distraction in the classroom teaching, electronic dictionary is more useful in the classroom teaching than paper dictionary. While we teach the grammar elements in Kikamba such as verbs, Idiomatic phrase, Nouns, sentence structure among others, it is easy to interact with the learners and easy to search a word for meaning.

## LITERATURE REVIEW

Works carried out on electronic dictionaries by researchers include; Aust, R.et al. (1993), View that an electronic dictionary is "an electronic aid that offers immediate access to reference information with clear and direct return path to the target information"

Razaei and Davpudo (2016) opine that electronic dictionaries have advanced rapidly in the last three decades. Electronic dictionaries are made available in CD-ROM, small hand- held calculator - type reference works and online (Nesi, 2009). Moreover, CD- ROM and hand - held devices used by researchers show interest in online dictionaries due to rapid advance of the internet, smart phones and IPads (Rezaei and Davoudi, 2016). Electronic Dictionaries used more by language learners are becoming a new technological tool of vocabulary learning among language learners.

Hulstijn et.al. (1996) confirmed that learners checking dictionaries are to find the meaning of words which have reading and listening leading to learning vocabulary. They highlighted the

vocabulary learning strategies which illustrates that language learners can find out new vocabularies on their own using dictionaries.

Stifling (2003) Kobayashi (2006) as cited in Rezaei and Davoudi (2016) have compared with the bulk of paper dictionaries and slow retrieve, the increasing popularity of electronic dictionaries can be credited to better readability and their ease of use, which makes the consultation process less time- consuming.

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Although [Roby 1999] reports a few 1980s experiments involving the use of online glosses, the study of electronic dictionary use is still in its infancy. The linking of language learning materials with dictionary definitions only really became feasible in the 1990s, as hypertext became a standard feature of computer systems. To date, most ED research has been concerned with the use of glossaries relating to modern language course materials, such as the German Cyberbuch [Chun / Plass 1996], Spanish magazine articles [Aust et al 1993, Knight 1994, Roby 1999], and excerpts from a French novel and poem [Lyman-Hager et al 1993, Lomicka 1998].

The results of these experiments strongly favour the use of computer-based lexical information. [Aust et al 1993 and Roby 1999] found that users of online glosses looked up significantly more words than subjects with hardcopy glosses, in Knight's study, for where subjects read text with and without access to online glosses, those with glosses took longer to read the passage but achieved higher vocabulary and reading comprehension scores. in these two studies though, differences in comprehension scores were found to be insignificant.

[Lyman-Hager et al 1993] the subjects who used online glossing achieved significantly higher vocabulary quiz scores than those using glosses on paper. [Chun / Plass 1996] and [Lomicka 1998] also experimented with multimedia glossing online, and found that access to glosses with still pictures as well as text improved word recall. From those works reviewed, it is understood that electronic dictionary offers immediate access to abstain information and it consumes less processing time for learners or users. It is in view of this that this study feels in Kikamba classroom, the use of electronic dictionary is more useful to the learners. Thus, Electronic dictionaries used by language learning are more growing in the academic area.

## Classification of Electronic Dictionary

Electronic dictionaries can be classified into various types according to different norms. The development of new technology and the Internet have progressed the dictionary concept. . An Electronic dictionary typology is that by Schryver (2003). He focuses on technical and Lexicographic evaluation. He distinguishes to between offline and online dictionaries based on technical evaluation. Offline dictionary embraces printed electronic dictionaries and personal computer dictionaries (PCD). Based on lexicographic evaluation, this typology distinguishes between electronic dictionaries based on lexicographic evaluation, this typology distinguishes between electronic dictionaries based on their paper versions and also newly developed electronic dictionaries with both innovative and printable appearances.

## Speed of an Electronic Dictionary

Electronic Dictionary provides users with a stronger search function in the digital form. Speed is seen as one of the main advantages of using electronic dictionaries in particular those online and CD - ROMs. Wescher and Pitts (2000) are of the view that electronic dictionary is speed of the unknown words (searching words), students are looked up by the users and the students can find quickly the words faster with an electronic dictionary than with a paper dictionary. Speed is often perceived as an advantage of Electronic Dictionaries but it been recommended that speedy reason must therefore be observed as a deliberate activity.

## USE OF ELECTRONIC DICTIONARY

It is a boon for language learners and also brings out hidden talents of the slow learners. It helps to develop learner's knowledge in language learning and enhances the learners to develop receptive skills. One can easily update some of the brands by using internet and software.

Individual attention can be given by teachers while using electronic dictionary in the class. Learners' educational qualification level can be raised. E- Dictionary provides storage and retrieval become quick and easy, active learning opportunity, tension free environment and gives feedback immediately.

As far as the learning situation is concerned, E- dictionary is used in the following domain. They are: The electronic dictionary extends educational opportunity to develop new ways of learning and increases the array of learning opportunity; It encourages cooperative attitude among users because a view of the screen is more easily shared than a view of the page; It inspires the students in finding, evaluating and sharing information; It provides proper motivation and instils interest towards the self- learning; The learners can learn at anytime, anywhere without other external help; This enables the learners to learn more depending on their aptitude, attitude and also ability; Providing users with authentic recorded voice facilities for better pronunciation.

## CONCLUSION AND RECOMMENDATIONS

Using e- dictionary is considered as a skill and dictionaries are considered as pillar of language learning. Electronic dictionaries may not replace the traditional paper dictionaries but they can surely supplement the paper dictionaries. Electronic gadgets are valuable in teaching and learning process. The E- dictionary revitalize and helps to overcome from the formal learning to informal learning. The present situation, the language learners need not carry any dictionaries along with them and wherever they go. The ordinary library functions in certain period of time, but the E- dictionary helps a lot 24/7 and whenever we need to refer to the learning materials. This could help the Kikamba language learners in different levels of vocabulary learning and also used both in class and outside of the class. So, preparing and learning the E- dictionaries can surely be an unconventional and fashionable trend in Kikamba language learning. The E- dictionaries will help a lot for the Kikamba language learners and particularly the CBC lower grade pupils.

Kikamba language should be taught with proper phonetic sound. An electronic gadget such as language laboratory and e- dictionary, among others, help the learners to learn the language properly. Opportunities should be provided for using technological gadgets to the learners to learn Kikamba language effectively and properly. Kikamba language class must be provided with digital board, electronic dictionary, Kikamba language laboratory and internet facility. More exposure should be given to the learners to use technical gadgets in learning Kikamba language.

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Social-Economic Factors Influencing Solar Energy Adoption in the Built Environment in Kenya- Towards Mitigating Climate Change

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## Abstract

Average global temperatures have in the last decades risen resulting to climate change. Solar energy is becoming a game changer in the fight against climate-change. With Kenya's geographic location within the tropics, solar energy is one of the abundantly available clean energy sources. One of the key drivers for economic developments is the availability of inexpensive and abundant energy supply in Kenya. With devolution, demand for solar energy use within Counties in Kenya continues to rise. While the built environment is one of the highest energy use areas, social-economic factors continue to influence adoption of solar energy in the built environment affecting strategies towards climate change mitigation. This paper therefore purposes to examine these social economic factors influencing adoption of solar energy within the built environment towards mitigation of climate change. Rogers & Marshall (2003) diffusion theory is the main guide of the study in examining the social-economic factors influencing adoption of solar energy in the built environment. This paper is based on literature review. Content analysis was done to arrive at the argument within the different sub-themes there-in. Clean energy sources like solar energy are a key drive-in combating climate change and a study into social-economic factors influencing adoption of the same will be an important tool towards increased adoption of solar energy and in turn mitigating climate change. The review concludes that an increased adoption of SETs within Kenyan built environment spaces would directly reduce the amount of GHGs gases released by the sector and contribute to mitigating climate change.

**Key words**: *Social-economic, influencing, solar energy, mitigating, climate change, built environment*

## INTRODUCTION

Researchers (AGECC, 2010; Gitone, 2014; IRENA, 2018; IRENA, 2019; SusWATCH Kenya, 2020) collectively agree that emission of greenhouse gases into the atmosphere from different sectors and industries worldwide is the main cause of climate change. Approximately 11% of greenhouse gases (GHGs) are emitted from the built environment. While no study has shown one technology capable of completely reducing these GHGs, several technologies have been proposed with solar energy technology seen as a solution that can significantly reduce GHG emissions in these sectors and industries like the built environment. IRENA (2019) reported that worldwide, approximately 3 billion people are dependent on fossil fuels for their cooking and heating needs that increases GHG and approximately 1.5 billion people having no access to electricity or having unreliable electricity networks making them "energy-poor". These "energy-

poor" people suffer from a myriad of energy related consequences caused by buildings that are insufficiently ventilated, health complications from solid fuels that combust inefficiently, economic degeneration or stagnation from lack of reliable energy sources for basic services like education and health. Lack of reliable and affordable energy sources also causes these "energy-poor" to suffer from ineffective pumping capacity resulting to lack of access to clean water, poor sanitation, and adverse effects to food security leading to devastating impacts on populations that are very vulnerable (UNDP, 2012).

According to Gwalema (2002), social, economic and environmental development is greatly influenced by energy with global prosperity being dependent on the availability of reliable, clean and affordable sources of energy for the success of these developments. Modern and reliable energy sources are especially needed for improvement of health, reduction of poverty, and promoting economic development in developing countries like Kenya that are going through a phase of industrial development (Gitone, 2014). According to a study done by World Bank, 1-2% of potential growth in developing countries is lost due to power outages, energy loses and subsidies and inefficient use of energy sources that are scarce. Globally, 60% of total GHG emissions come from energy systems i.e.; the supply, transformation, delivery and the use (IRENA, 2019).

In 2015, SDGs were adopted to provide a framework to access the connection between 1.5°C of global warming or 2°C and the development goals that include global equity and poverty reduction (IRENA, 2019). UN's SDG7 shows the importance of energy in fostering pathways capable of keeping global warming below 2°C and meeting several SDG target by ensuring access to sustainable, affordable, modern and reliable energy for all by 2030. Despite the availability of renewable energy solutions, the world is not on track to meet the SDG7 goals by 2030 and more improvements will be needed through energy funding, policy interventions, training and awareness and a people's increased willingness to embrace renewable developing technologies like solar energy use (UNDP, 2012).
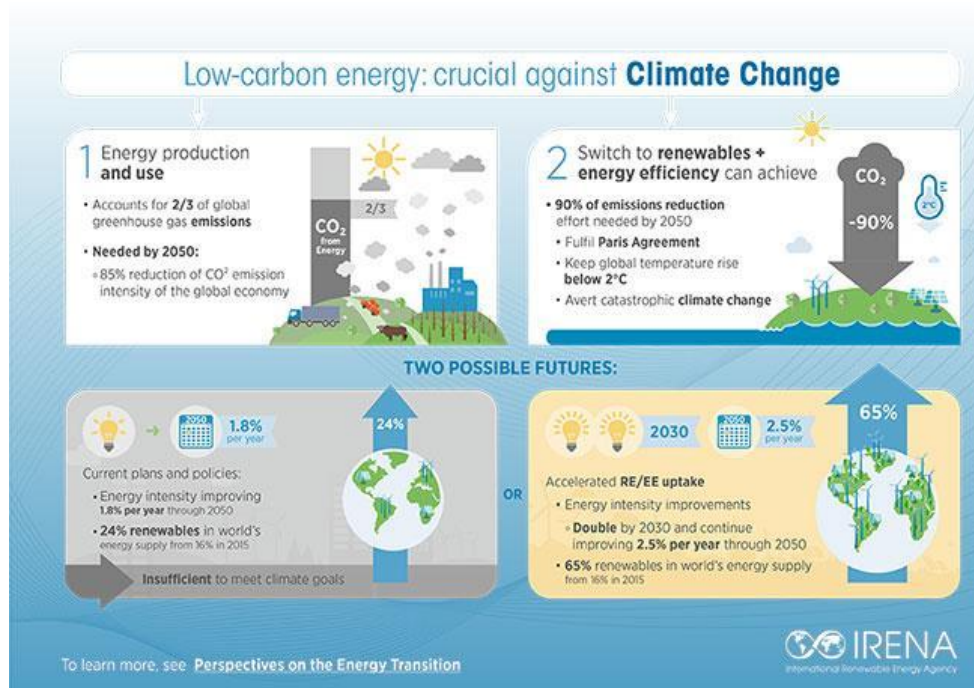
*Figure 1: Low Carbon Emission Projections by 2050. (IRENA, 2018)*

IRENA (2018) through a report named 'A roadmap to 2050' indicated that to reach the Paris Agreement's objectives a reduction of global energy demands would be required in all industries. The report indicated that this could be done through energy efficiencies like adoption of renewable energy sources, which should by 2050 amount to two-thirds of the total final energy supply globally. An increase of renewable energy with the power sector to 86% in 2050 from 25% in 2017 would be needed to accelerate change towards distributed, decarbonized and digitalized energy systems like solar energy (Moriarty & Honnery, 2022). Cox (2016) argues that through accelerating deployment of renewable energy sources promises, a myriad of benefits such as job creation, economic growth, reduced air pollution and most importantly climate change mitigation. With several governments worldwide reducing energy related C02 emissions that is the basis of energy transition, projected C02 emissions between 2015 and 2050 according to IRENA have reduced by 11% (IRENA, 2018).

Adoption of the 2030 Agenda for Sustainable Development that included SDGs and the Paris Agreement resulted from various forums worldwide negotiating and taking action towards accelerating energy transformation after the outcomes of 2015s international climate change negotiations (UNDP, 2012). AGECC (2010) proposes that strategies are put in place to enable global C02 emissions be reduced by 3.5% every year from now until 2050 and beyond in order

to meet the aims of the Paris Agreement. Increasing electrification using renewable energy sources like solar will be a major driver in mitigating climate change through change in global energy transformations (Ekins-Daukes, 2009). By 2050 global share of energy use through electrification in the built environment will increase from the current 20% to 49%. An increase of energy use within the built environment alone needs to reach 68% renewable energy by 2050 especially in the sector's lighting, heating, ventilation and cooking needs. The International Energy Agency (IEA) estimates solar energy to provide approximately 11% of electrification needs by 2050, (IRENA, 2019).

Cox *et al.,* (2015) state that the day and season of the year largely influences the solar irradiation arriving at ground level. Countries around the equator like Kenya experiences more solar irradiation most of the year without many seasonal variations. This makes the possibility of solar energy use within built environments attainable throughout the year with no interruption. Solar Photovoltaics (PV) commonly referred to as Solar Cells convert daylight in solar power without delay. The physical technique termed "Photovoltaic" impact or "PV impact" involves conversion of light (Photons) to electricity (Voltage) (Ekins-Daukes, 2009). Global PV production grew from 100GW in 2012 to an approximate capacity of 180GW by the end of 2014 globally (Cox *et al.,* 2015).

## Energy in the Built Environment

Within the built environment in many countries globally, interventions put in place for mitigation of climate change have resulted into efforts towards reduction of fossil fuels use by minimizing energy demand through rationally using energy and use of energy from ambient ground air to recover heat and cold (ventilation) especially in buildings (IRENA, 2019). Moriarty, & Honnery, (2022) argue that renewable energy should cover residual energy demand of a building in order for the building's sustainability levels to be relative to its positive environmental impact, i.e. GHG emission. In order to meet sustainability requirements and positively impact mitigation strategies for climate change in the built environment, energy demands especially electricity remain one of the crucial elements (Ciriminna *et al.,* 2018).

Building design of windows, walls, doors, roofing and walls as well as insulation improvements can lead to immense energy savings as well as efficiency in heating, ventilation and lighting. Effectively introducing and maintaining building codes relating to energy use in China and Denmark has led to significant energy savings in the built environment (Ciriminna *et al.,* 2018).

This has been done through switching to efficient appliance and lighting with low stand by power consumption for short-medium life appliances and switching to LEDs. In countries like Bangladesh, Rwanda, Ethiopia, South Africa, Uganda, Thailand and Kenya sensitizing people on the use of more energy efficient lighting like the solar lamps has increased energy efficiency (Ekins-Daukes, 2009).
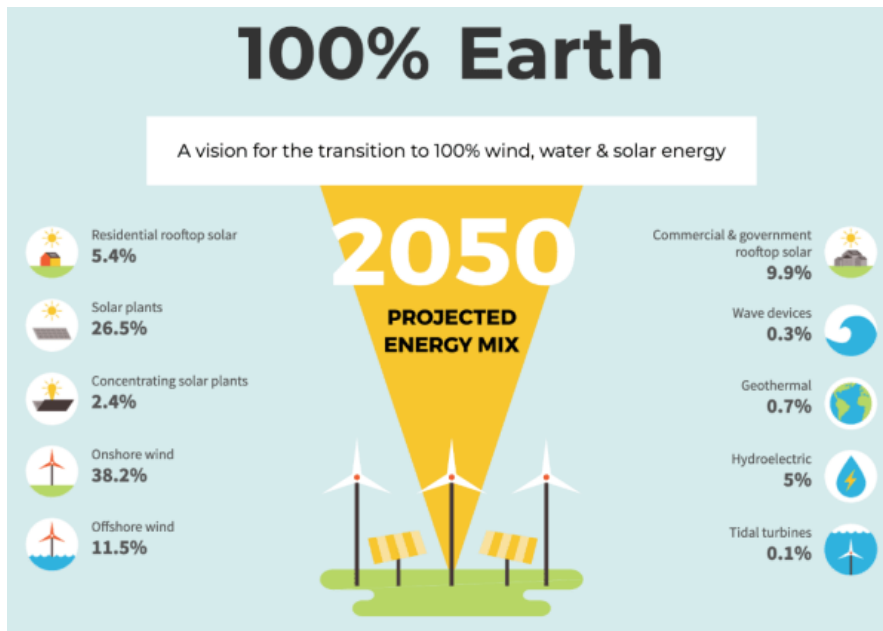


*Figure 2: Project Global Energy Mix by 2050. (www. cleantechnica.com)*

Cox (2016) submits that exploitation of renewable energy sources like solar energy within the built environment can reduce the use of fossil fuels significantly. Despite the built environment having a significant contribution to global GHG emissions, the sector is still struggling with promotion of energy transitions to cleaner sources like solar energy (Ciriminna *et al.,* 2018). It is estimated that by 2050 the built environment will increase renewable energy use to 81% with electricity demand in the sector increasing by 80% (IRENA, 2019). According to Ekins-Daukes, (2009), shifting from fuels to electricity for cooking, improving appliance efficiency will promote more adoption of renewable sources like solar energy. Built environments needs to promote innovative renewable applications as well as reinforce renewable energy markets to preserve the ecosystem and mitigate climate change through reduction of fossil fuels both at the local and global levels (Ciriminna *et al.,* 2018). Building policies with a focus on renewable heating, lighting, ventilation and cooking can also greatly contribute to reduced air pollution that in turns leads to amelioration of environmental conditions that result to or from climate

change (Cox *et al.*, 2015). Policies relating to building codes encouraging adoption of renewable energy sources like solar energy and financial incentives to both manufacturers and household owners can also influence solar energy use in the built environment leading to mitigation of climate change (IRENA, 2018).

## Energy Use in Kenya

Kenya, an East African country located on the equator, boasts of a total area of approximately 580,370 Km$^2$ and a population of approximately 48.5 million people (Sofie, 2018). Most of the energy use in the country is for cooking and lighting constituting mainly of fossil fuels like gas, kerosene & diesel and wood fuels like charcoal & firewood (Mutea, 2013). Within the built environment in Kenya, of the national primary energy supply, households cooking account for two-thirds of these demands and energy efficiency could significantly lower these demands. According to Energy Petroleum and Regulatory Authority (EPRA) 36% of the population has access to electricity with less than 2% of the national energy need being from solar energy (Gitone, 2014).
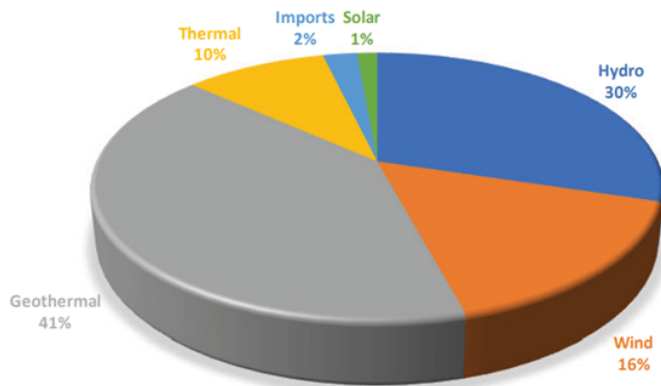


*Figure 3: Kenya's Average Energy Mix. (Kenya National Bureau of Statistics, 2021)*

According to Mutea (2013), traditional stone fires (wood fuels) are still used by approximately 78% of the Kenyan households in rural areas and by approximately 9% of the urban household. These emit large quantities of GHG especially $CO_2$ leading to air pollution and environmental degradation. While in urban areas access to other sources of energy like LPG for heating and cooking is better than rural areas thus reduced $CO_2$ emissions, adopting cleaner energy sources like solar would better help in mitigating effects of climate change (SusWATCH Kenya, 2020).

With devolution and subsequent growth experienced within the built environment, electricity use is increasing rapidly with household electricity demand being approximately 12PJ in 2020 from 3PJ in 2000, which is an increase above the population growth. Electricity efficiency like use of solar power, hydropower and geothermal power among others within the built environment by 42% from 2000 and is projected to keep increasing each with adoption of renewable energy sources. These assumptions therefore indicate that demand for electricity and light in household will increase with population growth and approximately 84% of GDP growth in relation to 2020 (UNDP, 2012).

Solar PV, according to Sofie (2018), form approximately 1% of energy sources in Kenya despite Kenya strategic position along the equator with 4-6kWh/m2/day of insolation allowing for higher adoption of solar energy use. The electricity capacity of the wind and solar power grid is approximately 1.420GW with the installed capacity being 2.4GW. The cost of household connection to the national grid is about 319EUR (Kshs. 35,000) making it a problem to expand electricity services to smaller businesses and poor areas due to high cost of connection. The cost of electricity per month is also very high compared to other countries like South Africa with most household using energy inefficient appliances that raise the cost of electricity. This is mainly due to lack of awareness on energy efficient appliances and the cost implication for purchase and installation. The lack of strict regulation from government of type of appliances being shipped also influences the use of energy inefficient appliances (George *et al.*, 2019).
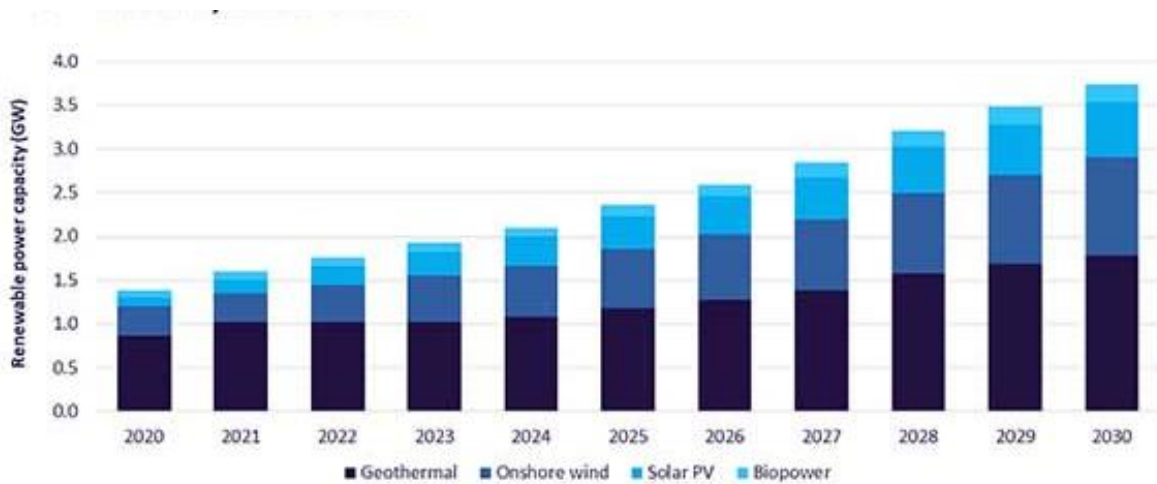


*Figure 4: Kenya's Renewable Energy Installations Projections 2020. (www.globaldata.com)*

Kenya has a rich supply of sunshine that averages 5-7 hours of sunshine per day resulting into 4-6 kWh/m$^2$ indicating a rich availability of solar energy in the country. 10- 14% of this energy can be converted to electricity with today's conversion efficient PV modules translating to about 23,047 TWh yearly enough for energy needs of over 70% of the built environment in the country (Sofie, 2018). Due to various socio-economic factors adoption and utilization is, however, much lower than it should be. There has however been an increase in the uptake of solar energy especially solar water heating within the built environment following the Energy (Solar Water Heating) Regulations of 2012 (Gitone, 2014). With increased adoption of solar energy use, efficient cooking appliances like computer-controlled cookers capable of cooking with only 10% of energy needed can be adopted. These cookers are currently being promoted in neighboring countries like Tanzania and Europe as well as Asia (RECP, 2018).

### Solar Energy and Climate Change

Moriarty & Honnery (2022) argue that sunlight, which is available in all parts of the world albeit in different intervals and intensity, is responsible for the energy source used to power the earth's climate and ecosystem. This energy can be harnessed for heating, cooling, ventilation and lighting purposed within various sectors of global economies like built environments proving energy with low carbon emissions and in turn providing an attractive way to mitigate climate change. Solar energy is available within all global regions and provides a renewable source of energy that can lead to significant reduction of GHG emissions (Cox *et al.*, 2015). Solar produces less life cycle GHG emissions although during manufacturing and recycling of the solar systems an extremely low (almost insignificant) amount of GHG are emitted. The generation of solar energy from a solar system result to zero GHG emissions, zero environmental impact and in turn climate change mitigation (AGECC, 2010).

According to Barnes (2007) solar energy technologies (SETs) are used as a way of enhancing living standards in developing countries'-built environments. These technologies are adopted in areas where grid services are unavailable, unreliable or where influx of solar is high. Solar technologies in these developing countries may however seem unattractive as they are associated with lack of financing to afford grid connection but can be considerably beneficial with right technologies and awareness of their benefits in reducing GHG emissions, improving energy security and mitigating climate change. In developed countries currently, SETs are more

expensive that conventional sources of energy and incentives are needed to improve adoption towards mitigating climate change especially in the built environment (Cox *et al.*, 2015).

### SOCIO-ECONOMIC FACTORS INFLUENCING SOLAR ENERGY USE ADOPTION

Different individual, community or cultural attributes affect an individual's ability to adopt solar energy use within their households. These attributes may be linked to social dispositions or economic state, which limit the adoption of solar energy and consequently negatively affect climate change mitigation strategies (Bandara & Amarasena, 2020).
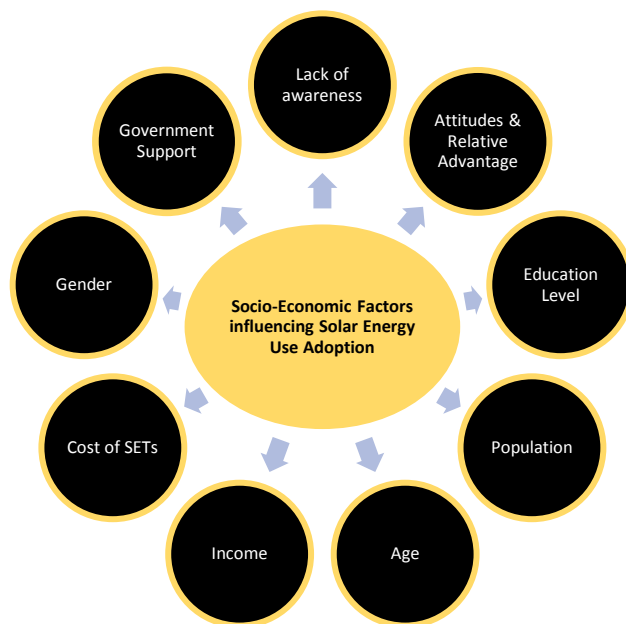


*Figure 5: Socio-Economic Factors Influencing Solar Energy Use Adoption. (Source; Authors)*

*Education Level*

An individual's education level is associated with their level of comprehension and problem-solving capabilities as well as awareness of new beneficial technologies like solar energy technologies. Knowledge therefore is a very powerful tool in inducing adoption as through access to information uncertainties are reduced. In Kenya for example, most people living in marginalized areas lack basic education making their level of comprehension a problem solving in line with renewable energy like solar very limited (Nhembo, 2003).

*Population*

For both commercial and residential built environments, the number of users affect the energy requirements and in turn influencing the type of energy infrastructure required for any space

(Ciriminna *et al.,* 2018). The solar energy technology adopted for a smaller household in most parts of Kenya for instance, may be of lower capacity than that of a household with a larger population or higher number of users. This is primarily because as the energy needs within the different households would differ (Gitone, 2014).

*Age*

According to Nhembo (2003), people of a more advanced age group may not readily take up new innovations due to conservatism but may have more resources to enable them adopt capital intensive technologies like solar energy technologies than younger people. Younger age groups are however more likely to take risks linked with new technologies like SETs. As with the case in Kenya where most people of advanced age have more resources that younger people but are in most cases resistant to new technology and would rather use energy sources they are familiar with despite them not being environmentally friendly.

*Income*

Cox (2016) argues that availability or lack of finances is directly proportional to adoption levels of capital-intensive technologies like Solar Energy Technologies. While a people may be aware of all the benefits of a technology like solar energy in mitigating climate change lack of financing to adopt may still play a major role in impeding the adoption of solar energy use especially within built environments. At a household level, like in most parts of Kenya, efficient appliances are usually not reachable because of high costs of purchase and installation despite being quite cost saving over time (Wall *et al.*, 2021). Bureaucracies and corruption levels in Kenya especially limit access to financing to adopt solar energy in built environments compounding factors affecting adoption of solar energy in built environment especially for low-income earners (George *et al.*, 2019).  Having money however does not always guarantee adoption as rational and priorities on problems like climate change may still impede solar energy use adoption within the built environment especially if one does not perceive climate change or the advantages of solar energy adoption towards mitigation of the same as a problem (Bandara & Amarasena, 2020).

*Cost of SETs*

The price of a technology is one of the main factors affecting innovation adoption by consumers in Kenya. While income levels will influence the affordability of the technology, technologies

need to be reasonably priced to attract buyers whether having high incomes or not (Nhembo, 2003). A higher benefit-cost ratio positively influences consumers' intentions to change from fossils fuel use that leads to change to cleaner energy sources like solar energy in sectors like the built environment. Studies indicate that most consumers are not willing to pay more than 5% comparative rate with the energy source they currently use however cleaner it may be. Solar energy however has high minimum investment required and incentive to improve adoption could go a long way in increasing adoption rates in turn having a positive impact in mitigating climate change (Parsad, Mittal, & Krishnankutty, 2020).

*Gender*

Nhembo (2003) argues that gender either impacts positively or negatively any adoption measures for new technologies. Gender roles like financial providence or workload influence adoption of technologies like SETs. If a man or woman is the primary breadwinner in a household, for example, and deems a SET not important or too expensive, the adoption of that may be faced with resistance. On the other hand, if a man or woman does most household duties and a technology is deemed to reduce his/her workload, chances of high adoption rate for the technology are equally high. In developing countries like Kenya, women mainly do most unpaid workload burden with household organizations taking a male dominance – female subordination type of hierarchical relationship. These results to women taking up poorly regarded tasks in the homes which men rarely regard as labor like fetching water, home management and maintenance, collecting firewood, family care especially children and the old and food preparation among others. Firewood for example is wrongly looked at as a free and collected by women and children, most men may not see the need to adopt more efficient and cleaner technologies as that, according to them, means the women do not have work to do (Zulu *et al.*, 2022).

Women in most parts of Kenya also face many other challenges which bars them from effectively take part in decision making towards adoption of technologies like SETs such as economic independence, education and awareness levels, technical and skills expertise and hierarchical relationship pegging women as subordinates (Nhembo, 2003). While women traditionally have little power to make decisions on technology purchase especially in these developing countries like Kenya, they shoulder the responsibility of managing household energy requirements. This makes them a very crucial gender in helping improve the adoption of solar energy use in built environments to mitigate climate change (Fontana & Natali, 2008).

*Government Support*

While there is need for governments, both international and local, to set up aggressively targets towards universal energy access, policies focusing on readily available clean energy sources like solar energy should be highlighted and implemented to help in mitigating effects of climate change (UNDP, 2012). Financial incentives, programming capabilities and relevant energy infrastructure need to be prioritized and supported by international agencies like IEA and IRENA among others and multilateral organizations to effectively improve adoption of technologies like SETs especially in built environments (Barnes, 2007). Cox (2016) states that most countries and communities lack the ability to influence their people to adopt technologies that can help mitigate climate change like solar energy due to lack of financial support especially in developing countries like Kenya. This financing could be used in giving incentives or creating awareness on importance of adoption of technologies like solar energy in built environments for climate change mitigation. Capacity development through reducing cost of solar energy access and the use of efficient appliances lacks in most built environments for both the private and public sectors coupled with lack of expertise and knowledge on these SETs (Mutea, 2013).

Most governments are unable to effectively leverage on the expertise of private sectors though public-private partnerships (PPPs) which can greatly help drive adoption strategies for solar energy use in built environments (IRENA, 2019). Political challenges also affect adoption of solar energy use in the built environment. According to George *et al.*, (2019), has in recent years experienced political instability which results in lack of commitments from stakeholders on push for adoption of solar energy. The country has also been lacking solid and credible systems of tracking and certifying SETs in the built environment. Corruption results into systems that are not transparent and therefore enforcing guidelines and regulations becomes an uphill task towards adoption of solar energy use in the built environment (IRENA, 2018).

*Lack of Awareness*

Sofie (2018) argues that public awareness on solar energy use in built environments for climate change mitigation is a major impediment for adoption of solar technologies in Kenya. Most communities in Kenya especially in rural areas lack information on solar energy use and most especially effects of climate change that would motivate them to adopt solar energy to mitigate the same. A lack of awareness on the extent to which climate change has affected or can affect various aspects of their livelihoods also limits the extent to which these communities increase adoption of solar energy use in built environments (IRENA, 2019). A lack of awareness on

energy efficient appliances is also limiting to the end-users' decision making while purchasing appliances for use in their households. The degree of awareness of a new technology especially its disadvantages and advantages influence adoption rates as information gaps reduce the acceptance levels of any technology (Zulu *et al.*, 2022). Rejection or adoption of any technology starts with the consumer's awareness of the technology. The more knowledgeable a consumer is about any technology therefore, the more willing they are to adopt (Sofie, 2018).

*Attitudes and relative advantage*

In most commercial spaces in Kenya, developers and owners are not motivated to invest in energy efficient appliances in the spaces as the investments cost for them outweighs the benefits since, they look at it as benefits going to the tenant as opposed to benefits towards mitigating climate change (Zulu *et al.*, 2022). Relative advantage is the level in which an innovation or technology is seen to be better than that which it supersedes and is mainly measured using economic terms like convenience, socio-prestige factors as well as satisfaction. A high rate of adoption for any technology is experienced with a high rate of relative perception (Wall *et al.*, 2021)

Several researchers have proven that consumer expectations and perceptions on the benefits or lack thereof of a technology like SET form the main points relating to attitudes towards the technology and directly influence adoption rates (Sofie, 2018). A perceived ease of use for any technology equally influences people's willingness to take up new technology (Zulu *et al.*, 2022). The degree to which a consumer can easily comprehend, use, and maintain a new technology is generally, what is referee to as ease of use. Understanding living standards and way of life of a consumer can better equip manufacturers, built environment professional and governments to better create awareness that can create positive attitudes towards adoption of solar energy use in built environments as a way of mitigating climate change (Gitone, 2014)

## CONCLUSION AND RECOMMENDATIONS

Of these identified socio-economic factors influencing adoption of solar energy use in the built environment towards mitigating climate change in Kenya, the focus on encouraging or dealing with them seem to be on improving governments supports, and creating awareness through education and awareness campaigns (Sofie, 2018). A combination of appropriate guidelines and regulations, energy financing, awareness campaigns, pricing technologies right and capability and capacity building within the built environment in Kenya are ways that these barriers to adoption can be overcome (George *et al.*, 2019). A change of attitude on solar energy use

adoption in the built environment requires appropriate regulations and most importantly training and awareness and installation, use, maintenance, advantages and disadvantages of SETs and more so how climate change affects individuals and the importance of solar energy us in mitigating the same (RECP, 2018).

Concerning high costs of installation, facilitating capital financing and creating a good environment for more investors of SETs would go a long way in improving rates of adoption in the country (Cox, 2016). There are a number of international funds providing financing for energy efficiency initiatives, such as the Renewable Energy and Energy Efficiency Fund set up by UNDP and a number of Climate Investment Funds set up by the Word Bank Group (UNDP, 2012). Women are the main users of energy and should be involved in decision making on energy uses. Women drive most economies and it goes without saying that they would drive adoption rates for SETs within built environments if adequately trained on advantages of SETs in mitigating climate change as well as being economically empowered (Nhembo, 2003). The widespread adoption of solar lamps has been achieved in most parts of Kenya through training of local women and through peer training women have been able to increase use of solar lamps in household and even in SMEs like retail shops and market places (SusWATCH Kenya, 2020).

Cox *et al.*, (2015) argue that in order to change the global energy system in future decades, it is important for the international community to unite in placing greater emphasis on adoption of cleaner energy sources like solar energy in various sectors like the built environment to mitigate climate change. There is need to improve SETs access in built environments in low-income countries like Kenya to increase availability to millions of the population who experience energy-poverty severely though inadequate, unreliable and sometimes very expensive energy sources. An increased adoption of SETs within Kenyan built environment spaces would directly reduce the amount of GHGs gases released by the sector and contribute to mitigating climate change (Barnes, 2007).

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## Digitization Of Evidence and Life Insurance Fraud Case Clearance Among Life Insurers in Kenya

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### Abstract

The purpose of this study was to examine the relationship between digitization of evidence and how they influence insurance fraud cases clearance among Life Insurance Companies in Kenya. The study was anchored on the Adaptive Structuration Theory. The theory has never been used extensively to understand fraud case clearance hence this study made a significant theoretical contribution by using the theory to understand fraud case clearance. A descriptive survey design that utilizes quantitative research was adopted to investigate the variables. Primary data was collected using structured questionnaires while secondary data was collected from the official fraud data for the years 2018 and 2019 from the 21 life insurance companies with their head office in Nairobi. Data were analyzed using the latest Statistical Package for the Social Sciences (SPSS) version V28. Descriptive statistics namely frequencies and percentages were conducted to understand the rate of fraud case clearance. Inferential statistics such as the Spearman correlation coefficient, $\rho$, was also applied to test the relationships between the independent and dependent variable. The findings were presented in figures and tables from which conclusions were drawn. The findings revealed a clearance rate of 75.68%. The results of correlation analysis from various components the digitization of evidence yielded a mix of positive and negative correlation coefficients. This study thus recommends the use of digital systems in fraud investigation, as well as programs that provides professional training to investigators on forensic evidence gathering and analysis. Future research that use both quantitative and qualitative methods to investigate the relationship between digitization of evidence, and fraud case clearance are recommended.

**Key words:** *Digitization of evidence, life insurance, fraud, case clearance*

### INTRODUCTION

Cases of insurance fraud are becoming more prevalent. The average fraud cost per U.S family is estimated to be between $400 and $700 per year over five years between 2013 and 2017 (Insurance Information Institute, 2020). Further, fraud costs the combined insurance industry billions of South African Rands yearly (Association for Savings and Investment South Africa, 2021).

The Uganda Insurance Fraud Investigation Unit (IRAU) investigated suspicious fraud reports totaling UGX.11, 230,175,000 (Insurance Regulatory Authority of Uganda, 2021). They also investigated suspicious fraud reports of UGX. 4,020,625,000/= in 2020, as opposed to the UGX 5,521,556,000 in 2019 (Insurance Regulatory Authority of Uganda, 2020). The Unit also

recorded cases totaling UGX 2,490,032,733= from insurance companies, intermediaries, and members of the general public (Insurance Regulatory Authority of Uganda, 2018).

In Kenya, 106 insurance fraud cases were reported in 2015, up from 87 in 2014 (Insurance Regulatory Authority, 2016). The Insurance Fraud Investigation Unit (IFIU) also documented a 60 percent rise in recorded insurance fraud cases in the first quarter of 2016 compared to 2015 (Insurance Regulatory Authority, 2016). The Unit also reported 91 cases of insurance fraud in 2019, compared to 87 similar occurrences in 2018. Theft by insurance agents and fraudulent claims in life insurance companies accounted for 52% of all fraud cases in 2019 (Insurance Regulatory Authority, 2016). The increase in these fraud cases can contribute to inefficiency in case clearance among life insurance companies in Kenya.

There is little literature that addresses the relationship of digitization of evidence in an insurance fraud case context (Carter & Carter, 2016; Mancik et al., 2018; Yuriy & Tatiana, 2019). The studies have not established the relationship between the digitization of evidence and fraud case clearance. However, literature on cases clearance in other crime typologies such as homicide, rape, and burglary is plentiful, and a positive correlation between the digitization of evidence and fraud cases clearance has been exhibited (Baskin and Somers, 2020; Ribaux & Souvignet, 2020). A review of the existing literature found that digitization needed ethical consideration among the staff to reduce fraud cases (Zarif, 2021).

This study sought to examine the extent of fraud case clearance using the official fraud data for 2018 and 2019 to reveal the fraud case clearance rate. The study also sought to fill the research gap by understanding the relationship between the digitization of evidence and how they influence fraud case clearance among life insurance companies in Kenya.

## LITERATURE REVIEW

### Rate of case clearance

Different crime clearance rate variability is the perception that cases are more likely to be cleared differently (FBI, 2020; Sakiyama et al., 2010a). In Nevada, clearance rates are higher for violent crimes (43%) than for property crimes (21%) (Sakiyama et al., 2010b). The murder clearance rate (80%) is the highest in the USA, and motor vehicle theft (7%) is the lowest. As such, it is probable to presume that fraud clearance rates are likely different from other crime types.

Therefore, an analysis should examine the extent of fraud case clearance among life insurance companies.

The available studies have not examined the clearance rate of life insurance fraud cases. The existing literature has focused on homicide, rape, and burglary case clearance rates, but efforts to determine the rate of fraud case clearance are rare. Even in cases where scholars have documented case closure, they have only focused on crimes investigated by law enforcement agencies (The Federal Bureau of Investigations (FBI), 2020). This study advanced the knowledge of life insurance fraud by examining the clearance rates for life insurance fraud cases in Kenya and evaluating whether they were significantly higher or lower when compared among insurance companies as well as when compared to other rates of cases clearance of various typologies for example, violent at 43% and property crimes at 21%.

## Digitization of evidence and fraud cases clearance

Digitization is the high-tech development that involves creating, exchanging, and sharing significant volumes of data (Audrin, 2022). Digitization involves innovations and organizational change dated to 2010 (Brynjolfsson & McAfee, 2011). Digitization relates to encoding data and transforming a frequency into a digital signal. Therefore, digitization denotes putting into digits. Digitization deals with data management and conserving physical documents digitally (Arntz, Gregory, & Zierahn, 2016).

Literature does not define digitization properly though scholars link various types of digital changes such as automation, advanced robotics, augmented reality, Big Data, Cloud Computing, and social networks to digitization (Arntz, Gregory, & Zierahn, 2016; Autor, 2015; Brynjolfsson & McAfee, 2011; De Mauro, Greco, & Grimaldi, 2016; Armbrust et al., 2010; Qian, 2009; McAfee, 2009). In other words, digitization is an all-encompassing word for scientific change and broad use of data.

As emphasized, the reality of digitization is centered on electronic data, and organization operations are associated with digitization. The above notion is not an exhaustive list of what digitization involves but offers a demonstration of the extent of changes in business models, organizational structure, and career transformation (Arntz, Gregory, & Zierahn, 2016; Brynjolfsson & McAfee, 2011). Digitization is transforming the business model of insurers as well as their fraud investigations by boosting evidence collection, processing, and analysis

(Bountouri, 2017). Transitioning from traditional paper-based identity verification to embracing digitization improves promptness associated with high fraud cases clearance rate.

According to Bountouri (2017), investigation teams need to create, exchange, and share significant volumes of data by harnessing the power of digitization evidence. They should work smarter in collecting, processing, and analyzing evidence to enable high case clearance within the confines of often scarce resources. Progressive financial institutions are keenly considering innovative techniques for this achievement. One of the techniques is by digitization of evidence and automation of processes. Given the large volumes of data, digitization is a valuable solution to create, exchange, and share data making materials accessible, searchable, and retrievable through the Web (Strutynska, 2019).

Examples of digitized evidence in an insurance institution include contract documents, letters, and e-mails or information in personal computers, computer files, and digital financial records (Audrin, 2022). Insurance companies should digitize processes that would provide the ability to swiftly respond when fraud is detected (Gathu, 2018). This study focused on how digital technologies impact fraud case clearance. Insurers are required to contemplate new data solutions and workflow streamlining. The ability to create, exchange, and share significant volumes of data is critical to case clearance, which is a goal of the investigation teams.

Audrin (2022) suggests that digitization is fundamental in organization processes. With a criminological practice lens, it would also be worth investigating the interactions between humans and technology. Based on the previous literature, this study suggested that digitization shapes fraud case clearance (Brynjolfsson & McAfee, 2011). The study specifically investigated how innovative ways of digitization, digitized evidence, and digitized investigation workflow is associated with fraud cases clearance. Thus, the study had a more complete understanding of the relationship between digitization and fraud case clearance.

Previous studies hail digital technologies for their capacity for storage and the ease of disseminating critical evidence safely (Strutynska, 2019; Adner et al., 2019). Digitized records enable collection, review, and discovery of evidence, a significant role in achieving fraud case clearance. Previous studies also show that digitization improves the tracking and control of active files and content (Adner et al., 2019). It is also easier to connect to different systems. Therefore, digitized evidence may increase fraud case clearance.

## Theoretical Framework

Digitization of evidence and fraud case clearance have a theoretical connection. This study was anchored on adaptive structuration theory to understand the people, processes, technology, and structures facilitating their interaction (Audrin, 2022). The theory postulates that employees affect results and deliberately adopt procedures and resources to accomplish objectives such as fraud case clearance (Turner et al., 2019). Technology, therefore, is essential for productivity, efficiency, and satisfaction in organizations. Failure to achieve desired objectives reflects inadequacy in the technology, its implementation, or its delivery to the organization. The study of technology is an opportunity for success, and social practices moderate its effect on behavior. Adaptive structuration theory suggests that structures in technology in action are constantly intertwined and influence each other (Audrin, 2022).

This theory is relevant to this study because it was used to comprehend the role of digitization of evidence in case clearance (Daltro et al., 2020). It provides a people, process, and technology (PPT) framework that examines ways to streamline investigations, digital evidence collection, and analysis. The theory recognized the advanced technologies and interactions with processes and people to ensure efficiency in fraud case clearance. The adaptive structuration theory also provided an understanding of new forms of technology to digitized evidence (Daltro et al., 2020).

## MATERIALS AND METHODS

This study adopted a descriptive survey design that involves quantitative approaches in research. The quantitative research approach characteristically reduces data to means, medians, correlations, and other summarizing statistics (Leedy & Ormrod, 2014). The target population was the head of investigations departments in all 21 life insurers in Kenya. The unit of analysis was a company, and units of observation were the head of the investigation and fraud records. Only 11 insurers completed and returned the questionnaires from the 21 life insurance companies.

Structured questionnaires collected primary data on the independent variable (digitization of evidence) by the head of investigation departments (and equivalent departments). The questionnaires collected data on the perceptions of digitization. The digitization of evidence

utilized a 5-point Likert scale of the extent of agreement (1- strongly disagree, 2- disagree, 3- neutral, 4- agree, and 5- strongly agree).

Secondary data on insurance fraud cases (dependent variable) was from the official fraud data for 2018 and 2019. The data from official records of the reported fraud incidences of the 21 life insurers in Kenya were for 2018 and 2019. The case clearance was as indicated below.

Cases clearance (%) = (A + B) / (C + D) * 100

Where;

A = Cases solved within the period

B= Cases closed or placed in suspended status in the period

C = Cases opened within the period

D= Cases reopened within the period

The Spearman correlation coefficient tested the relationships at both variable and sub-variable levels.

## RESULTS AND DISCUSSION

### Rate of Life Insurance Fraud Case Clearance

The case clearance analysis comprised computing the sum totals of the cases that were opened; re-opened; solved; cases disposition; and closed cases. This information is summarized in Table 1.

Table 1 Summary of Categories

| Category of the case | Quarter 1 | Quarter2 | Quarter3 | Quarter4 | Total |
|---|---|---|---|---|---|
| Cases Opened | | | | | |
| 2018 | 376 | 164 | 268 | 230 | 1,038 |
| 2019 | 398 | 579 | 382 | 188 | 1,547 |
| Cases Reopened | | | | | |
| 2018 | 197 | 35 | 15 | 25 | 272 |
| 2019 | 156 | 14 | 4 | 2 | 176 |

| Cases Solved | | | | | |
|---|---|---|---|---|---|
| 2018 | 289 | 165 | 223 | 226 | 903 |
| 2019 | 232 | 421 | 360 | 164 | 1,177 |
| Cases Disposition | | | | | |
| 2018 | 195 | 35 | 15 | 26 | 271 |
| 2019 | 153 | 13 | 4 | 1 | 171 |
| Cases Closed | | | | | |
| 2018 | 93 | 67 | 95 | 90 | 345 |
| 2019 | 103 | 121 | 107 | 107 | 438 |
| Total | 2,192 | 1,614 | 1,473 | 1,059 | 6,338 |

The findings in Table 1 suggest that the majority of the cases were handled in the first quarter while the least was registered in the last quarter. Further, a computation of fraud case clearance rate across life insurance companies was conducted based on the sample of $n = 11$ respondents. This information was summarized in Table 2.

Table 2: Analysis of Life Insurance Fraud Case Clearance Rate

| Clearance rate | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| 45.83 | 1 | 5.9 | 9.1 | 9.1 |
| 61.70 | 1 | 5.9 | 9.1 | 18.2 |
| 64.00 | 1 | 5.9 | 9.1 | 27.3 |
| 70.34 | 1 | 5.9 | 9.1 | 36.4 |
| 75.60 | 1 | 5.9 | 9.1 | 45.5 |
| 80.19 | 1 | 5.9 | 9.1 | 54.5 |
| 86.40 | 1 | 5.9 | 9.1 | 63.6 |
| 92.34 | 1 | 5.9 | 9.1 | 72.7 |
| 93.69 | 1 | 5.9 | 9.1 | 81.8 |
| 96.45 | 1 | 5.9 | 9.1 | 90.9 |
| 100.00 | 1 | 5.9 | 9.1 | 100.0 |
| Total | 11 | 64.7 | 100.0 | |

The findings in Table 2 revealed the highest clearance rate of 100% and the lowest of 45.83%. The mean values computed from case clearance rate computation were summarized in Table 3.

Table 3: Mean Case Clearance Rate

| Quarter | 2018 | 2019 | Overall |
|---------|------|------|---------|
| Q1 | 66.67% | 60.46% | 63.57% |
| Q2 | 73.45% | 75.92% | 74.69% |
| Q3 | 81.66% | 77.31% | 79.49% |
| Q4 | 91.45% | 78.52% | 84.99% |
| Overall | 78.31% | 73.05% | 75.68% |

The findings in Table 3 discovered a mean rate of fraud case clearance of 75.68% for the life insurance companies in Kenya. From the study, the rate of fraud case clearance appears to be higher compared to rates of case clearance in violent and property crimes. Sakiyama et al (2010b) found that the clearance rates for violent and property crimes was (43%) and (21%), respectively.

### Relationship between Digitization of evidence and Fraud Case Clearance

The study sought to examine the relationship between digitization of evidence and fraud cases clearance rate. Correlation analysis was conducted to determine the nature of the relationship between digitization of evidence and fraud case clearance rate. The findings were summarized in Table 4.

Table 4: Correlation analysis between Digitization of Evidence and Fraud Case Clearance

|  |  | Top management commitment | Work experience | Digitization of evidence | Case clearance |
|--|--|---------------------------|-----------------|--------------------------|----------------|
| Digitization | Correlation Coefficient | .332 | .183 | 1.000 | -.434 |
|  | Sig. (2-tailed) | .319 | .590 | . | .182 |
|  | N | 11 | 11 | 11 | 11 |

| Case clearance | Correlation Coefficient | .285 | .037 | -.434 | 1.000 |
|---|---|---|---|---|---|
| | Sig. (2-tailed) | .395 | .915 | .182 | . |
| | N | 11 | 11 | 11 | 11 |

*Note.* Spearman's rho($\rho$) coefficient was used in the computation of the correlations.

** Correlation is significant at the 0.01 level (2-tailed).

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

*N* = 11

The results indicated that the digitization of evidence exhibited a negative Spearman correlation coefficient. However, this should be interpreted with caution because the correlation coefficient was not statistically significant at the 5% level (r(9) = -.434, p > .05), thus limiting its generalizability to a larger population.

Further, a Spearman correlation analysis ascertained the level of associations between all six (6) constructs of digitization of evidence and fraud case clearance rate. Table 5 summarize the findings.

Table 5: Correlation between Digitization of Evidence and Fraud Case Clearance Rate

| Sub variable | Spearman Correlation | Sig. (2-tailed) |
|---|---|---|
| Digital systems are useful for documentation related to fraud investigation | 0.7979 | 0.0057 |
| Digital investigation systems enable easy retrieval and sharing of documents among investigators | 0.4181 | 0.2292 |
| The investigators depend on computer-assisted data analysis to collect evidence of fraud. | 0.5790 | 0.0795 |
| Digital technologies are useful in streamlining investigation workflow and disseminating evidence safely | -0.2479 | 0.4898 |
| The digital ensures timely follow-up on investigation status. | -0.058 | 0.8735 |

| Innovative ways of digitization are highly embraced in our organization. | 0.4045 | 0.2462 |
|---|---|---|

** Correlation is significant at the 0.01 level (2-tailed).

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

$N$ = 11

The results above depict a mix of both negative and positive correlation coefficients. Spearman correlation coefficient associated with the notion that digital system is of use for documentation related to fraud investigation was the only sub-variable that was statistically significant at a 5% level($r$(9) = .7979, $p$ < .05).

## Discussion of findings on the relationship between digitization of evidence and life insurance fraud case clearance rate

The findings suggest that the idea that digital systems are of use in the documentation of fraud investigation was statistically significantly related to fraud case clearance rate in the sampled insurance companies. Furthermore, the findings reveal a mix of both positive and negative correlation coefficients with case clearance rate. Accordingly, the nexus between these two constructs corroborates the postulations of the Adaptive Structuration Theory in this study which seeks to understand the people, processes, and technology and the structures that emerge in human action interact with processes and technology. AST provides a general approach to organizations' construct and analysis of their differences.

Accordingly, the positive correlation coefficient reaffirmed what was noted earlier in the empirical study by Bountouri (2017), arguing that digitization can help improve case clearance outcomes. On the flip side, one of the limitations of the present study is the use of subjective measures such as the respondents' perceptions. Therefore, it was difficult to determine bias by the respondents.

## CONCLUSIONS AND RECOMMENDATIONS

The study examined the relationship between the digitization of evidence and fraud case clearance rate. The findings revealed both positive and negative correlation coefficients with case clearance rate. Based on the study findings, digital systems are beneficial in fraud investigation.

Digitization is a valuable solution for creating and sharing data. Given the organization's large volumes of data, digitization can ensure that the data is accessible, searchable, retrievable, and secure. Investigation teams can conveniently collect, process and analyze evidence to enable high case clearance within the confines of often scarce resources.

The study examined the relationship between the digitization of evidence and fraud case clearance among life insurers in Kenya. Based on the findings, the study recommends that future research may employ quantitative and qualitative methods to investigate the relationship between digitization and fraud case clearance. Further, insurance companies can deploy digital systems in investigating life insurance fraud. A study can also determine the contributions of digitization of evidence and other correlates to the fraud cases clearance rate.

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Contribution of Green Promotion on Consumer Buying Behavior in 4-5 Star Restaurants in Nairobi County, Kenya.

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## Abstract

Green promotion refers to an innovative way of informing and creating awareness among consumers to be environmentally responsible and consume green products. Consumer buying behavior refers to the activities and experiences of restaurant guests who engage in purchasing, consuming and disposing of goods and services. The purpose of this study was to examine the contribution of green promotion on consumer buying behavior in 4-5- star restaurants in Nairobi County, Kenya. The study adopted a descriptive survey design where a sample size of 19 restaurants were sampled in Nairobi County. Data collection techniques were questionnaires, observation schedules and secondary data sources which were newspapers, articles and Tv programmes. Qualitative data was coded, analyzed using NVIVO for easier analysis. Quantitative data was analyzed using Pearson Product moment correlation and chi-square to test the strength of the relationship existing between the variables with levels of significance established with a cut-off point of p being < or =0.05 at 95% confidence and significance levels. The findings showed a Pearson correlation co-efficient of 0.98 and p=0.000<0.05 indicating that indeed green promotion has a very strong positive significant effect on consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya. In addition, eco-advertisement had the highest influence on consumer behavior. This implies that consumer buying behavior is influenced by green promotion in 4-5-star restaurants in Nairobi County.

**Key Words:** *environmental sustainability. green promotion, green consumer buying behavior, eco-labelling, eco-friendly*

## INTRODUCTION

Green promotion refers to the process by which restaurants attempt to develop strategies to attract and target environmentally conscious consumers by modifying products, packaging, advertising and labelling to satisfy consumers with minimal environmental impact (Correia, E.; Sousa, S.; Viseu, C.; Larguinho, M., 2023). Green consumer buying behavior refers to the process of a consumer identifying their needs, research alternatives, select appropriate product, purchase, use the product and decide to repurchase the same green product or switch to another based satisfaction or dissatisfaction in solving environmental problems based on past experience (Alhamad, A., Ahmed, E., Akyürek, M., & Baadhem, A., 2023).

Environmental issues arising due to global warming, changing weather patterns have led to increase in pressure on restaurant industry to protect the environment. The restaurant industry has been forced by both government regulations and green consumers to formulate solutions to the present ecological problems they are contributing to like the use of green technology, development and promotion of sustainable products and services, proper waste management and acquiring green certification from credible third parties like ISO 14000 (Mehraj *et al*, 2023). This is a clear indicator green promotion concept is gaining a lot of relevance in the morden age and therefore the restaurant cannot afford to overlook this concept when formulating a marketing strategic plan in ordert to influence consumer purchasing behaviour.

## Background

With the continuous increase in environmental conservation concerns awareness among consumers, their product choices continue to evolve thus influencing their consumption towards green promotion as a way of protecting their environment (Verma & Chandra, 2018). For instance, globally the green consumer market generates $ 290 billion annually with 14% of them representing the eco-tourism market as a result of increased global environmental concerns awareness (Martinez, Angel, & Raquel, 2017). Restaurant consumers are as well shifting towards restaurants that are responding to their environmental needs since in Kenya 50% of consumers prefer natural and organic products (Kenyan Marketing Magazine, 2012). This is a clear indicator that green demographics are increasing in importance and restaurants cannot afford to overlook this ever-growing influential green market niche. Therefore, the restaurant industry can adopt green promotion as a marketing strategy to influence consumer purchasing behavior.

## Link Between Green Promotion and Consumer Buying Behavior

With the increase demand by consumers for restaurants to protect the environment due to global warming and environmental concerns awareness, consumers expect restaurants to be green and failure to offer green promotion will lead to significant losses to green competition pushing restaurant businesses to explore sustainable practices to meet these demands (Mehraj *et al*, 2023). This is because consumers are punishing or rewarding restaurants depending on their environmental sustainability performance in this case buying means spreading positive word of mouth and punishing means refusing to buy products or spreading a negative word of mouth (Srivastava, & Gupta, 2023). This is a clear indicator that consumers are aware of the responsibility of protecting the environment through purchasing eco-friendly products hence the restaurant industry cannot afford to overlook these consumer green needs and wants.

Furthermore, the restaurant industry accounts for one-third of human-caused greenhouse gas (GHG) emissions worldwide hence restaurants need to be proactive in promoting their green efforts to trigger green consumer purchasing behavior (Long, D., West, G., & Nayga, R. M., 2021). This is a clear indicator that the restaurant industry is among the highest contributors to the already dilapidated environmental state we are in today. Therefore, it is essential for the restaurant industry to take environmental stewardship through green promotion in order to communicate their greening efforts to protect the environment so as to influence consumer purchasing behavior.

Restaurant industry can utilize phrases like "green", "natural", "eco or earth friendly", "sustainability" and "sustainable development" as a way of showing their environmental protection stewardship in their integrated communication efforts to trigger green consumer buying behavior (Vesal et al 2021). According to Correia et al., (2023), restaurants can use eco-labels to convey their green efforts by use of image, texts and messages convey their information to consumers and differentiate their products even though green labels do not translate to consumer's purchasing behavior due to mistrust and "green washing". This is a clear indicator that consumers lack confidence in green products since it is hard to establish genuine green products from "green washed" products. Therefore, restaurants should make environmental claims using credible 3rd party certification companies' logo in advertisements like ISO 14000 to assure consumers that they are genuine and not part of fraudulent, dubious, dishonest, insincere and misleading practices (Kahraman & Kazançoğ lu, İ ., 2019).

With the increased environmental concerns among consumers coupled with the highly competitive business environment, restaurant businesses should endeavor to adopt green promotion strategies in order to differentiate their products from their competitors (Silva et al., 2023). This is because consumers tend to perceive those eco-friendly assertions made by restaurants in advertisements and product labelling with green descriptions on their products to be better in terms of quality and safety (Kusmana & Masnita, 2023). This is a clear indicator that the restaurant industry is growing at a first rate and the competition is very stiff and the only way for restaurants to stand out from their competitors is through green promotion to attract and retain green consumers. Thus, it is essential for restaurants to incorporate eco-friendly features in their products and brands to reinforce their eco-friendly strategies to protect the environment so as to attract and retain consumers (Jiang et al, 2023).

## Statement of the Problem

The contemporary issue of the 21st century is environmental sustainability due to increased environmental problems like global warming, floods, droughts and drastic change of weather patterns which is as a result of continuous pollution of the environment with restaurants being major emitters of greenhouse gases by 15% globally (Long, D., West, G., & Nayga, R. M., 2021). With the increasing environmental concerns awareness among consumers has led to consumers to increasingly demand for restaurants to take environmental responsibility through green promotion as a way to show their efforts in averting negative environmental impacts they faced. Furthermore, consumers are preferring natural green products over other conventional non-green products and yet they lack information on where to access these genuine green products due to poor green promotion strategies exhibited by restaurants (Alhamad, A., Ahmed, E., Akyürek, M., & Baadhem, A., 2023). This is a clear indicator that there is growing demand by consumers for restaurants to show their efforts in protecting the environment through visible actions like green promotion. Hence it is essential for the restaurants to demonstrate their environmentally sustainable efforts through green promotion to their consumers so that they can attest of their visible actions.

Furthermore, according to studies conducted by Kamalanon et al., (2022) and Afridi et al., (2023) identified green purchasing inconsistency gaps between consumers showing positive attitude towards green product and not actually purchasing green products in restaurants due to poor green promotion strategies to influence consumer green purchasing behavior thus prompting the study to undertake this study. Therefore, it is essential for the restaurants to adopt visible, strategic and effective green promotion strategies like green branding, green labelling, using labels from accredited 3rd party green certifications like ISO 14000 and green advertisement channels so a s influence consumer to patronize their restaurants.

## Research Hypotheses

$HO_1$: There is no significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya.

$HA_1$: There is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya.

## The Conceptual Framework

| Independent Variable | Intervening | Dependent |
| --- | --- | --- |
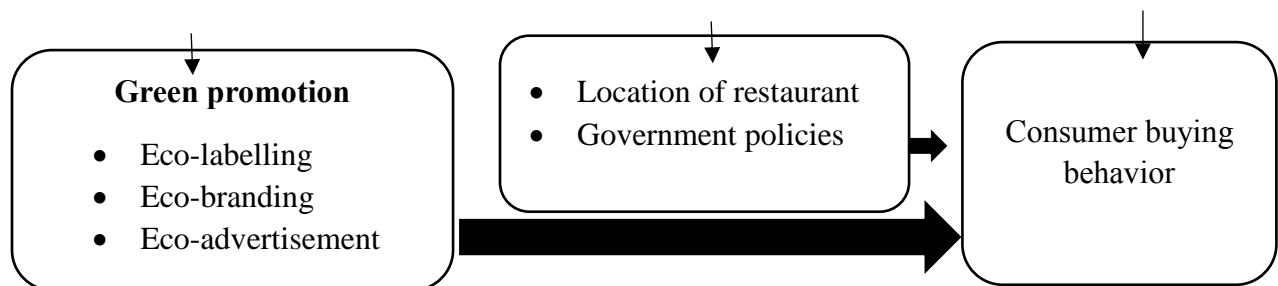
**Figure 1.1: Conceptual framework of Green, Sustainable Practices**

**Sources: Adapted from** (Correia *et al.*, 2023; Alhamad, A., *et al* 2023)

## LITERATURE REVIEW

### Green Promotion

Green promotion refers to marketing strategy initiated by restaurants to convince consumers to buy green products using the environmental sensitivity as the main feature by availing information to consumers of where to obtain green products and services (Fahmi, M. A.,2023). With the continuous increase of consumers recognizing the environmental problems like global warming, green promotion is gaining a lot of importance in restaurant business industry as way to communicate their greening efforts to consumers to attract consumers (Alhamad, A., *et al* 2023). This is because consumers' perception of associating high value to green concepts like green promotion, green labelling, green advertisement and green communication. This is a clear indicator that consumers expect restaurants to utilize green promotion as a tool to communicate their efforts in protecting the environment. Therefore, it is essential for the restaurant industry to adopt green promotion as a marketing strategy to influence consumer buying behavior.

In addition, Ahmed et al (2021) highlighted the importance of the growing need to incorporate green promotion as a strategic marketing plan in restaurants since modern consumers are conscious of their environment by preferring green products. Furthermore, restaurant marketers' actions significantly impact on consumer buying behavior since they act as catalysts to drive green customers to patronize green restaurants through green communication, labelling and advertisement (Hsu, C. L., & Chen, M. C., 2018). This can be achieved through embedding eco-friendly features into the products through green labelling and branding that draw the attention on consumers towards their eco-friendly products and services (Fahmi, M. A.,2023).

According to a study conducted by Karunarathna., et al., (2020), green promotion has a significant impact on consumption of green products. This is a clear indicator that consumers expect restaurants to utilize green promotion as a tool to communicate their efforts in protecting the environment. Therefore, it is essential for the restaurant industry to adopt green promotion as a marketing strategy to influence consumer buying behavior.

According to Correia et al., (2023), the green promotional strategies restaurants can adopt is green communication through advertising social media platforms by use of both verbal and non-verbal tools like text, moving images, sound, images and interactions since they are more appealing and enable consumers to interact with restaurants in communicating their environmental protection efforts. Rahman, Barua, Hoque, & Zahir, (2017), asserted that, even though green advertisement is critical in raising environmental awareness among consumers, restaurants should put more efforts on matching their green assertions with actions like producing actual green products, properly managing wastes, reducing carbon footprint emissions and using green technology so as to convince consumers of their credible and sincere actions to conserve the environment. This is a clear indicator that green advertisement influences significantly consumer purchasing behavior by use of social media platforms which is faster, efficient and effective. Therefore, the restaurant industry can adopt green advertisement as a communication tool in their strategic marketing plan in order to influence consumer purchasing behavior by using social media plat forms to effectively communicate their environmental conservation strategies.

## Consumer Buying Behavior

Consumer buying behavior is the selection, purchase and consumption of goods and services by customers for the satisfaction of their needs and wants (Fahmi, M. A. , 2023).) Green behavioral intention refers to the willingness of consumers to revisit, recommend and pay premiums for services and goods that are friendly to the environment to demonstrate proactive commitment to procure eco-friendly products (Alhamad, A., *et al* 2023). According to Correia et al., (2023), a green consumer associates his or her acts of buying and consuming green products as not only acting in accordance with environmental protection but also as a way of taking environmental personal responsibility to solve environmental problems being faced and not leaving the civic duty to government, environmentalists, scientists and businesses the mandate to protect the environment.

Consumers undergo a complex cognitive, physical and emotional process of selecting, purchasing and disposing green products which fulfill their green wants and needs (Alzoubi et al., 2022). Green consumer buying behavior can be categorized as: the willingness of consumer to behave in an environmentally responsible manner, management of the environment, taking part in civic and eco-friendly practices, intentions to revisit, recommend and pay premiums in green restaurants that offer green promotion and services (González-Rodríguez, Díaz-Fernández, & Font, 2019). As the environmental conservation awareness continues to grow among consumers, their purchasing behaviors and intentions continuous to change in favor of environmentally friendly products by choosing to dine and patronize in restaurants that offer green promotion (Verma & Chandra, 2018). This is a clear indicator that consumers expect restaurants to utilize green promotion as a tool to communicate their efforts in protecting the environment. Therefore, it is essential for the restaurant industry to adopt green promotion as a marketing strategy to influence consumer buying behavior.

## Good Management Theory

This theory aided the study to understand how consumers are influenced by green promotion activities by restaurants. The theory states that the restaurants which have innovative management often seek to incorporate competitive advantage management strategies from practices such as making use of green practices to better serve their customers (Miles & Russell, 1997). This is because in a saturated market situation, where market forces are constantly changing, increasing competition and market differentiation is being harder; companies should seize the opportunity to attract customers, create positive publicity and increases customer loyalty through green promotion by eco-labeling products, eco-branding and environmental advertisement which are superior environmental practices so as to increase their market share (Wilhelm, 2009).

## Research Gap

There are limited studies that have been carried out on effects on green promotion practices on restaurants about customer purchasing behavior in Nairobi City County, Kenya since the existing studies in Kenya have concentrated on Mombasa County and on other subjects like for instance, the study conducted by Gitobu and Njoroge (2015), conducted a study on the adoption of green marketing practices by Mombasa County hotels. This study was confined to Mombasa county hotels and didn't cover Nairobi City County and also it based on the adoption of general green marketing practices instead of strictly focusing on how green practices like green promotion

affects consumer buying behavior, thus prompting the study to undertake these research in order to fill in this gap by examining whether green promotion have an effect on consumer buying behavior in Nairobi County and whether green promotion have a higher quality as compared to non-green promotion.

## MATERIALS AND METHODS

The study used descriptive cross-sectional design to determine whether there is a relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya. The study chose Nairobi County as the area of study because it has the highest number of classified restaurants which are 20 4-5-star restaurants (The-Kenya-Gazette, 2003).

Quantitative and qualitative approach methods were used in this study since they enabled the study to get a clear picture from the respondents of whether green promotion influenced consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya.

Table 1 Summary of Sampling Technique

| Technique | Where applied | Justification |
|-----------|---------------|---------------|
| Census | 4-5-star restaurants | To reduce sampling error |
| Purposive sampling | Restaurant managers, supervisors and waiters | To get critical information from respondents |

A total of 79 employees from 4-5-star restaurants in Nairobi County, Kenya participated in the study.

Table 2 Distribution of the respondents

| Target group population | Target population | Sample size | Percentages |
|-------------------------|-------------------|-------------|-------------|
| Restaurant managers | 20 | 15 | 20 |
| Restaurant supervisors | 40 | 32 | 40 |

| | | | |
|---|---|---|---|
| Restaurant waiters and waitresses | 40 | 32 | 40 |
| Total | 100 | 79 | 100% |

The study used both primary and secondary data collection methods to collect data. The primary data source utilized a structured questionnaire for 4-5-star restaurant employees in Nairobi County, Kenya. A well-structured observation schedule was used to obtain raw data from 4-5-star restaurants in Nairobi County, Kenya. The research instruments comprised of both open and closed ended questions. Secondary sources of data involved retrieving information from research Tv programmes, articles, newspapers, journals, websites, periodicals and book reviews.

Data collection instruments were pre-tested in 1 4-5-star restaurant in Nairobi County, Kenya to eliminate errors, to identify area of improvement and to check on their suitability as research tools. This assisted the study to establish the expected response rate and to modify or eliminate questions which are either not clear or were not in line with the objective of the study.

Content validity of the research instruments was determined by pre-testing the instruments and checking responses against study objectives, conceptual frame work and as guided by the research supervisors. A Pre-test was carried out within Nairobi County in non-participating 4-5-star restaurants in Nairobi County, Kenya. Research assistants were trained on data collection procedures, including clarifying the purpose of the study to the respondents, making suggestions, observing skills and other important inputs. The instruments were administered to the same respondents in non-participating 4-5- star restaurants in Nairobi County, Kenya after thirty days as a test of reliability. The pre-testing data was coded and analyzed to identify and correct the emerging errors. A reliability coefficient of 0.67 was obtained (as shown in table 3) which indicated that the research instruments were reliable according to Griethuijsen and Trimmer (2014), who asserted that Alpha co-efficients ranging from 0.67-0.87 for such studies are reliable and reasonable.

Table 3 Reliability Test Results: Cronbach's Alpha

| Scale | Cronbach's Alpha | No. of items | Comment |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Green promotion | 0.72 | 5 | Reliable |

Both quantitative and qualitative data analysis techniques were used by the study since the data collected was both numerical and narrative. Quantitative data was analyzed using IBM statistical packages for social sciences with levels of significance established using paired tests with a cut-off point of p being < or =0.05 at 95% confidence and significance levels. Qualitative data was analyzed into statements which have high relevance to the objective of the study and was analyzed using NVIVO.

**Table 4 Summary of Hypothesis Testing**

| Null Hypothesis | Test done | Verdict | Result |
|---|---|---|---|
| $HO_1$: There is no significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County | Regression Analysis | <0.05 reject the null hypothesis<br><br>Accept alternative hypothesis<br>>0.05 fail to reject the null hypothesis<br><br>Reject the alternative hypothesis | Determine the relationship between green promotion and consumer buying behavior |
| $HA_1$: There is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County | Regression Analysis | <0.05 Accept alternative hypothesis<br>Reject the null hypothesis<br>>0.05 Reject the Alternative hypothesis<br><br>Accept the null hypothesis | Determine the relationship between green promotion and consumer buying behavior |

## RESULTS AND DISCUSSIONS

### Response Rate

The response rate measured how well the targeted sample size was arrived at.  A high response rate obtained minimized the chances of biased statistics and hence, the study findings are valid and reliable as shown in table 5.

### Table 5: Response Rate

| Questonaires | Frequency | Percent % |
|---|---|---|
| Response | 56 | 71% |
| Non-response | 23 | 29% |
| Total | 79 | 100% |

Out of a total of 79 questionnaires which had been issued to respondents, only 56 were completed which represented a 71% response rate. Response rates approximating 60% for most research should be the study's goal (Mugenda & Mugenda, 2013). This shows that the study met the minimum required response rate to make the results reliable and conclusive. A non-response rate of 29% was found due to respondents not being co-operative.

### Demographic Characteristics of the Study

The study obtained information about the personal data of respondents. The data was related academic level. The quantitative data were presented in the form of tables and pie charts below:

*Academic Level of Respondents*

The results indicated that certificate holders comprise of 25%, 58.9% were diploma holders while 16.1% were Bachelor's degree holder as summarized in figure 1 below. This study implies that the green promotion is being produced in the restaurants since the supervisors and waiters and waitresses who are the policy implementers in the restaurant industry fall under the category of diploma holders who comprise of 58.9%. Since educated employees embrace green practices readily because at diploma level the employees have acquired environmental knowledge on the importance of ecological conservation in the curriculum (Sustainability, 2015).
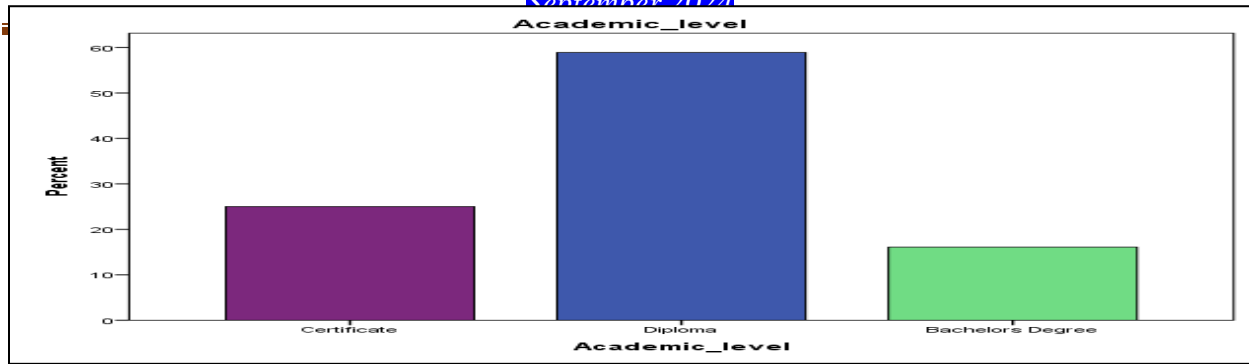
**Figure 1: Academic level of respondents**

Descriptive Statistics of Green Promotion and Consumer

The study shows that 4-5 restaurants in Nairobi City County publish eco-friendly attributes of its products on the co-operative website with a mean of 4.14 and a standard deviation of 0.724. The study indicates that the respondents promote their green achievements and credentials with a mean of 4.07 and a standard deviation of 0.735. With a mean of 4.05 and a standard deviation of 0.724, this indicates that respondents advertise their eco-friendly products by eco-labeling their products. The study shows that the 4-5 restaurants in Nairobi City County publish all their eco-friendly activities on the co-operate website with a mean of 3.88 and a standard deviation of 0.740. The study indicates that the respondents collaborate with environmental groups with a mean of 1.00 and a standard deviation of 0.00. The results imply that green promotion practices have influenced consumer buying behavior except restaurants participating in environmental groups since its mean is below 3.0. These findings are supported by a study conducted by Fahmi et al (2023), which indicated that green marketing have a significant impact on green purchase intention of coffee shops and restaurants in Bandung City, Indonesia.

Table 6: Green promotion descriptive analysis

| Green promotion | Mean | Std. Deviation |
|---|---|---|
| My establishment publishes eco-friendly attributes of its products on the co-operate website | 4.14 | .724 |
| My establishment promotes its green achievements and credentials | 4.07 | .735 |

| | | |
|---|---|---|
| My establishment advertises its eco-friendly products by eco-labeling its products | 4.05 | .923 |
| My establishment publishes all its eco-friendly activities on the corporate website | 3.88 | .740 |
| My establishment collaborates with environmental groups | 1.00 | .00 |

## Cross Tabulation Analysis on Green Promotion Predictors and Consumer Buying Behavior

The study sought to find out whether green promotion predictors have a significant relationship with consumer buying behavior. The results are as shown in 7:

Table 7: Cross tabulation analysis of green promotion analysis

| Variable | $x^2$-value | Df | P-value | Linear by linear Association |
|---|---|---|---|---|
| Eco-labelling | 148.032a | 45 | .000 | .000 |
| Eco-advertisement | 240.112a | 90 | .000 | .000 |
| Eco-branding | 152.323a | 45 | .000 | .000 |

From the analysis, at 5% significant level the results show the P value for eco-labeling, eco-advertisement and eco-branding as follows: 0.000, 0.000, 0.000 and 0.000 respectively. Thus, P<0.005 hence concludes that there is indeed a strong significant association between eco-labeling, eco-advertisement and eco-branding with consumer buying behavior. The results indicate that there is a weak linear by the linear association between eco-labeling, eco-advertisement and eco-branding with consumer buying behavior since their p-values which are: 0.000, 0.000, 0.000 respectively are further from 0.05. Furthermore, eco-advertisement had the highest significant association with consumer buying behavior since it has the greatest Pearson chi-square static compared to eco-labeling and eco-branding. This notion is supported

by a study conducted by Correia et al (2023) indicated that green advertisement has a significant impact on consumer buying behavior with an emphasis of internet being the most appropriate communication channel when advertising.

## Correlation Analysis of the Relationship Between Green Promotion Predictors and Consumer Buying Behavior

The study sought to find out the strength of the relationship between green promotion and consumer buying behavior. The results are as shown in 8:

### Table 8: Correlations

|  |  | Green Promotion | Consumer buying behavior |
|---|---|---|---|
| Green Promotion | Pearson Correlation | 1 | .987[**] |
|  | Sig. (2-tailed) |  | .000 |
|  | N | 56 | 56 |
| Consumer buying behavior | Pearson Correlation | .987[**] | 1 |
|  | Sig. (2-tailed) | .000 |  |
|  | N | 56 | 56 |

[**]. Correlation is significant at the 0.01 level (2-tailed).

From the analysis, the outcome shows a p-value of 0.00 hence there is indeed a positive relationship between green promotion and consumer buying behavior. Furthermore, the study indicates a correlation co-efficient of 0.98 which implies that there is a very strong significant relationship between green promotion and consumer buying behavior since the correlation co-efficient is closer to 1. Therefore, there is indeed a strong positive significant relationship between green promotion and consumer buying behavior. This study implies that restaurants promoting their green aspects have a significant influence on consumer buying behavior. This notion is supported by a study conducted in Sudanese Universities on Masters of Business Administration students by Sidding, Abdel, Abbas, & Thoria in 2017 indicated that green promotion has a strong influence on consumer purchasing intentions.

## Qualitative Analysis of the Influence of Green Promotion on Consumer Buying Behavior

A further qualitative analysis using NVIVO was undertaken in order to determine the role of green promotion on consumer buying behavior. A node analysis shows that green promotion has an influence on consumer buying behavior since it has a frequency coding reference of 6. These results are in agreement with the correlation analysis and descriptive analysis of structured observation schedules' results that indeed green promotion has a positive influence on consumer buying behavior. This study is supported by a study conducted in India on 238 students confirms that indeed green promotion influences consumer buying behavior since 96% of them agreed that they preferred promotion campaign to protect the environment (Ranjana, 2016).

**Table 9: Node matrix analysis of green promotion and consumer buying behavior**

| Objective | Coding references count |
|---|---|
| Green Promotion | 19 |

A further Text search Query was conducted and the results are as shown in word tree Figure 4.6

## Word Tree Text Search Query Results for green promotion and consumer buying behavior

**Figure 2: Word Tree Text Search Query Results for green promotion and consumer buying behavior**

*Word Tree analysis, shows that green restaurant promotion influence consumer buying behavior since the respondents from the secondary sources of data indicated that restaurants which utilized all green marketing activities design to attract environmentally conscious consumers by :promoting the green activities of the restaurant, by creating awareness among consumers through emphasizing the green products they are offering through green product labelling, green advertising through social and mainstream media and aggressive green branding leads to high sales turnover rate because they build a restaurants' green image on consumers' minds and attract green market niche.*

**Table 12: Summary of Hypothesis Testing**

| Null Hypothesis | Test done | Verdict | Results |
|---|---|---|---|
| $H0_1$: Green promotion has no significant contribution to the consumer buying behavior of 4-5-star restaurants in Nairobi County, Kenya. | $H0_1$, P-value $0.001 < 0.05$ | **($HA_1$) was accepted** ($H0_1$) was rejected | There is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County |
| $HA_1$: Green promotion has a significant contribution to the consumer buying behavior of 4-5-star restaurants in Nairobi County, Kenya. | $H0_1$, P-value $0.001 < 0.05$ | **($HA_1$) was accepted** ($H0_1$) was rejected | There is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County |

The findings presented a p-value of (0.001) which was less than 0.05 as shown in table 2.0. The alternative hypothesis was accepted while the null hypothesis was rejected, indicating that, there

is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi City County, Kenya. This means that, consumer buying behavior are influenced by green promotion in restaurants in 4-5-star Nairobi County, Kenya.

## Discussion

The study sought to determine the association between green promotion and consumer buying behavior. A Pearson product moment correlation showed a P-value of 0.001 showing that there is indeed green promotion has a positive significant association with consumer buying behavior of 4-5-star restaurants in Nairobi City County. This is a clear indicator that green promotion plays a very significant role that influences the consumer buying behavior in 4-5-star restaurants in Nairobi City County. This statement is supported by EunHa and SooCheong (2010) who asserted that green promotion to diverse green market segments is an important green practice since it has a great influence on consumers' purchasing behavioral intention towards a restaurant. These results are supported by a study conducted by Correia *et al.*, (2023) who asserted that consumers with more pro-environmental attitudes are more receptive to restaurants' green promotional strategies hence green promotion has a significant effect on pro-environmental consumer purchasing behavior.

A cross-tabulation analysis showed a P-value of 0.000 indicating that eco-labeling, eco-advertisement, and eco-branding have a significant association with consumer buying behavior. Though eco-advertisement had the highest influence on consumer buying behavior. This is a clear indicator that based on the cross-tabulation analysis results, eco-advertisement had the most significant influence on consumer buying behavior compared to eco-labelling and eco-branding.

## CONCLUSIONS AND RECOMMENDATIONS

The objective of the study was to determine the relationship between green promotion and consumer buying behavior in 4-5- star restaurants in Nairobi County, Kenya. The findings showed an R2= 18%, df=1 and p=0.001<0.05 indicating that indeed green promotion have a positive significant effect on consume buying behavior in 4-5-star restaurants in Nairobi County, Kenya. This implies that consumer buying behavior is influenced by green promotion in 4-5-star restaurants in Nairobi County. Therefore, restaurants should endeavor to incorporate green promotion as part of their green marketing strategy since it has a significant impact on consumer buying behavior.

A cross-tabulation analysis showed a P-value of 0.000 indicating that eco-labeling, eco-advertisement, and eco-branding have a significant association with consumer buying behavior. In addition, eco-advertisement had the highest significant association with consumer buying behavior since it has the greatest Pearson chi-square static compared to eco-labeling and eco-branding. Therefore, restaurants should emphasize more on eco-advertisement when communicating to green customers since it has more significant impact on consumer buying behavior.

Based on the findings of study, the following conclusions were made: Firstly, green promotion contributes significantly on consumer buying behavior in 4-5-star restaurants in Nairobi County

In addition, green advertisement has the greatest influence on consumer buying behavior compared to the green branding and green labelling

Based on findings of study, the following recommendations were made: restaurant owners should come up with green promotion since they have a positive significant effect on the buying behaviors of the consumers

In addition, restaurant management should put more efforts in green advertisement by embedding product eco-friendly features on the adverts since it has the most significant influence on consumer buying behavior as compared to green ambience and green labelling and green branding moreover so as so as to enhance their income and obtain a green image.

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## Amplifying the power of Art in STEAM: A descriptive analysis of art through design attributes in STEAM activity system

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### Abstract

The purpose of this study is to highlight the importance of 'Art' within the STEAM framework by enhancing instructional processes in both art and design, and science academic silos, thereby enriching the principles of Education for Sustainable Development (ESD). Despite being a vital component of STEAM framework, 'Art' is often undervalued by students and some lecturers in science departments within Uganda's higher education institutions. Using a narrative research design, this study involved conducting interviews and reviewing documents to gain a deep understanding of the lived experiences of purposively selected lecturers and students from both art and design and science disciplines regarding the role of 'Art' in STEAM education. The findings revealed that most students and lecturers in science academic silos perceive 'Art' as an unimportant subject with minimal relevance to science. In contrast, those from art and design disciplines recognized art through design as crucial for enhancing creative thinking capabilities in science fields. The study concluded that there is a significant lack of reflective understanding among science students and lecturers about the potential of 'Art' within STEAM. Art, through design, promotes a 'dialogic' approach that fosters organic linkages in problem-solving processes, a critical element that could benefit both academic domains. The study recommends fostering internal cross-pollination of knowledge by encouraging students to enrol in courses across both art and design and science disciplines. This would not only enhance students' thinking capabilities but help them appreciate how these disciplines can complement each other, to promote mutual appreciation and collaboration, thereby supporting the STEAM education system and the principles of Education for Sustainable Development (ESD).

Key words:  STEAM, Design, SDGs, Education for Sustainable Development (ESD), Art

## INTRODUCTION

Higher institutions of learning in Uganda and beyond have strategically advocated for student-centered learning approaches. These approaches traditionally have often been confined within distinct academic silos, limiting cross-disciplinary interaction. However, effective learning should transcend these barriers, enabling information cross-pollination beyond distinct academic silos.

The advent of the STEAM (Science, Technology, Engineering, Arts, and Mathematics) education model has enhanced pedagogical activities in the teaching space. Despite its potential, the practical application of STEAM within faculties, schools, and departments has not received sufficient attention. In many instances, STEAM remains confined to specific academic bubbles, particularly within the science disciplines, which often marginalizing the 'Arts' component in their learning journeys. Yet, the goal of education is to impart knowledge and skills that nurture learners' innovative capacities. This narrow focus undermines the holistic goal of education, which is to impart knowledge and skills that foster innovative capacities in learners.

Achieving this goal requires educational strategies that empower learners to make informed decisions and take responsible actions. In alignment with Sustainable Development Goal 4 (SDG4), which aims to "ensure that all learners acquire the knowledge and skills needed to promote sustainable development" by 2030 (Leicht, Heiss & Byun, 2018), Uganda's education system has progressed in embedding the principles of Education for Sustainable Development (ESD) principles into academic programs.

UNESCO (2014) defines ESD as education that enables individuals to acquire the knowledge, skills, attitudes, and values necessary for a sustainable future. López-Alcarria, Olivares-Vicente, & Poza-Vilches (2019) emphasize that ESD requires the creation of interactive, learner-centered teaching and learning environments. It demands an action-oriented, transformative pedagogy that supports self-directed learning, participation, and collaboration. ESD calls for problem-orientation, inter- and trans-disciplinarity, and the integration of formal and informal learning to develop key sustainability competencies. Various educational approaches—such as active learning, reflective learning, collaborative learning, experiential learning, problem-based

learning, and interdisciplinary learning—align with ESD principles to enhance the teaching and learning process.

In this context, many higher institutions in Uganda, such as Kyambogo University and Makerere University, have adopted educational strategies that promote student-centered learning. These strategies foster self-directed learning and collaboration, inter- and trans-disciplinarity, enabling learners to acquire holistic and sustainable learning experiences. However, such collaboration and interdisciplinarity are often more evident in grant research proposals than in internal interactions between departments, faculties, schools, and colleges during teaching and learning processes.

Despite logistical challenges hindering the smooth implementation of student-centered learning, this strategic direction is rooted in the capacity of learning systems to provoke independent reasoning, problem-solving, and critical thinking (Froyd & Simpson, 2008). Student-centered learning, according to Brown (2008), McCombs & Whistler (1997), and Weimer (2002), is based on the constructivist philosophy of teaching, where learners acquire knowledge through doing and experiencing rather than relying solely on the teacher's expertise (Brown, 2008; Olusegun, 2015). From a social constructivist perspective, knowledge is constructed individually and collectively through an active process of linking new ideas with existing knowledge (Kelly, 2012; Spivey, 1997; Polkinghorne, 1992).

Instructional design processes, which involve mental activities generating intellectual entities, ensure that all important information is considered in the context of instructional challenges. To enhance instructional processes that incorporate inter- and trans-disciplinarity, the STEAM instructional approach was developed. This approach weaves the complex tapestry of learning into a comprehensive framework encompassing various academic fields to promote sustainable development.

The STEAM activity system provides access points for students to embrace collaboration, engage in experiential learning, and apply problem-solving approaches. It integrates elements of science, technology, engineering, art, and mathematics in the learning process. The effectiveness of STEAM as an instructional design approach depends on how well these diverse elements are integrated. Poor integration can result in learners failing to grasp how each individual academic field contributes to the STEAM activity system.

## Statement Problem

In Uganda and beyond, many higher learning institutions have embraced student-centered learning approaches in theory, yet practical implementation across faculties, schools, and departments remains inconsistent. Despite efforts to promote Science, Technology, Engineering, Arts, and Mathematics (STEAM) education model, some academic silos within these institutions show moderate adoption, with particular disregard for the 'Art' component. This neglect is especially prevalent among science-focused departments where 'Art' is often considered irrelevant to students' learning journeys.

This scholarly work aims to explore and emphasize the role of 'Art' within the STEAM education framework, particularly through its design aspects, to enhance productivity in instructional processes. By highlighting the creative capabilities of 'Art' within the STEAM activity system, this study seeks to enrich principles of Education for Sustainable Development (ESD).

## MATERIALS AND METHODS

This study adopts a social constructivist stance, focusing on the role of social processes in the construction of meaning. It employs a qualitative narrative research design to deeply explore the lived experiences of lecturers and students in both science and Art and Design disciplines regarding the integration of 'Art' within the STEAM education model during teaching and learning processes.

Participants were purposively selected to include students from the engineering department, participants from the art and design field, and lecturers from their respective departments. Semi-structured interviews were conducted to investigate their perceptions and experiences concerning the perception and application of 'Art' through design within the STEAM framework in educational contexts. In addition to interviews, relevant documents were reviewed to supplement the understanding of how the STEAM teaching model is currently utilized within educational contexts.

## RESULTS AND DISCUSSION

### Findings

Through narrative research design the study gained insights into perceptions of students and lectures in both art and design and science academic silos about the 'Art' under STEAM education model. Past experiences and perception about art has continued to inform today's scholars most especially those in science disciplines.

Lectures in science disciplines who participated in the study acknowledged that art is inconsequential to their science academic disciplines in that using STEAM learning model Art is inconsequential in their learning processes. Students in the same academic silos responded that art in Uganda has been widely considered trivial, where it stems from their parents who rejected the art talent of their children even when they show poor attitude for science subjects so they do not see how art can aid their learning processes.

Furthermore, many student respondents noted that traditionally art is seen as less intellectual, and even at secondary education, art was being viewed as easy subject without fear of entering a laboratory or complex formulas therefore, adoption of 'art' in their thinking process is inconsequential. Some senior lecturers in science discipline cited the president Museveni's remarks on championing of science disciplines at the expense of art disciplines as clear evidence that art is secondary in country's development process. Respondents brought an argument that they do not see or envisage where drawing, painting, sculpture can support science disciplines, a mindset that led some senior lecturers in science Siros replace the 'A' of Art under STEAM to 'A' of Agriculture.

On the issue of Art through design under STEAM, respondents in science discipline acknowledged that design is a broad discipline that in science disciplines there are various design protocols followed, and that through design there could be a connection between the art and science.

On the other hand, Art and design students and lectures acknowledged that art and design under STEAM can provide an opportunity to explore concepts and theories in a more engaging way, merging life learning skills with comprehension of principles and practice.

Respondents noted that arts enable inspiration and novelty as well as the development of cognitive and social growth. Lecturers who participated in the study further stated that Art-based pedagogy focuses on process-oriented and reflective experiences and draws on a broad range of applied theatrical strategies which can develop learners' creativity, abilities, and

aesthetic awareness. That the adoption of 'ART' under STEAM could go a long way to improve productivity and knowledge cross-pollination.

Students in art and design discipline noted that by engaging deeper in art and design curriculum they acquire more practical oriented skills, develop stronger attention to detail and better hand-eye coordination.

Some lecturers view STEAM as an opportunity to share knowledge in that by introducing art projects into a science class could fuel students better understand scientific concepts. In that, by creating drawings, students can visualize what would normally be a very complex subject. Further, stated that creativity is a central component of every art and design field. Allowing students to explore their creativity help them improve their critical thinking skills. Additionally, lecturers asserted that art and design education enable students learn how to think outside the box, which positively impact their ability to solve complex science or mathematical problems which was acknowledge as a core aspect of STEAM education model. And lastly, lecturers specified that creative thinking skills precipitates innovation and allow students the freedom to explore different paths to a solution.

On the issue of Art through design under STEAM, respondents from art and design noted through design that it would go a long way to provide creative and qualitative design thinking process to the STEAM platform.

Through narrative research design, the study gained insights into the perceptions of students and lecturers in both art and design and science academic silos about the role of 'Art' under the STEAM education model. Past experiences and perceptions about art have continued to influence today's scholars, particularly those in science disciplines.

Lecturers in science disciplines who participated in the study acknowledged that art is inconsequential to their science academic disciplines, stating that using the STEAM learning model, art is irrelevant to their learning processes. Students in the same academic silos responded that in Uganda, art has been widely considered trivial. This perception stems from their parents, who rejected their children's art talent even when they showed a poor attitude towards science subjects. Consequently, these students do not see how art can aid their learning processes.

Furthermore, many student respondents noted that traditionally, art is seen as less intellectual. Even at the secondary education level, art is viewed as an easy subject without the fear of entering

a laboratory or dealing with complex formulas. Therefore, the adoption of 'art' in their thinking processes is considered inconsequential. Some senior lecturers in science disciplines cited President Museveni's remarks on championing science disciplines at the expense of art disciplines as clear evidence that art is secondary in the country's development process. Respondents argued that they do not see or envisage how drawing, painting, or sculpture can support science disciplines. This mindset led some senior lecturers in science silos to replace the 'A' for Art in STEAM with the 'A' for Agriculture.

On the issue of art through design under STEAM, respondents in science disciplines acknowledged that design is a broad discipline. In science disciplines, various design protocols are followed, and through design, there could be a connection between art and science.

On the other hand, art and design students and lecturers acknowledged that art and design under STEAM can provide an opportunity to explore concepts and theories in a more engaging way, merging life learning skills with the comprehension of principles and practices. Respondents noted that the arts enable inspiration and novelty, as well as the development of cognitive and social growth. Lecturers who participated in the study further stated that art-based pedagogy focuses on process-oriented and reflective experiences and draws on a broad range of applied theatrical strategies, which can develop learners' creativity, abilities, and aesthetic awareness. They asserted that the adoption of 'ART' under STEAM could significantly improve productivity and knowledge cross-pollination.

Students in the art and design disciplines noted that by engaging more deeply in the art and design curriculum, they acquire more practical skills, develop stronger attention to detail, and better hand-eye coordination. Some lecturers view STEAM as an opportunity to share knowledge, suggesting that introducing art projects into a science class could help students better understand scientific concepts. By creating drawings, students can visualize complex subjects. Further, they stated that creativity is a central component of every art and design field. Allowing students to explore their creativity helps them improve their critical thinking skills. Additionally, lecturers asserted that art and design education enable students to learn how to think outside the box, which positively impacts their ability to solve complex science or mathematical problems. This was acknowledged as a core aspect of the STEAM education model. Lastly, lecturers specified that creative thinking skills precipitate innovation and allow students the freedom to explore different paths to a solution.

On the issue of art through design under STEAM, respondents from art and design noted that design would provide creative and qualitative design thinking processes to the STEAM platform.

Through a narrative research design, this study gained insights into the perceptions of students and lecturers in both art and design and science academic silos regarding the role of 'Art' within the STEAM education model. Past experiences and perceptions about art have continued to influence today's scholars, particularly those in science disciplines.

Lecturers in science disciplines who participated in the study acknowledged that art is inconsequential to their academic fields. They argued that within the STEAM learning model, art does not contribute significantly to their learning processes. Similarly, students in these academic silos noted that in Uganda, art is widely considered trivial. This perception often stems from parents who reject their children's interest in art, even when they show poor attitudes towards science subjects. Consequently, these students do not see how art can aid their learning processes.

Furthermore, many student respondents observed that traditionally, art is seen as less intellectual. Even at the secondary education level, art is viewed as an easy subject that does not involve the fear of entering a laboratory or dealing with complex formulas. Therefore, they consider the adoption of art in their thinking processes to be inconsequential. Some senior lecturers in science disciplines cited President Museveni's remarks on prioritizing science disciplines over art as clear evidence that art is secondary in the country's development process. Respondents argued that they do not see how drawing, painting, or sculpture can support science disciplines. This mindset has led some senior lecturers in science silos to replace the 'A' in STEAM from Art to Agriculture.

On the issue of art through design under STEAM, respondents in science disciplines acknowledged that design is a broad field with various design protocols followed in science disciplines. They recognized that through design, there could be a connection between art and science.

On the other hand, art and design students and lecturers acknowledged that art and design under STEAM can provide an opportunity to explore concepts and theories in a more engaging way, merging life learning skills with comprehension of principles and practice. Respondents noted that the arts enable inspiration and novelty as well as the development of cognitive and social growth. Lecturers who participated in the study further stated that art-based pedagogy focuses

on process-oriented and reflective experiences and draws on a broad range of applied theatrical strategies.

These strategies can develop learners' creativity, abilities, and aesthetic awareness. They argued that the adoption of 'Art' under STEAM could significantly improve productivity and knowledge cross-pollination.

Students in the art and design discipline noted that by deeply engaging in the art and design curriculum, they acquire more practical skills, develop stronger attention to detail, and enhance their hand-eye coordination. Some lecturers view STEAM as an opportunity to share knowledge. They suggested that introducing art projects into a science class could help students better understand scientific concepts. By creating drawings, students can visualize what would normally be a very complex subject. Additionally, lecturers asserted that art and design education enable students to think outside the box, positively impacting their ability to solve complex scientific or mathematical problems, which is a core aspect of the STEAM education model. Lastly, lecturers specified that creative thinking skills precipitate innovation and allow students the freedom to explore different paths to a solution.

Respondents from art and design noted that through design, art could significantly contribute to providing creative and qualitative design thinking processes to the STEAM platform.

### Discussion

Using a qualitative narrative analysis method, the study focused on interpreting respondents lived experiences in for of their narratives about Art as a discipline and 'Art' as a vital component under STEAM education model. Through inductive approach the study focused on focusing on the meaning of the participants, and describing a process using both expressive and persuasive language (Creswell, 2005). Study findings were analyzed to understand the respondents' lived experiences about art as a discipline and its inclusion in STEAM education model in their learning process and classroom space in both the art and design and science academic disciplines.

Differing narratives open up different worlds (Goodman, 1978). Basing on study findings the narratives from the science academic Siros highlighted a crucial finding that during application of STEAM learning model in their learning process they develop a particular disregard for the 'Art' component. On the issue of Art channeled through design under STEAM learning model it

was noted that this approach could enable the connection of dots between art and science disciplines. Yet in Art and design discipline, STEAM seen as an opportunity to share knowledge, explore creative processes from art and design discipline and that through design aesthetic and design principles, design thinking process could be explored to enhance creativity and critical practical thinking skills.

The findings highlighted a fact the STEAM learning model is interpreted differently basing on our academic background. Yet STEAM education model was designed to fosters collaboration in classroom environment across academic disciplines to enhance creativity and learner centered approaches.

Today, active learning strategies are at fore front of pedagogical methodologies supplementing or replacing teachers. Within the realms of active learning, student-centered learning approaches have been adopted by institutions of learning due to their attributes that nature students as active participants in the learning processes. Conscious approach to STEAM learning model could go a long way to improve teaching and learning processes, which processes are immersed with ESD attributes of interactive, learner-centred, collaboration, inter and trans-disciplinarily, student centered learning enriches the key sustainability competencies in learning processes.

The aspect of collaboration and inter or trans-disciplinarily have been popularized by higher institutions of learning in Uganda to foster sustainable learning. However, their practicability internally within institutions have not been linked between departments, faculties and colleges. Cross cutting courses within faculties and university wide courses have been developed, but their impact on ground has remained a lip-service. The connecting dots between disciplines during teaching and learning are stuck in individual traditional academic feed storages (subjects) discrete to departments, faculties and schools.

Collaboration, Inter or trans-disciplinarity is only applied through research grant projects rather than during teaching and learning processes. This approach of using grants as a conduit for collaboration and inter - disciplinarily has created disconnect in teaching and learning processes. Impacting the way how instructors should employ inter disciplinary methodologies so as to make sustainable changes in their teaching strategies towards encouraging students' growth in various skill areas.

Perhaps most importantly, this state of affair raises pertinent questions about the quality of education in higher institutions of learning (Schleicher, 2020). Yet historically, education was considered as a social phenomenon serving the needs of society and providing sustainable knowledge to learners for survivability in the competitive environment. To improve on approaches to learning, various learning models have been developed geared towards enhancing learner-centered, collaboration and productivity, among them is the model which integrates Science Technology Engineering Art and Mathematics (STEAM).

Being a recent phenomenon in Uganda, STEAM education model has not been seamlessly integrated in instructional design approaches by higher institutions of learning in Uganda. Yet this model contains ESD principles of innovation-based education through deeper engagement of learners, to better understand content with innovative skills which all institutions of learning advocate for. STEAM facilitates a learning process that integrates Science, Technology, Engineering, the Arts and Mathematics as conduit for guiding and enhancing inquiry, dialogue, creativity, critical thinking and problem-solving skills.

The integration of 'Art' in STEM model was purposively conceived to nature a systematic revelation of creative capabilities engrained in art categories towards production of results which are original and value, weaved through a creative process. Art enhances the foundation on which instructors can draw from to provide a well cross pollinated and lubricated instructional processes that fosters sustainable development through teaching and learning.

Even though STEAM education model has been somehow embraced by some science and no-science related courses within higher institutions of learning in Uganda, the 'Art' in STEAM model is not given due attention as a crucial element that adds value to creation input and outcome. The 'Art' has become a contentious element in regard to STEAM, some scholars questioning its importance in the instructional collaboration mix, and its applicability in teaching and learning processes within Ugandan context. The resultant effect of not embracing 'Art' in STEAM activity system, have yielded to un-coordinated approaches to application of creative processes within the activity system.

It is central to note that, Art lubricates creativity (Trilling & Fadel, 2009). In that, through creativity, creative skills are acquired which is a prerequisite for many academic disciplines today. If there is dearth knowledge about creative approaches in instruction methods, could hinder the learner's capabilities from developing their creative skills in a learning environment.

The 'Art' under STEAM avails the creative artistic attributes to aid in solving a problem. Provides space for learners to connect dots towards integration of the acquired knowledge, skills, and abilities across disciplines.

The National Art Education Association (NAEA) noted that 'Art' under STEAM, infuses art and design principles, concepts, and techniques into STEM instruction processes. NAEA, according to Goldberg (2011) is closely linked with the arts-integration approaches which denote the use of the arts in teaching of other subjects. Arts integration is an approach to teaching under where learners construct and demonstrate understanding of subject matter through art forms (Silverstein and Layne, 2010). Art is further appreciated to associate with communication of information, shape our everyday lives, make a social statement and enjoyed for aesthetic beauty.

Art-integration practices are diverse, and can be interpreted in numerous ways due to their overlapping values and perceptions that traverse various disciplines, which makes it difficult to determine the limits of an art-integrated approach to STEAM education. This diversity is in harmony with situated learning that is contextualized, meaning that information becomes meaningful if only presented in relation to its' context (Bredo, 1994; Clancey, 1992; Hung, 2002). Situated learning is a social process under where knowledge is co-constructed in a specific context and embedded within a particular social and physical environment (Lave and Wenger, 1991).

The use of art strategies to integrate art in other subjects (Marshall, 2014), brightens the importance of 'Art' under STEAM model. In that, art integration in transdisciplinary space demands for use of collaborative teaching methods as a means of acquiring knowledge. This is because knowledge is created out of interaction that takes place between learners with each other or with the environment (Krishner & Whitson, 1997).

Much as, arts-integration practices are diverse, this scholarly discussion focuses on 'Art' which is visually wrapped with art and design principles, concepts and techniques (visual art). Further, to deepen the understanding and importance of 'Art' in guiding learners' inquiry, dialogue creativity, critical thinking and problem-solving capabilities, this study explores design under visual arts to illuminate the artistic creative processes sometimes known as "the creeds of 'Art'. Purposively to show how the artistic sense is mixed with esthetics and novelty to stimulates creativity, feelings, queries and innovation across academic disciplines.

Design through the lens of visual arts is discussed in this study, to amplify the 'Art' in STEAM education approach so as to understand what type of 'Art' seamlessly interface with science, technology, engineering and mathematics. Within this framework, the concern of design is about the realization of a particular outcome rather than the science which is intended to establish the general laws (March, 1976). Through Art, design provides space to expose the creative design processes as an ideal fit in STEAM education activity system.

Design is a utilitarian human activity involving use of conscious effort to attain a state of affairs in which certain characteristics are evident (Coyne, R. D., Rosenman, M. A., & Radford, A. D.,1990). In the spirit of the study, it is a form of imagination that works with particular tools to simplify a workflow. Consequently, design activities are reviewed as the thinking activities executed by cognitive operations (Chan, 2015). A social construction creative process mediated by various aspects (Sserunjogi, 2017). Aspects which facilitate development of a plan for arranging elements in a creative way to accomplish a particular purpose within an activity system (Engeström, 1987).

This creative framework for design activities, originates from conventionally known creative processes that blend different concepts together in a novel way by adopting, adding or combining them possesses a constructive thinking, what we term as "constructivism" (Tschang & Szczypula, 2006), achieved through integrated learning processes.

The 'Art' under STEAM, is acknowledged by Art educators as a space for advancing design education (Bequette & Bequette, 2012; Watson, 2015). Learners acquire design thinking skills for application in other subjects (Maeda's, 2013), towards enabling learners become innovators through various design activities, thus enhancing ESD principles (Tejedor, Segalàs, Barrón, Fernández-Morilla, Fuertes, Ruiz-Morales, & Hernández, 2019).

Today, vehicles are not only purchased for their engine power output but also for their aesthetic beauty - the feel and look, making aesthetic an important component in choice preference for many products. The enlightenment about aesthetics demonstrates that, through visual Art, design introduces aesthetics drape and design models into STEAM activity system. Design approaches enriches the teaching and learning processes, enabling learners acquire a bird eye view of solving problems. This creative process engages learners in finding or making connections and experimentation as opposed to following rigid, step-by-step rules.

To educate is to foster development of independent judgement and adoption of values (Johnson, 2007). Exploring design education through the 'Art' under STEAM model, introduces design methods and pedagogies that lay a foundation for development of problem-solving skills, innovation, critical thinking, social skills for empathy, collaboration and facilitation. Design education methods are developed with a focus on curiosity, problem framing and re-framing, developing and asking the right questions (Johnson, 2007). Further, provides hands on, place based project learning where learns from direct connections and interactions with the world (Keane & Keane, 2010). Organized through problem-based learning approaches, that are embedded in projects (Frascara, 2017).

Design education enhances personal knowledge acquired through design fundamentals based on the purpose, planning, efficiency, accountability, order, knowledge of people as design users, as well as sensitivity to content, context and sub-cultures (Johnson, 2007). Cross Nigel (2011) further explains that design is a 'multifaceted cognitive skill' and a natural intelligence 'design intelligence' which involves a deep reflective interaction on problems, solutions, the capacity of flexibility and the ability to switch between thinking and doing. This process augments creative skills for re-organizing problems so that they can be interpreted differently through re-framing process to create patterns which suggest possible solutions (ibid).

The 'Art' under STEAM explored through design instruction approaches avails space for learners and instructors to unearth rich solutions from problems which are open, complex, dynamic and networked. The emergency of STEAM model exposes the reality about the present-day problems which cannot be solved using the traditional problem-solving methodologies. This is further emphasized by Dorst (2015) that, new problems need radically different responses.

STEAM education model is enhanced with creative capabilities that nature, critical thinking-skills intended to seek and select necessary information to organize and test ideas. Supports materializing of ideas as a mode of creating change. Enables the construction of ideas that demands for social engagement, resulting into a purposeful action which forms the basis for human achievement, attributes which are found in all subject disciplines.

The 'Art' in STEAM unloads the creative capabilities that facilitates the relationships between the physical and social environment. The 'Art' also provide the physical part of the design which is fundamental in ideation processes, and ideal in enhancing 'Materiality' based on 'doing and making'. Integration of design instruction processes in learning processes; the knowledge of

production technologies, research methods, how to see and evaluate products and systems, how to identify problems and opportunities for design interventions is cultivated and harvested.

A perfect fusion of Art with STEM can be traced to Leonardo Da Vinci ~The "Renaissance Man" who seamlessly threaded art with science, mathematics and technology (Atalay & Chunn, 2005). In his creative endeavors Da Vinci, noted that, to develop a complete mind: Study the science of art; Study the art of science. Learn how to see. Realize that everything connects to everything else (Pasipoularides, 2019).  Da Vinci assertion connotes that; there is a symbiotic relationship between the Art and STEM. Second, Art is a crucial component in any creative activity system, it lays the foundation for nurturing of problem-solving skills, collaboration and inter-disciplinarity.

Da Vinci's proposal for development of a complete mind, advocates for a 'dialogic' approach. This approach which is evident in art and design education, enables creation of organic linkages, in problem solving processes. This organic approach is further emphasized by Cornett, (2015); Carabine, (2013) and Cunningham, (2009) that, a combination of Arts and STEM areas, promotes organic integration of the subjects, to enhance interdisciplinary approaches to teaching and learning processes.  Leading to improved students' problem-solving and creativity skills (Boix Mansilla, Miller, Gardner, 2000).

Much as STEAM education approach is advocated for, it important to note that, the prescribed breadth of knowledge from each academic silo especially, science, technology, engineering, and mathematics have to be tailored for better comprehension of learning and application in non-science disciplines. The approach should be seamlessly woven to encourage meaningful communication and collaboration to enhance inter and trans-disciplinarity.

The Art under STEAM education model, in this scholarship is reviewed through the lens of visual art.  Under the realms of visual art, design approaches are discussed to buttress art as an essential ingredient in STEAM education model.  Design provides spaces for exploration of design thinking frameworks which are filled with competencies that enhance the learner's design thinking skills. The integration of design thinking frameworks such as ADDIE model, AC4D model, IDEO model, or Google Design Sprints, Hasso Plattner Institute of Design, Austin Center for Design, DEEP Design Thinking, Design Council UK, *Charity for Strategic Design,* Design for America into STEAM, not only provides considerable potentials that scaffolds the nurturing of student skills in problem solving and creativity across disciplines (Anderson, Adam, Taylor, Madden, Melles,

Kuek, & Ewens, 2014), but also enhances collaboration, inter-disciplinarity and integration of Art in STEAM instructional activity system.

## Interpretation and Discussion

Using a qualitative narrative analysis method, this study focused on interpreting respondents' lived experiences through their narratives about art as a discipline and its significance within the STEAM education model. Employing an inductive approach, the study emphasized understanding participants' meanings and describing processes with expressive and persuasive language (Creswell, 2005). The findings were analysed to understand respondents' experiences with art as a discipline and its integration into STEAM education within their learning processes and classroom environments across both art and design and science disciplines.

Differing narratives open up different worlds (Goodman, 1978). Based on the study's findings, narratives from the science academic participants revealed a crucial insight: during the application of the STEAM learning model, they often developed a disregard for the 'Art' component. However, when art is channelled through design within the STEAM model, it was noted that this approach could bridge the gap between art and science disciplines. In contrast, within the art and design discipline, STEAM is viewed as an opportunity to share knowledge and explore creative processes, leveraging design aesthetics and principles to enhance creativity and critical thinking skills.

The findings highlighted that the STEAM learning model is interpreted differently based on academic backgrounds. Nonetheless, the STEAM education model is designed to foster collaboration across academic disciplines, enhancing creativity and learner-centered approaches. Today, active learning strategies are at the forefront of pedagogical methodologies, supplementing or replacing traditional teaching methods. Within active learning realms, student-centered approaches have been adopted due to their ability to engage students as active participants in the learning process.

A conscious approach to the STEAM learning model could significantly improve teaching and learning processes, which are enriched with ESD attributes like interactivity, collaboration, and interdisciplinarity. Student-centered learning enhances key sustainability competencies in learning processes.

Higher institutions of learning in Uganda have popularized collaboration and interdisciplinary approaches to foster sustainable learning. However, practical implementation within institutions often lacks coordination between departments, faculties, and colleges. While cross-disciplinary courses have been developed, their impact remains superficial. Teaching and learning processes are still confined to traditional academic silos, with collaboration typically occurring only through research grants rather than in regular teaching methods. This reliance on grants for collaboration creates a disconnect in teaching and learning, affecting instructors' ability to employ interdisciplinary methodologies effectively.

This situation raises questions about the quality of education in higher institutions (Schleicher, 2020). Historically, education served societal needs, providing sustainable knowledge for survival in a competitive environment. To improve learning approaches, models like STEAM have been developed to enhance learner-centered, collaborative, and productive education. However, the STEAM model has not been seamlessly integrated into instructional designs by higher institutions in Uganda, despite its potential to foster innovation through deeper learner engagement.

The integration of 'Art' in the STEM model aims to systematically reveal creative capabilities, enhancing instructional processes that foster sustainable development. Although some science and non-science courses have embraced STEAM, 'Art' often lacks due attention, leading to uncoordinated creative processes within the system. Art, however, is crucial for creativity (Trilling & Fadel, 2009), aiding problem-solving by connecting acquired knowledge, skills, and abilities across disciplines.

The National Art Education Association (NAEA) notes that 'Art' within STEAM infuses art and design principles into STEM instruction, aligning with arts-integration approaches that use art to teach other subjects (Goldberg, 2011; Silverstein & Layne, 2010). Art integration, being diverse and contextually meaningful (Bredo, 1994; Clancey, 1992; Hung, 2002), enhances teaching and learning by embedding knowledge within social and physical environments (Lave & Wenger, 1991). Art-integration practices are diverse and can be interpreted in various ways, making it challenging to define the limits of an art-integrated STEAM approach. This diversity aligns with situated learning, where knowledge is co-constructed in specific contexts (Lave & Wenger, 1991). Using art strategies to integrate art into other subjects highlights the importance of 'Art' in the STEAM model. Art integration in a transdisciplinary space demands collaborative

teaching methods, as knowledge is created through interactions between learners and their environment (Krishner & Whitson, 1997).

Art educators acknowledge 'Art' under STEAM as a space for advancing design education, where learners acquire design thinking skills applicable to other subjects (Bequette & Bequette, 2012; Watson, 2015; Maeda, 2013). This process aligns with ESD principles (Tejedor et al., 2019), integrating aesthetics into STEAM to enrich problem-solving capabilities. Art fosters independent judgment and values (Johnson, 2007), with design education promoting curiosity, problem framing, hands-on learning, and project-based learning (Keane & Keane, 2010; Frascara, 2017).

The 'Art' in STEAM provides a space for rich problem-solving, addressing complex, dynamic issues requiring new responses (Dorst, 2015). The STEAM model, enhanced with creative capabilities, nurtures critical thinking, materializes ideas, and supports social engagement, forming the basis for human achievement across disciplines.

This study focuses on 'Art' within visual art principles, concepts, and techniques. By exploring design within visual arts, the study aims to understand how art seamlessly interfaces with science, technology, engineering, and mathematics. Design, concerned with achieving particular outcomes, exposes creative processes that fit well within the STEAM system. Design activities involve conscious effort to achieve desired results, making it a form of imaginative and constructive thinking (Coyne, Rosenman, & Radford, 1990).

Design education enhances personal knowledge through design fundamentals, considering purpose, planning, efficiency, accountability, and context (Johnson, 2007). Cross Nigel (2011) describes design as a multifaceted cognitive skill involving reflective interaction on problems and solutions. This process encourages re-framing problems to create new patterns for solutions. Problems are best solved when approached in a comprehensive and systemic way. The goal of this problem-solving process is to guide and organize work to turn ideas into concrete solutions. This process is about envisioning and planning the creation of objects, interactive systems, among others, it is user-centered achieved through a design thinking approach

Design thinking is a human-centered, iterative methodology that designers use to solve problems. This mode of thinking is premised on three core principles empathy, expansive thinking, and experimentation, represented through various steps to guide the understanding of users, define their problems, create prototypes, and testing solutions termed as design thinking model.

A design thinking model is a framework that guides you through the different stages of design thinking. Various design thinking models such as ADDIE, AC4D, IDEO, and many more others have been developed as tools to structure the thinking process and navigate the complexity of problem space. Exploration and integration of design thinking frameworks through 'ART' under STEAM activity system could augment problem-solving and creativity across disciplines (Anderson et al., 2014).

The inclusion of design through ART in STEAM instruction cultivates knowledge of production technologies, research methods, and problem identification, enhancing learning processes. This fusion of Art with STEM, tracing back to Leonardo Da Vinci's holistic approach, advocates for a 'dialogic' method that promotes interdisciplinary integration, enhancing problem-solving and creativity (Pasipoularides, 2019).

Da Vinci's 'dialogic' approach, is vividly evident in art and design education, creating organic linkages in problem-solving (Cornett, 2015; Carabine, 2013; Cunningham, 2009). This approach promotes improved problem-solving and creativity skills (Boix Mansilla, Miller, Gardner, 2000).

The 'dialogic' approach harmonizes a perfect fusion of Art with STEM who integrates art with science, mathematics, and technology (Atalay & Chunn, 2005). Da Vinci's approach emphasizes the symbiotic relationship between art and STEM, highlighting art's role in problem-solving and interdisciplinary collaboration.

While STEAM model holds significant potential for enriching education, its successful integration requires a seamless blending of Art with STEM, fostering meaningful communication and collaboration. By focusing on design within visual arts, this study highlights the essential role of 'Art' in STEAM, promoting competencies that enhance creativity and problem-solving across academic disciplines.

## CONCLUSION AND RECOMMENDATIONS

There is a significant lack of understanding among students and lecturers in science disciplines about the potential benefits of integrating 'Art' into STEAM. However, in today's rapidly changing world, creativity is a highly desired skill, essential to meet increasing social, emotional, and intellectual demands. This scholarly discussion explored the creative capabilities and importance

of 'Art' within the STEAM education model through design. It provided a space to deeply understand how Art can be integrated into STEAM pedagogy and how it enhances creativity.

Inspired by Da Vinci's assertion that to develop a complete mind, one must study the science of art and the art of science, learn how to see, and realize that everything connects to everything else, this discussion advocates for a 'dialogic' approach. Such an approach enables the creation of organic linkages in problem-solving processes. The argument is supported for the inclusion and adoption of design thinking frameworks to solve problems and improve how learners explore the creative capabilities that art offers in problem-solving contexts.

This discussion ignites a conversation about what Art is and how it can contribute to the STEM activity system, aiming to generate a paradigm shift in how art is viewed by some academicians in science silos within institutions of higher learning in Uganda. lastly, it emphasizes the importance of appreciating Art as a discipline that supplements the instruction and learning process through the use of the STEAM activity system, enriching the principles of Education for Sustainable Development (ESD).

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Use of Pottery in Family Rituals among the Paibona Community of Northern Uganda

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## Abstract

Whereas pottery was a common practice worldwide, its use continues to diminish in contemporary societies due to changes in modern life. Pottery products were used as functional products and had rooted meanings, enabling societies to function. Presently, modern ways of living have threatened the use of pottery and its rooted meaning in many communities unless an intervention is put in place. One such community whose pottery practices were threatened is the Acholi community in northern Uganda. The Acholi community had a rich history of pottery, some of which was used in rituals. The coming of modernity did not promote the ritual practices in which pots were used, even though the community continued to use the pots secretly, and that threatened pottery with extinction. The present study set out to document the use of pottery in family rituals of the Acholi communities in Payuta village in Paibona sub county, Acwa county, Gulu district. The study was qualitative and employed an ethnographic research design. The study involved eight respondents who were purposely selected. Data was collected through observation, voice recording, in-depth interviews, and photography. Findings revealed several pots that were used in family rituals, including twin pots *(Agulu Kirubi)* with multiple openings, umbilical cords *(lawum pen and atabo pen),* burial pots *(Agulu lyel)*, and serving bowls *(Atabo lobo)*. Although some pots were specifically designed for rituals, others were sourced from domestic pots, while others were multipurpose, serving both domestic and ritual purposes. Furthermore, the findings also revealed various factors influencing pottery existence today, including religious perceptions, level of education, the need to improve family finances, and love for culture.

**Keywords:** *Acholi, rituals, documentation, pottery, cultural norms.*

## INTRODUCTION

Pots are a very important part of material culture and are significant to those who use and believe in them. It was evident that pottery ware existed thousands of years ago. Besides supporting the daily house chores, pottery was a common ritualistic material artefact. According to Sebillaud (2020), pottery is the oldest practice in the world, with the oldest pottery traces found in south and North China, the Russian Far East, Japan, and Korea. The earliest trace of pottery was in Eastern Europe among the communities of hunters and in North and Central Europe during the Bronze Age Period. Although it was true that pottery could have originated from all these places, different parts of the world, including along the Nile River, where early man settled, had evidence of pottery but little or no clear evidence of recording. During that time, evidence of deposits of pottery fragments and vessels existed in most of those areas of the settlement, a sign that ceramic wares were for daily use and public ceremonial practice (Mazurkevich, 2015; Baron, 2012).

Despite its reduced production due to modernity, pottery is still useful to communities. Panda, et al (2019) argues that modernization has caused a setback in pottery production in India with the use of plastic, aluminum, iron, and ore products for household chores. Nortey and Asiamoaso (2019, p. 43) reported a similar setback in Ghana, where the increase in affordable industrially made plastic and ceramic plates, bowls, and cups from Asia affected the demand for pots, yet it was very important for potters to maintain and preserve humankind's culture and livelihood. Literature reveals that pottery was equally important in several communities around the world. West (2019) explained the use of ceramic jars when serving beer during the ancient Egyptian funeral and burial ceremonies known as Tekunu ritual ceremonies. Thebe (2016, p. 345) posits that in Botswana, pottery production has sustained many families with a steady income that has enabled them to construct decent houses. They produced pots for local markets and other purposes such as wedding presents, house decoration, flower vessels, storage, and ritual ceremonies. Pottery items were found to be part of rituals the world over. Rituals are associated with the use of so many material artefacts, such as pots, masks, body paintings, sculptures, drums, calabashes, baskets, and costumes, accompanied by dancing, drinking, and feasting or eating, among others. Aalberts (2020, p. 243) observes that rituals involved specific images of the where and when of the rituals, connecting through sense-making rather than language, and those images and re-imaginations were crucial for the sacred, mystical atmospheric characteristic of rituals".

Mteti (2016) claims that because clay sites and ceramic artefacts were connected to the creation and preparation of human imagination, they were revered in Tanzania. Rituals were performed at clay sites to mediate and settle social disputes because of the numerous myths and taboos connected to clay sites, preparation, manufacture, and pottery objects. Their life revolved around the usage and creation of ceramics for spiritual and artistic purposes.

Among other rituals, the Jopadhola tribe in Tororo, Uganda, used a variety of pots for initiations, marriages, and twin ceremonies (Owor, 2016, pp. 70–71,). Pots played a significant role in the empako-naming, introduction, and burial rites performed by the Batoro and Banyoro tribes. The most frequent ceremony was eating from the same traditional dish, known as the pot, even if there were other ceremonies involved in the naming, marriage, and death. When the family's male head was buried, all of the surviving children shared a pot of smoked beef as a symbol of their unity and their wishes for a long life for their ancestors (Basiime, 2015). Similar to this, the Jopadhola village brewed and served millet beer in pots throughout.

Cultural policy is in favor of the preservation of customs such as the usage of ritual pots. In order to improve the integration of culture into development, the National Culture Policy addresses the issue of conserving indigenous material culture artefacts. These strategies include promoting culture, guaranteeing capacity building, guaranteeing research, documenting, and encouraging collaboration with stakeholders (MGLSD, 2006). Despite the significant obstacles posed by Western ideology, the Ministry of Culture and Community Development was established to guarantee the promotion, preservation, and strengthening of Ugandan culture. However, certain groups, like the Acholi community, continue to place significance on their cultural items.

The United States Department of State (2010) granted almost 650 projects in more than 120 poor nations through the U.S. Ambassador's Fund for culture preservation for the current and future generations, demonstrating the value of cultural heritage. It was also an opportunity to show respect for other nations' cultural legacies and to view transportable, tangible artefacts that, because of their immense worth to people all across the world, symbolize humanity's creative genius. The United States Department provided an explanation of how projects falling under this category tackled issues including the urgent need for conservation treatment, the goal of conservation, safe storage practices, caretaker education, and the preservation of collections and cultural artefacts.

Nsibambi (2018) highlights the importance of documentation in a similar manner. He notes that while a large number of community museums had been established to preserve cultural history, there was not enough documentation available for these artefacts. He contends that, whether or not it is disputed, our history and cultural legacy should be impartially recorded and presented for the benefit of the next generation, allowing them to build on the great aspects of our past and culture while learning from the "bad" history. Any museum piece gains value when its history, including any connected controversies, is recorded and made available to visitors via written works, photo exhibits, or live narration (Nsibambi, 2018, p. 32).

International and regional conventions encourage preservation efforts. Aspiration 5 of African Agenda 2063, as proposed by the African Union Commission (2015), intends to enhance and promote Africans who possess a strong sense of cultural identity, ethics, and values. In a similar vein, Sustainable Development Goal 12 seeks to transform society's organisational structures as well as daily behaviours. It addresses resource extraction to enable natural ecosystems to flourish and endlessly support human life (UN, 2015). These crucial international agreements outline the importance of culture and tangible cultural artefacts for continuity and sustainability in

modern society. Iddrisu (2018) said in his advice that it was critical to research pots that were in danger of being extinct, comprehend and record their uses, context, and potential restoration.

Western cultures have had a significant impact on people's lifestyles, customs, perspectives, and views about the world around them. For the Acholi people, pottery had deep cultural and domestic significance, supporting ceremonies and other practices with deep-rooted meanings. Given the nature of the people in the Acholi community, including people from different cultural backgrounds, economic statuses, and religious faiths, pottery items used in rituals were associated with witchcraft. These perceptions have reduced the value of pots and affected their use, yet these were the oldest traditional material culture item, which is as old as man's existence, that needed to have been protected for future use. The use and survival of ceremonial pots have been endangered by the stigma associated with them. Because Acholi traditional pottery has great historical significance and is valuable to future generations of scholars and educators, it was necessary to undertake some interventions to preserve it.

## MATERIALS AND METHODS

This study is part of the ongoing PhD research project *Ritual Pottery among the Acholi of northern Uganda and its Relevance to Contemporary Social Space Design,* whose second objective is to explore the use of pots in the rituals of the Acholi community. The study used a qualitative research approach in a natural setting to help understand and interpret social interaction, focusing on a wider perspective within the pottery environment. The study used ethnography design to get first-hand descriptive and in-depth views of culture and human behaviour (Mullick, Sen, Das, & Mukherjee, 2013). The study identified the pots produced today and analysed the use of selected ritual pots to document them for future reference. The study was carried out among the Acholi community in Payuta village, Paibona sub-county, Aswa County, Gulu District. The Acholi community lives in the districts of Gulu, Kitgum, Pader, Agago, Lamwo, Omoro, and Nwoya. Eight (8) respondents were purposefully selected based on their perceived knowledge and experience of pottery production and use, including three (3) producers, one (1) cultural leader, two (2) informed elders, and two (2) users of pots as seen in table 1. The producers provided information on the different kinds of pots produced; cultural leader, informed elders' and users of pots explained the historical use of pots in family rituals. Ethical considerations were observed by giving pseudo-names to protect the identity of the respondents. Data collection tools included observation guide, in-depth interview guide, and

photography. Phone calls were made to make follow-ups and sought clarity on unclear matters. Data was collected using unstructured questions guide. Through these open-ended questions, participants freely expressed their, experiences and knowledge about pottery use. The study used descriptive method of analysist to interpret the data gathered. Given that they were aware of the pots used in rituals, the discussion concentrated on pots which were used in the most common family rituals, with visual evidence of the pots and factors influencing continued existence of pots in the community.

Table 1.*Categories and numbers of respondents*

| SN | RESPONDENTS | PSEUDO-NAMES | Number of respondents |
|----|-------------|--------------|------------------------|
| 1 | Producers of pots | Pd | 03 |
| 2 | Cultural leaders | Akena | 01 |
| 3 | Informed elders | Onono and Anena | 02 |
| 4 | Users of pots | Okot and Lalam | 02 |

## RESULTS AND DISCUSSION

## Pottery production today

The Acholi were socialized in homesteads maintained through cultural practices under the clan system where customs, values, and cultural norms *(tekwaro)* were highly respected. Although modernization has greatly affected the social structure, some customs, values and norms continue to be respected. It is in this regard that the present study set out to document ritual pots. Potters in Payuta Village explained the kind of pots currently in production. We took notes, made recordings, and took pictures of the pots and the activities. We observed several kinds of pots in the compound and in their huts including; cooking pots, water pots, storage pots, and serving bowls. The pots showed the various common types of pots and one could tell that the production of the pots was determined by the demands of the community.

Pd 2 a 52-year-old woman explained that;

> *I am the sole provider for my family, I produce pots to help me raise finances to support my family's needs. I always ensure that whatever I produce should be sold. Sometimes I receive special orders from my clients but most times, I produce water pots, cooking pots serving bowls, and beer pots.*

She lived near Pd 1's home and they shared so many things in common. Pd 1 was a 79-year-old woman who had been in pottery production since she was a young girl. She learned pottery from her family and also taught all her children how to make pots. In her home, different kinds of pots were observed. Some were in good condition while others were slightly broken or not in use and scattered all over the compound, a sign that she has been in production for a long time. While some broken pots were placed under the granary, next to the granary, and under the tree as seen in *(Figure 1),* others were used for storing clay and serving water to the chicken *(Figure 2).* She also had several cooking pots, some of which had been fired the day before I visited her *(Figure 3).*



Figure 1. *Pots scattered all over; under the granary, next to the granary and under a tree, photo by researcher*



Figure 2. *A broken pot for storing clay, a broken bowl used for serving water to chicken, and a broken water pot, photo by researcher*

Figure 3. *Newly fired cooking pots, water pots, wine pots, and bowls, photo by researcher*

Pd 1 gave an impressive narrative of her life in pottery production. She trained many potters in her village most of whom have relocated to other places. In her home, she produced many types of pots including water pots, storage pots, brewing and serving pots, bowels, and *kirubi* (two-mouth pots) and she always gave out pots for burial and marriage purposes. She also made pots based on the need and purpose usually on request. She explained that;

> *I usually make kirubi on request because they do not sell so much. The only time I make many of them is when my customer who sells in Gulu town places her orders. I also receive people who buy burial pots and given that pots for burial are not unique in any way, I always pick them from the available water or cooking pots as long as the size is appropriate to what they want. About two weeks ago, I sold a small water pot for the burial of a twin baby of about three months.*

Pd 1 explained why pots that got damaged during molding or firing were not discarded. They served other purposes not necessarily holding liquids. Given her age, she produced pots but sold them from home and in fact, some people bought from her and took them to the market. She was amazed at how people from different occupational backgrounds looked for her in the village to buy pots. She was conversant with what her customers wanted and so she would always strive to produce the best. Much as she produced pots for rituals, she showed a lack of interest in ritual practices. She explained how her family stopped carrying out rituals many years ago when they returned from the camps. She said; these rituals are still being done in the community although many people do not do them in the open. I have evidence of this because I sometimes produce for them the pots. Others may not say exactly what they are going to do with the pots they are taking but the fact that they are asking for that specific kind of pot makes me understand

what they are going to do with them and I produce them. I am not against rituals but I don't participate in them.

She admitted observing the rituals of her extended family and in the neighborhood. Given that she is blessed with the creative skills of molding, she utilized them to the fullest. She wished her daughter was alive, she would carry her legacy. Pd 1 had passion and love for molding. She explained how molding kept her mind away from worldly thoughts. She expressed appreciation for her good health and strength and prayed that the almighty God continue to protect her. She explained how pottery skills were traditionally passed on within the family households and the community informally. While potters worked together with their family members and other members of the community during production, others learnt through practice by supporting the production. She observed that today so much has changed; families of potters have turned to other activities that bring quick financial returns to their families. Young members of the family are introduced to the formal education system at an early age, as early as two years depriving them a chance to participate in pottery production.

On the other hand, Pd 1, Pd 3 explained how her religion did not support traditional practices of ritual performance. She expressed her disappointment whenever someone asked her to mold a ritual pot. She said;

> *I cannot produce a pot that I know will be used for rituals. That will mean, I am glorifying the devil. I produce pots but I do not want to produce a pot that will be used during rituals. When I receive customers who want pots for rituals, I politely turn them away. In fact, in my village here, many people are already aware that I am "born again" so I don't make pots for rituals.*

### Pots used during spiritual rituals

To understand the importance of the pots in rituals, it was important to identify the pots and find out how they were used. Akena, a cultural leader explained that ritual pots were supposed to be limited to those pots designed for rituals however, pots not necessarily ritual pots are repurposed to serve as ritual pots. He observed that only *Lutino jok* (godly babies) required these rituals. He observed that the godly babies included twins who were named Apiyo or Opiyo if they were the first to come out and Achen or Ochen if they were the second. They were either female or male, or both. The breech babies were named Adoch or Odoch if they were a girl or a boy, and babies born with body defects or abnormalities were named Ajok or Ojok if they were

female or male. Although he acknowledged that Ajok or Ojok were said to be godly babies, they were not accorded special rituals like those of twins and breech birth. These family rituals were conducted by family elders and relatives who were in most cases parent's grandparents, great-grandparents or extended relatives.

### Ritual pots (Agulu jok)

The understanding of *Agulu jok* was elaborated by the informants, Onono and Anena as a name that generalized ritual pots. They identified *Agulu jok* and explained their use during godly rituals. Like the cultural leaders, the informants acknowledged the two-mouth, three-mouth and four-mouth pots although they also admitted to having mostly seen the two mouth and sometimes three-mouth pots during rituals and hardly saw four-mouth pots. While Pd 1 and Pd 2 were so specific on the kind of pots produced, they could not give an elaborate understanding of how the pots were used during rituals. Akena discussed the various kinds of pots used by the Acholi people during twins and breech babies' rituals; *Agulu pen/otaku*, small pots with covers or broken shaped pots for burying the umbilical cords and or placenta for godly babies at birth; *Agulu Lyel* were usually pots that were used in the burial process of godly persons. He explained why these pots were so significant during the rituals. The godly babies were constantly celebrated right from birth to death to get good health, protection and safety among others. Other pots included those that were used for serving food, drinks, cooking and the repurposed pots.

### Burial pot (Agulu lyel)

Burial pot was used for burying godly babies both infants and adults. Whenever the family needed a pot for burying a godly child, a new pot was obtained from the potters or the market. These pots were originally designed for storing water or cooking food as observed in Figure 4. Okot explained how godly children; the breech and twins were buried using pots.

He observed that;

> During the baby's burial, the appropriate size of pot was obtained and two holes were made slightly below the neck of the pot. The two holes symbolized the eyes of the dead. It meant that the dead was alive and was seeing everything that happened through the holes. They placed the body in a pot, without clothes and covered it with sheep skin and bomo (a climbing plant used in spiritual ritual ceremonies for twins and breech babies). A big piece of broken pot was shaped and used for covering the ritual pot. After fitting, black clay from the water wells was used for sealing the pot. The pot was then buried at

> *Wang kac. The pot was surrounded with sticks from Okango a plant used during godly burial. The plant was properly tied with strings and bomo was wrapped around it. All these burial rituals were conducted in the morning before the sun gets hot.*

However, for the godly adult burial, a burial was conducted in the usual normal way but also without clothes. The body was placed in the grave and wrapped with sheep skin and *bomo*. Like other family burials in Acholi culture, a burial grave was always dug within the homestead. In the second burial of godly babies, the remains were exhumed and placed in a pot to be taken for a second burial. What should be noted was the fact that godly burials were conducted twice; at the time of death and after some years when the spirit of the dead appeared to family members through dreams. The body would be exhumed and relocated for a second burial. The second burial was conducted whether it was a miscarried baby or normal birth. Within the village, we visited a home where the remains of a male adult had been exhumed a few days back. We interacted with Lalam, an aunty to the deceased who explained how her nephew died about nine years ago, and given that he was a godly child, the family carried out the death rite and conducted the second burial although the process would be complete when the pot containing the remains were taken away from home, Lalam shared her encounter with second burial;

> *When my nephew was exhumed, we prepared a pot and all his bones were collected and placed in the pot. We have placed his remains tentatively here to rest a bit. He will come again to the family through dreams for his remains to be shifted to his final resting place, a cool place near the water wells or under a big tree away from home and that is another ritual altogether.*

Lalam's narrative confirmed what the informants and cultural leaders explained. Figure 5, shows the remains of Lalam's nephew kept in the family shrine as it awaits to be shifted for the second burial.

Figure 4. *Water pots and cooking pots repurposed for the burial of spiritual babies, photo by researcher*



Figure 5. *A pot containing the remains awaiting a second burial as observed from a distance and close range, photo by researcher*

## Twin pots (Kirubi)

Twin pot was the most outstanding ritual pot used for serving beer during the twin rituals. The cultural leader, Akena explained how people plainly, refer to *Agulu kirubi* as *Agulu jok* (ritual pots). That to him was more general because it did not specifically refer to twin pots. He explained how twin pots could be called *Agulu rut* or more precisely *Agulu kirubi*. *Agulu kirubi* had two, three or four openings however, kirubi with two openings was the most common type. He explained that the pots served the same purpose. The pots were used during the naming, birth

and death rituals, and for serving traditional beer. *Kirubi* was always small in size with either smooth or rough design in repeated zigzag design patterns all over but with a smooth mouth ring. What also stood out on some *kirubi* pots was the fact that the two openings varied in size, one side was smaller and the other bigger. While the variation meant the position of the first and second birth of the twins, others believed it didn't carry any meaning. They understood it as the potter's craftsmanship without any significant meaning.



Figure 6. *Kirubi la-doge aryo ki adek (Two-mouth and three-mouth pots for twin ritual).*

### Umbilical cord pots (Lawum Pen/ Atabo Pen)

*Lawum pen* was shaped pieces of a broken pot that was prepared for burying the placenta/ umbilical cord while *Atabo pen* was a molded pot prepared early for burying the umbilical cord and sometimes placenta of spiritual babies. Lalam, a pot user explained that;

> *Lawum means to cover, broken pot is picked and two pieces are shaped to properly fit so that one can be used for covering. Once the placenta/ umbilical cord is placed inside, it is properly covered and sealed with clay soil from the well water. Meanwhile, Atabo pen is a molded pot, usually very small in size with a properly fitting cover. The pot is buried within the family shrine however, not completely, it was buried halfway and the top part was left out.*

This ritual was done the same day the godly babies were born and after the naming ritual. While the first ritual was for the placenta, the second was for the fallen umbilical cord which was added

to the placenta. Although most families do not bury the placenta given the fact that they gave birth from the hospital, they waited for the umbilical cord for the burial ritual. *Atabo pen* was simple and easy to prepare and did not require the help of a potter to produce it. Akena described how an elderly person, usually the grandmother or an Aunty molded *Atabo pen* for the ritual. In one of the shrines within the community, a *lawum pen* was observed by the family shrine as seen in Figure 7.



Figure 7. *Lawum Pen surrounded by Okango and Bomo within a family shrine.*

### Serving bowl (Atabo Lobo)

*Atabo lobo* was a clay bowl that served several purposes ranging from the basic utilitarian purpose of serving food in the homes to serving food during rituals. The cultural leader and elders explained how *Atabo lobo* was used for serving special meals such as *otwo* (smoked meat), and *dek ngo* (pigeon peas), especially to the family heads. While enjoying family meals, members sat around the served meal with children in the front circle followed by women behind while the head of the family, sons and brothers sat in their separate space, away from the women and children. The importance of *Atabo lobo* was that it kept food warm for a very long time when properly covered. Besides that, families used the bowl for storing items such as oil, honey, and groundnut paste in a macramé away from insects hanging in the sealing of the hut. Some people simply used them for decoration while placed in macramé.

Meanwhile, for ritual purposes, *atabo* lobo served the chicken, sheep and goat meat after it had been slaughtered during the various rituals. In most cases, the meals served during the ritual

were cooked without salt. *Atabo lobo* was designed in the same way with a rough texture on the neck and a smooth texture on the lower part. The only difference was in the use which was either for ritual or domestic use.



Figure 8. *Atabo lobo placed in macramé*

## Discussion

The findings revealed several pots were used in family ritual proceedings in the Acholi community including twin pots *(Agulu Kirubi),* with multiple openings, umbilical cord *(lawum pen/ atabo pen)* burial pots *(Agulu lyel,* and serving bowl *(Atabo lobo).* The study observed that while some of these pots were designed specifically for rituals, others were sourced from pots used for domestic purposes. The most common pots designed specifically for rituals included twin pots, umbilical cord pots, while those which were sourced for rituals included burial pots. Serving bowls were used interchangeably for serving meals during rituals and during the normal family gatherings. While most of the pots designed specifically for ritual proceedings were becoming extinct, potters confirmed how people in the community still demanded for them although secretly to avoid people's opinions towards their beliefs and practices.

The study also revealed various factors influencing pottery existence including religious perceptions, education level, the need to improve family finances, and love for culture.

*Religious perception;* many families in Acholi and generally Uganda as a whole embraced Western religion. Western religions came with their own doctrines which could not recognize African religions. Many people in Acholi adopted both Christianity and Islam and the teachings of religion especially Christianity regarded everything indigenous as ungodly. The study found that there is a mindset issue that needs to be interrogated for Africans to develop a sense of nationalism. The mindset issues concern the conflicting beliefs, and practices between the Acholi traditional cultures and western cultures. While the western culture sidelined Acholi pottery, especially pots used in rituals, the traditional Acholi cultures cherished and protected these artefacts.

*Education level;* traditionally, learning was by practice, and the more the children observed and interacted with clay, the better the experience and craftsmanship. Children at that level had the opportunity to explore with clay and other craft materials from their environment and people close to them. With the introduction of the education system, a lot has changed. Today's generation has been deprived of the opportunity to learn pottery among other crafts at an early stage within the home setting. Besides joining the school as early as two years or less, they had limited opportunities to interact with their families and the environment around them. The situation was worsened by the current curriculum that focus more on developing cognitive and affection domains rather than psychomotor development at that early stage. To date, pottery as a traditional art and craft has not been considered in the primary curriculum limiting the potential creative skills of young potters which should have been developed and promoted at an early stage for future vocational skills which could support their lives.

*The need to improve family finances;* the few exiting potters in the community earned some income through the sale of pots. The potters were aware of the need for ritual pots and the charges which were usually slightly higher because of scarcity and demands. The situation enabled potters to raise household income for their families through production and sale of such pots. The buyers who purchased the pots in bulk came from far however, most final users were from within the community. The finances raised from pottery production supported the family in many ways including paying for education, buying food, seedlings, creating strong family bond.

*Love for culture;* Love, culture and practices were one reason why the ritual pots were flourishing despite the influence of religion and education. Some potters expressed love for pottery production because it kept them productive and useful to their families and community, while others believed that pottery production allowed them to exhibit their God given creative skills. It was also observed that potters who subscribed to the western faith had not abandoned pottery production but limited their production to what seems well with their consent a sign that Acholi people still cherish their ritual practices despite practicing religion or living a modern life. The Acholi people had continued to protect their culture and customs, and the continued production of ritual pots albeit secretly is a manifestation that modernity cannot take away their traditions.

## CONCLUSION AND RECOMMENDATIONS

## Conclusion

The demand for pots still exists despite 25years LRA war interrupted which altered the social, political, and economic life of the people affecting them physically, psychologically, and emotionally altering their normal homestead settlements with all its cultural norms, practices, values, and beliefs (Atim, 2018, p. 6). Given that today people live in a mixed community where certain practices were adopted from other cultures, some people view other cultural practices and artefacts with reservations. With that in place, many people have become conscious and more careful with activities that go on around them which has affected the production and use of Acholi ritual pots. The fact that many people today have abandoned rituals and adopted other ways of life such as new religions, there is need to protect the traditional pottery of the Acholi to enable them to coexist within today's society. For example, repurposing pots to serve other purposes would help remove the fear of associating with pots used in rituals, save their extinction, promote continued sustainable production, educate the future generation, and conserve the material artefact. As advocated by Nsibambi (2018) there is a need for conserving cultural artefacts through documentation and the establishment of community museums for future purposes.

The present study observed that the Acholi community attached a lot of importance to ritual pots as well as other pots and therefore, such pots need to be documented and conserve them. The study identified the kind of pots produced today, and analyzed their use. While the study observed how some pots were designed specifically for rituals and others were sourced from pots

used for utilitarian purposes, it also acknowledged how most of the pots produced today were for utilitarian purposes such as pots for storage of water, food, cooking, and boiling liquid. They observed that while ritual pots and pots designed for rituals were also produced mostly on request, they were not produced in the open but rather secretly. They observed how the market demand determined the kind pf pots to be produced. They explained how various factors influenced the existence of pottery today including religious perceptions, education level, the need to improve family finances, and love for culture.

## Recommendations

The Acholi people have rich traditional pots which are used during ritual proceedings and are being threatened to extinction. They include; twin pots *(Agulu Kirubi)*, with multiple openings, umbilical cord *(lawum pen/ atabo pen)* burial pots *(Agulu lyel*, and serving bowl *(Atabo lobo)*. It was important to document these pots through written evidence to educate the future generation and use as references for scholarly writing. These pots can also be conserved in locally established museum within Acholi region.

The fact that many people today have abandoned rituals and adopted other ways of life such as new religions, there is need to protect the pots used in ritual for Acholi to enable them coexist within today's society through repurposing. Repurposing was needed to promote continued sustainable production, and save extinction.

Given the importance of pottery as a material culture items, it was important to encourage the young people in field of innovation to use the ritual pots as inspirations for design concept which can compete with other products in the market. These traditional ideas can be incorporated in both private and contemporary spaces design.

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Musealization of the indigenous Iron Artifacts of the Baganda in Uganda

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## Abstract

This exploratory case study focused on examining how burgeoning musealization centers in Uganda conserve indigenous iron artefact of the Baganda people of southern Uganda. The study was guided by three specific objectives; To explore the conception of musealization centers for indigenous artifacts of Baganda people of southern Uganda: To analyse how musealization centers profile collected indigenous iron artifacts of the Baganda people of southern Uganda: To examine attributes considered for presentation of collected indigenous iron artifacts of Baganda people in established musealization centers of Uganda. The study population consisted of, patrons, curators, and guides from museums in Kampala and Wakiso districts of Uganda. Three (3) patrons, three (3) curators and ten (10) museum guides were selected purposively to form the study sample for object-centered interview sessions using semi-structured interview guides. Participant observation focused on the meanings attached actions during displaying and profiling of indigenous iron artefacts with in the selected museums. The study findings revealed that musealization (the collection, documentation and preservation of objects) is inspired by ascribed ideal values motivated by experiential, aesthetic, symbolic or remembrance motives. Most musealization centers lack professional manpower to extract profiling information of indigenous iron artifacts. Burgeoning musealization centers operate a low budget thus compromising the quality of the required standards for musealization. Functionality and intrinsic values are some of the key aspects considered for conceptualizing displays and exhibitions in the musealization centers. The study concludes that without proper funding to facilitate acquisition of good space for display, research and recruitment of professional historian and curators musealization industry in Uganda is at the verge of being incapacitated hence compromising information on the musealia. The study recommends that musealization centers should consider explore existing technologies and develop digital platforms for effective display of their collections

**Keywords:** *Musealization; burgeoning museums; indigenous iron artefacts; the Baganda*

## INTRODUCTION

Iron production as one of the key social economic activities in Buganda helped the natives to design and make iron artifacts with utilitarian aspects that could answer the needs in political, social and economic fabrics. The iron artefacts due to changes they are presented in they are presented in by musealization centers. These consists of but not limited to knives, bells, hoes,

spears, arrows, rattles. The displays reflect the knowledge, skills and experiences of its people through ages. Their collection partially portrays the indigenous life of the Baganda and contained implements of everyday use and memorabilia of cultural past.

Musealization is one of the contemporary formats through which the knowledge about the indigenous iron works of the Baganda has been preserved and promoted for posterity. A younger generation of the Baganda today have gotten exposure to the indigenous technology which defines the innovativeness and creativity of their ancestors through cultural studies and surviving musealized objects in the country. This case study interrogates the transformation of indigenous iron artifacts of the Baganda from just mere objects to musealia by selected musealization centers in Uganda. It establishes informed insights on approaches for musealizing indigenous artifacts of communities around the world.

The concept of musealization incorporates the process of detaching an object from its original context or setting for its exhibition in a museum-like manner and environment (Osterlund, 2013). The process integrates collection, preservation, presentation, and other functions that take place in a museum (Schärer, 2009). Other scholars such as Maroević (1998) Latham (2016) describes musealization is the process and context in which an object becomes musealia: objects with their documentation

Musealization emerged in the European countries such as Greece, Italy and Britain, and was subsequently taken up by people in other regions of the world, Uganda inclusive (Wan-Chen, 2012). In the contemporary world, there are many mushrooming musealization centers dedicated on different areas of interest such as design, technology, visual culture, sports, biology, and history. the patronage of these museums consists of government bodies, devoted individuals, non-government organisations, cultural institutions and among others.

For generations with divergent purposes and sometimes similar, there has been continental efforts towards establishment of museums in different regions such as North, East, West, Central and South Africa; the establishments have been considered at houses collection for various artefact that affirms identity and mighty of African tribes. Some museums such as the Egyptian museum in Cairo, Pan African Heritage World Museum in Accra, Museum of Africa in Johannesburg, House of slaves Dakar and South African museum in cape town have been established as symbols for diversity and harmony in Africa as well as nationalism in their

respective countries of establishment (Weil, 2012; Coetzee & Nuttall,1998; Simpson, 2012; James, 2005; Sealy, 2003).

In Uganda, the practice musealization started informally by explorers and colonialist who collected indigenous artefacts and took them in Europe to set up pavilions for primitive art in musealization centers, universities and libraries. Later, the musealization practice was formalized by colonial government officials through ordering the collection of artefacts from different tribes to set up a museum for their researchers, state visitors and tourists. Consequently, the establishment of the Uganda museum in 1908 and others later.

Currently there are many mushrooming musealization centers in many regions of Uganda like Buganda, Ankole, Busoga. These centers are dedicated to cause of "preserving and presenting the diversity of Uganda's cultural heritage and provide spaces for appreciating different cultures. These serve as cultural repositories, some with well-documented literature on culture and other socio-anthropological aspects" Ssenyonga (2016, p. 125).

In Buganda region, several historic sites such as the royal palaces, royal tombs are and clans' sites are repurposed to become musealization centers. As such the boundaries between museums and historic cultural sites has been dissolved (Aykaç, 2019). Among the established sites in Buganda for musealization activities are the Mengo King's palace founded by Kabaka Mwanga II, Wamala Tombs, a burial site for Ssekabaka Ssuna, Kasubi tombs a burial site for four deceased Kings (Ba'Ssekabaka) namely Mutesa I, Mwanga II, Chwa II and Mutesa II. These sites increasingly attract both tourists and scholars; from within the country and around the world. Individuals have also endeavored to become sole proprietors and project promoters of musealization businesses such as Ssemagulu museum, Kawere museum.

The collection and preservation of objects based on ascribed ideal values is motivated by experiential, aesthetic, symbolic or remembrance motives (Schärer, 2009). For example, musealization centers in Buganda play an instrumental role in cultural conservation and promotion by serving as hubs where discussions on cultural activities nurtured and artefacts are displayed in categories such as but not limited to basketry, weaving, jewelry, pottery, wood carvings, textiles, iron works, and musical instruments. The projects for such musealia are intended for culture conservation and consumption.

Historically, most collections of indigenous artifacts of the Baganda have been musealized in European museums since colonial period (Bennett, 2018), and the profiling was minimally done

by European scholars with an outsider's view, whose documentation missed observing the communities' emotional and intrinsic attachments on artifacts. Therefore, the truth in their deliberations was questioned: How does one tell the story of another's truth: especially when the whole construction of truth in in question? (Katz, Biesele & Denis, 1997). However, the same presentation of minimal information is being practiced by the proprietors and managers of local musealization centers. Most of their collection lack text or photographic evidence which can play an informative role of describing the profiling information of the collected indigenous iron artifacts.

Musealization centers are national treasures covering both the work of nature and man (Plumbs 2002). The existence of musealization center in the contemporary Uganda has reestablished value of indigenous iron artifacts and their technologies of production among the Baganda due to their essence. Consequently, this has inspired them to reassert their identity on the platform of a globalized world. Many centres such as Kasubi tombs, Buganda museum, Ssemagulu museum, and the Uganda National Museum collected, preserved and presented the indigenous artifacts of the Baganda. These centres of immortalization serve as temples, forums, beacons of cultural democracy, and as spaces of identity articulationn (McCarthy, 2016).

Despite the importance of musealization centers to the Ugandans, the industry face hindrances slowing its progress and establishment in Uganda; limited protection hazardous human activities, demonization of the indigenous artifacts by foreign religious fractions, marginalization by Eurocentric education systems and political unrests in Uganda through different regimes. whereas such challenges exist, musealization has continued to steadily support network for culture and heritage (Yasmin et al, 2017, p.4). Museums are repositories of artifacts that carry meaning behind people's identity, practices, beliefs and aspirations. Indigenous artifacts are objects for both individual and community memory and convention. They are relevant to people and society (Schärer, 2009).

## Statement of the problem

Various mushrooming centers for musealization in Uganda, have exerted more efforts in the collection, conservation, profiling and presentation of indigenous iron artifacts of the Baganda people; for educational purposes: tourism: cultural identity. Despite the historically significant contribution of the collected indigenous iron artefacts in the lives of the Baganda; strengthening their social, economic and political spheres of their kingdom, there is a miss up on musealization standards. the standards are on contrary to what is being done in other modern museums

elsewhere for contemporary use; The artefacts are not appended with proper descriptive information which can highlight their importance and inspiration for further innovations: There are gaps in the profiling content attached to the displayed artifacts regarding the details about their life background: No electronic installations audio visual content: There is no clear history behind their conception, production process, materiality, value, rituals, utilitarian aspects, and meaning of collection. This too leads to provision of minimal content about the indigenous iron works; production, designs and artefacts. Therefore, a need to investigate the musealization procedures employed by musealization centers to transform collected indigenous iron artefacts from just being objects to musealia was inevitable.

## Study Objectives

To establish the informed perspective for this exploratory case study, interrogation of the available knowledge sources about what is known regarding study objectives was prudent (Creswell & Creswell, 2017). The research objectives were principally based on:

1. To explore the conception of musealization centers for indigenous artifacts of the Baganda people in Uganda. Under this objective, the study focused on stimulations for the musealization of indigenous artifacts of the Baganda, the establishment of museums, the process of identifying, selecting and preservation of the Artifacts.
2. To analyse how musealization centers profile collected indigenous iron artifacts of the Baganda in Uganda. Under this objective, the study focused on ways of extracting content about indigenous iron artefacts for profiling purposes by staff in musealization centers from willing sources; capturing and making meaning of the life collected iron artifacts
3. To examine attributes considered for presentation of collected indigenous iron artifacts of Baganda people in established musealization centers of Uganda. Under this objective, observations and interviews were carried about the exhibitions; arrangement, management, and descriptions of collection were made.

## MATERIALS AND METHODS

This exploratory case study was qualitative in nature since it was seeking to analyse approaches imbedded in how and why burgeoning musealization centers in Uganda conserve the indigenous iron artefacts of the Baganda people with emphasis on the; conception of musealization centers, processes of profiling collected indigenous iron artifacts of the Baganda by musealization centers and, the attributes considered for the presentation of collected indigenous iron artifacts of

Baganda in established musealization centers. A qualitative approach was important for this exploratory case study with a need to contextualize meanings people's divergent believes, practices and experiences from their social reality in the line with the phenomena under investigation with reproach (Baskarada, 2014; Stake, 2008; Alam, 2021).

Resource centres such as National Records Centre and libraries in Uganda were accessed, different research groups of indigenous studies, museology, museography, anthropology and archeology were consulted. Other information sources included but not limited to online publications, newspapers televised and radio programs with reflective information on the study was consulted purposely to demonstrate the relationship between study variables to provide a better context for primary data (Clark, 2013). The data gathered from secondary sources was collected, analysed, and interpreted using a logbook.

The study population consisted of, patrons, curators, and guides from museum around Kampala and Wakiso districts of Uganda since they are most frequently accessed by tourists and scholars. Three (3) patrons, three (3) curators and ten (10) museum guides were selected purposively selected to form the study sample from various museums, and were interviewed from their workplaces to collect first hand information. A body of collected and presented indigenous iron artifacts was identified for analysis purposes. Respondents were selected purposively considering their experience and expertise in collection, preservation, profiling, presentation and managing of the musealization centers.

Data collection approaches such as of object-centered interviews and participant observation were employed in the data collection process. The interview guide bared a list of semi structured questions to be answered; flexible enough to allow other relevant themes to develop during the interview (Opiniano, 2021; Robson, 1993; Nordstrom, 2013). The interviews were conducted using stimulating materials such as images and iron artefacts which were provided to facilitate discussions (Barbour, 2008). Observations were made on the displaying and profiling of iron artefacts with in the selected museums. The data collected under participant observation, videography and audio recordings during sight visits to the selected musealization centres and interview sessions were used to transcribe the verbatim later analysed in narratives. Employment of multiple data collection methods was important move for triangulation of data to ensure validity and reliability (Dzwigol, 2020; Lemon & Hayes, 2020; Rooshenas, et al 2019).

## RESULTS AND DISCUSSION

The purpose of this study was to explore how burgeoning musealization centers in Uganda conserve the indigenous iron artefact of the Baganda people. The findings collected using object centered interview, participant observation and photography are presented under themes crafted from study objectives; conception of musealization centers, profiling musealized collection and display of collected indigenous iron artifacts.

## Conception of Musealization Centers

The data attained from the interviews indicate that musealization centers are established by individuals, families and organisations with divergent intentions, which sets up different perspectives in the modes of operation. These directs stimulations for the musealization of indigenous artifacts of the Baganda; the process of identifying, selecting and preservation of the Artifacts.

There are various inspirations that ignite the patrons' interests to establish musealization canters for indigenous artifacts, and iron artefacts are made part of the collection like others. Following observations during field visits at the selected musealization centers, it was noted that the musealia comprised of various categories indigenous artifacts other than only iron works; basketry, wood work, textile, pottery, musical instruments, and images of other historical events and activities. Despite the fact that indigenous iron artifacts of the Baganda was the focal point of this study, all visited musealization centers had them in an accompaniment of other artifacts in the display as exhibited in figure 1 and 2. There was no single museum dedicated to indigenous iron artifacts of the Baganda.

Figure 3: War fetish collection

Figure 2: Assorted indigenous crafts of different tribes

The patrons and curators affirmed that their inspiration to establish museums emanates from their family background:

> Resp 1: I was inspired by the uniqueness of these artifacts […] I used to see them in my family members' homes because in our family hunting was a major activity my father and uncles used to practice every weekend.

> Resp 2: My grand father and father were blacksmiths in the *Kasimba* clan which is responsible for smelting and forging iron implements such as spears, arrows, hoes, bells and rattles. His key consumers were the Kabaka (King of Buganda), the security guards, divine healers and craft shops […] when he died, I picked the remnants of his smithery and started a cultural shop which I failed to sustain due to lack of suppliers and rent

arrears. When I got a personal shelter, I teamed up with y other four (4) friends, and decided to start up a collection center for local and international tourist so that I can earn money for a living.

Resp 3: I joined the establishment of musealization center as a curator and my sole purpose was to contribute to the conservation of our cultural practices that are facing extinction […] I feel my career is developing daily as a self-taught curator.  I feel with time I will decide whether I dedicate my entire life to this cause or other opportunities.

The response reveals that patrons of musealization centers in Uganda come from different walks of life, with different perspectives towards musealization as practice. Some do it to continue reechoing their family's past glory that they don't wish to lose like respondent 2. Others establish the centers to push their careers in line with curatorial practice and history for future greener pastures like respondent 3. Despite the divergent stimulations from every patron, they have conservation as one of the main stimulations and in turn, this influences them in setting up objectives on which the musealization center concept is guided and operated (Simon, 2010; Lord & Markert, 2007; Ames, 2005; Morbey, et al 2013).

When patrons pursue legal procedures to nurture the incorporation of musealization centers, they became independent bodies regarded as artificial persons with set parameters; objectives, mission, vision and working philosophies. They attract employees who sometimes work towards fulfillment of set objectives in the books of incorporation and sometimes vice vasa. Respondents revealed that the key objectives of their musealization centers incorporates conservation, presentation and promotion (Schärer, 2009; De Uzeda, 1980; Yasmin et al, 2017).

Resp 1and 3: This center was established to promote the Baganda culture and practices, and to conserve practices of the Baganda.

Resp 2: This museum was started to display cultural diversity of Uganda and that's why cultures of all tribes are represented accept the minority tribes.

The responses affirm that patrons had clear objectives for the conception of their musealization centers. Although the display and ordered environment were observed inside the museums, there was evidence of inconsistence in their motives. Some had products made out of modern or

imported steel from outside countries disguised as original indigenous iron artefacts of the Baganda to have enough collection. Designs of artefacts were well crafted and collected from the Baganda community. This ignites the question of authenticity and indigeneity in the displayed artifacts. Such a challenge in the musealization centers could be emanates from the collection process, which strikes the question of identification and selection process (Kreps, 2020; Karababa, 2015; De Uzeda, 1980).

As observed, identification and selection are very important steps in collection of indigenous artifacts for musealization. Collectors should therefore employ high level of vigilance to get the right objects. If the process is not handled carefully could lead to collection of wrong items and leave out the rights ones. When interviewed how they handle the selection and identification process the respondents gave following narrations.

> Resp 1: Since our museum focuses on preserving the Ganda culture, we consider the uniqueness of the object […] the purpose they serve […] materiality, their value and relevancy to the Baganda.

> Resp 2 and 4: We consider the available space; since it is a small cultural heritage center; we only select those portable items regarded to be most important among the Baganda…

> Resp 3 and 5: Sometimes we are inspired by new documented facts from different scholars, and other artefacts are recommended by some tourists and other interested local scholars, leaders and community members with knowledge.

The first response affirms that purpose, materialism, values and relevancy of artifacts to the community are very important aspects considered in establishing a collection for the musealization center (Russi & Kieffer-Døssing, 2019; Pinto, 2019; de Lapérouse, 2020). Response 2 and 3, however, put available space, size of the artifacts, and recommendations in documents and oral narration in high consideration while identifying the collection to musealize. This approach directs decision making for what to collect and the whole purpose for the musealization center to foster conservation of cultures.

In the musealization process for conservation, preservation is a very important aspect in musealization of artifacts. It covers all the operations involved when the collected artefact is

getting processed to become a musealia; all operations of acquisition, entering in the inventory, recording in the catalogue, placing in storage, conservation, and if necessary restoration (Van Saaze, 2013; Matassa, 2011; Van Mensch, 1990; Alivizatou, 2008; Edson, 2005). Preservation as a major activity is highly sensitive; it focuses on understanding and maintaining the key elements of the artifacts in collection such as materiality, design and style. The process concedes musealization centers to acquire and display well-handled artefacts. The following responses were obtained from interviewees regarding how preservation is conducted in their respective musealization centers:

> Resp 1and 2: We first study the nature of the artifact before having them into our storage […] since we store all collected artifacts together before presentation due to space limits. We sort the in terms of materials and types.
>
> Resp 3 and 4: We use liquid soap and a wet towel to remove the dirt and rust to…
>
> Resp 5: We clean them using detergents and remove the rusts some time using steel wire it works so well […] sometimes we just buy new ones from the available selling points like blacksmiths' workshop and craft shops.

The responses above reveal the rudimentary approaches used in the preservation of collected iron artifacts, which might in turn damage the collected artefacts, since it is not clear whether the used detergents contain chemicals which are harmful to iron objects. When this process is not handled well, it can cause a compromise in the visual appearance of collected artefacts. This is reflected on by Huber (2019) who argues that mmusealized artifacts are important for the memory of a society therefore each process of preservation should be handled carefully.

## Profiling of the musealized collection

Data collected under this theme focused on how musealization centers extract information for documenting the lives behind collected artifacts. Whereas profiling information was still an important aspect considered as a part of musealia in some museums as displayed in figure 3 , in other museums profiling was not made part of the musealia as observed in figure4.
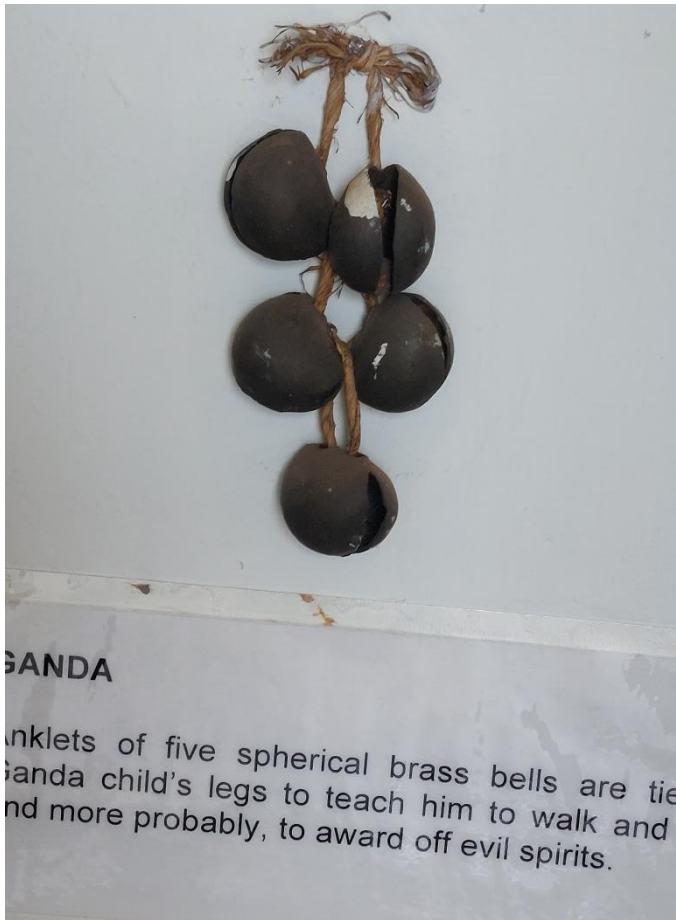
Figure 3: Endege (Rattles)

Figure 4: Iron hoe of the Baganda

In the modern era Musealization centers are obliged to serve as educational centers rather than just buildings for keeping scientific and artistic artifacts (Günay, B. (2012). With thoughtful reflective documentation and artifact preservation, a culture can be recorded and remembered regardless of its future. It makes the profiling of displayed musealia to be easily shared and understood by those from different cultural backgrounds (Yasmin et al, 2017; Trunfio, et al, 2020; Conti, et al, 2017). Profiling directs and describes what is displayed for visitors to the musealization center this is in reference to figure 5.

Figure 5: Iron Knives from Buganda and Busoga

The following response reflects what the interviewees replied when asked about their profiling of collected indigenous iron artifacts.

> Resp 1, 2 and 5: We just get the local names, the English names, the materials and record it in the records book […] the functionality is also important so that we can explain it to our visitors […] can't afford paying historians and curators for the detailed profiling process because they are expensive yet we are a private museum with no funding.

> Resp 3 and 4: We have a team that handle recordings from communities before artefacts are stored for future display […] some of the profiling content is presented and some stored in notebooks due to limited space for display. […] as you see the museum has several subjects to handle apart from the indigenous iron artefacts of the Baganda […] the space does not expand it's the same for some years but the collection keeps on growing in numbers […] we need a bigger museum with specialized galleries for a better display and profiling.

The response from respondents 1, 2 and 5 reveals that some musealization centers don't do much in gathering profiling information for the collected indigenous iron artefacts. Partially, due to huge costs involved and musealization center can't afford to fund in depth profiling however important it is for the musealization highlighted by Yasmin et al, (2017, p.4,). Their focus is on the costs needed rather than implication it can have on their operational progress as a tourist and scholarly center. The response from respondent 3 and 4 reveals that some musealization centers take profiling as a vital aspect of musealia through working with the community. They find it important to incorporate profiling information in their display which make it informative and educative (Maroević , 1998; Latham, 2016).

Where musealization becomes to a collective responsibility, the community plays a pivotal role in manifesting profiling content for the indigenous iron artifact since it consists of the constituency of makers, users and the scholars as part of its composition. Any musealization center to acquire important information about the collected artefact needs to consult the community since it has the custodianship of knowledge and skills regarding its conception, functionality, values, innovations, inspirations (Kreps, 2020). Their voice is necessary in the profiling process; thus the community has been collaborating with burgeoning musealization centers as highlighted below.

> Resp 1and 2: They used to come and demonstrate for us how some iron artefacts are made but the practice could not be sustained due to costs involved since we operate on the small budget.

> Resp 3and 5: Involvement in demonstrational activities of the center could help us to collect information for documenting already collected iron artifacts […] experts were available to explain the process and other community members (elders and craftsmen)

could explain the impotence, the rituals around it and how they were using the product then and today.

Resp 4: They provide us with the old manuscripts about the collected iron artifact since they have used them in their daily lives […] to most of them they are instruments of identity.

Referring to the above response, the community has been involved in collection of content for the selected indigenous iron artifacts for musealization by demonstrating the processes and the methods through which indigenous iron artifacts are produced, providing information for their utilitarian aspect, values, relevancy, symbolism, how they are used in language; proverbs, metaphors and rituals (Muniz, 2020). However, the challenge came up regarding the question about quality, authenticity and clarity of content documented. Most musealization centers survive on a low budget which can enable them to hire professional curators and historians. The findings from interviewees regarding this profiling content confirm that some musealization centers don't prioritize a need for professional data collection for profiling.

All reps: We just record content as we receive it from the community and the researchers who come here to collect information; we don't have a professional curator […] we ask questions that we feel may be of our interest and to know something we can explain to our tourists in case they ask. They take pictures and some give us ideas on how to document and display information. We have not yet developed a good system we are still waiting for ideas on how to do it.

The response reveals that most musealization centers largely depend on average expertise in the process of collecting relevant content about artifacts. Therefore, the standardization of content on displays of indigenous iron artefacts of the Baganda cannot be attained. Most of the content given is shallow with no accurate elaborations. This was also observed during site visits. There was a lot of misinformation regarding the names of the artifact. Names were switched and placed on wrong iron forms and others were misspelt. The entire displays had not been catalogued (Cultraro et al, 2009, Hendrix, 2020). This jeopardizes the fundamental roles of musealization centers; to conserve, construct identity, and to educate those who belong to the heritage and those in search for information about other cultures. (Yasmin et al, 2017; Schärer, 2009).

**Display of collected indigenous iron artifacts.**

Display in musealization is a complete artifact of its kind. It involves lighting systems, positioning of artifacts, attaching tombstones. The entire concept should be in line with the museum mission and relevant sent objectives as highlighted by (Simon, 2010; Lord & Markert, 2007; Ames, 2005). Therefore, observations were on the materiality, aesthetic value, purpose display as rooted in the set objective for incorporation and meaning of the artifacts in displays. Analysis was made basing on; arrangement exhibition concept based on lighting, theming, management, and descriptions collection.

The situation found in the selected musealization centers regarding theming was confusing. There was no systematic flow in the display which was causing a challenge in viewing the entire exhibition. Indigenous iron implements were not displayed following purposes nor technological grouping. Items were displayed in unsorted manner and mixed as observed in figure 6.

Figure 6:

The Interviewees regarding the matter of theming responded that:

Resp 1,2,4 and 5: Most times we display these artefacts following the designs they possess […] also follow the function and purposes they serve […] periods are not important in our display; some historical content can't be gotten from this community which has been destabilized for some time, we can't access relevant content to aid our theming of the displays we make.

This response partly biased because theming in not only done following one-fold of chronological history. The display could as well be directed by themes based on activities of the Baganda, materials or the processes of producing the artifacts to make the entire concept of display easier to navigate (Rizzo,2019; Romanelli, 2021; Trunfio et al, 2022).The state in which the displays were made exhibit a high level of unauthenticity and it could hardly capture the viewer's attention. This could have had an implication on the turn up of clients as was observed in the visitors' books. Good display concepts contribute a lot to the creation of position in the visitors' minds and it can make their high turn up and vice vasa (Camarero, et al. 2015; Borowiecki & Castiglione, 2014; Camarero & Garrido, 2008).

Most display sections were made up of wood: pedestals and shelves, and some few compartments designed using glass materials. Regardless of some mistakes in the profiling content, most exhibits had appended tags with some descriptive information. The display had florescent tubes and light sources not coordinated with the exhibits as presented in figure 7



Figure 7: Iron Artefacts

Some respondents on this matter revealed that:

Resp 3 and 5: We use our wooden and metallic stands, and glassed shelves lite with florescent tubes to prevent unauthorized access to some special artifacts by curious tourists; and the dust […] bigger objects we just display them in space. We use tagging papers to attach some content about the displayed artifact for easy description and understanding by tourists.

Basing on the levels of display technology, artifacts can make more meaning to the viewer once well presented with contrasting materials. Considering the displays observed in most of the musealization centers, the aspect of contrast, and visual balance were not put into consideration; (Ebert, 2018; Macdonald, 1992; Karp, 1991). Consequently, a compromise on esthetic in the presentation as a totality.

## CONCLUSION AND RECOMMENDATIONS

The study explored how burgeoning musealization centers in Uganda conserve the indigenous iron artefacts of the Baganda people. the study findings have been discussing following crafted themes from the study objectives; conception of musealization centers, profiling of the musealized collection and display of collected indigenous iron artifacts. Therefore, the key findings derive us of the following conclusions.

The study findings indicate that traditionally musealization centers have their historicity and conception tied to the activities of conserving, interpreting and displaying representative collections of material culture (de Uzeda, 1980). Musealization of the indigenous iron artefact of the Baganda is becoming a growing industry in Uganda as a response to the rising need to conserve and document the dying indigenous practices of various ethnic groups, which are at the verge of extinction. This is possible due to the mushrooming musealization centers. The patronage has various interests, which drive them to establish these centers and therefore, most times overshadow the primary roles of musealization as highlighted. Therefore, there is a need to establish a musealization council to supervise and guide museums as par their objectives of establishment

The findings reveal that musealization centers are challenged with the ability to hire professional historians and curators, this affects the entire process of musealization; dentification, collection, preservation, documentation and displaying. Largely this is attributed to their operationalization on low budgets. They have no funding and they cannot collect enough revenues from their sales

and activities to meet the required needs. This affects activities with requires funds such as documentation and cataloging of collected artifacts. Hence a call for the administrators of musealization centers to seek funding opportunities or carry out collaborative research projects on their areas of interest and also to tap into networks of volunteer researchers.

Musealization centers are struggling with limited space for the available large collection; artifacts and their minimal descriptive information. This limits exposition of relevant information towards scholars and tourists interested in the studies related to the collections. Improved space for the exhibition would lead to better presentation of the displayed iron artefacts and easier navigation of the entire display. The patronage of musealization centers should also consider exploring modern technologies to develop digital platforms for efficient display

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# Enduring Designs: Exploring Cultural Resilience through production of Baganda Indigenous Iron Artifacts in globalized space

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## Abstract

The main objective of this study was to examine the resilience of Baganda in production and consumption of their indigenous iron designs in the globalized contemporary space. It interrogated the adaptations in production of indigenous iron artefacts designs, their continuous relevancy, and how the Baganda view these designs in their cotemporary space impacted on by the various attributes globalization. A total of fifteen participants selected using purposive and snowball sampling techniques was composed of merchants specializing in trading indigenous iron objects, household users, and blacksmiths. All respondents were identified from Buddu and Kyaggwe counties of Buganda kingdom. Data extraction process was through library search for secondary data, and primary data was gathered through interviewing and observing participants; this was used to triangulate obtained information which was analysed using qualitative content analysis approach. The study findings indicated that the Baganda have a variety of intricately crafted iron items in their indigenous iron collection, with spears and arrows being the most notable and commonly used objects in today's society. These artifacts blend well with the current needs and are influenced by both the indigenous and the contemporary practices of the Baganda suck as agriculture, modern design production, security and performance arts. The increasing demand for these indigenous iron artifacts driven by their aesthetic value, performance, and political relevance among the Baganda, has played a significant role in warranting their continued production. Additionally, initiatives aimed at preserving cultural heritage have helped to shift perceptions towards a more positive view of the significance of these designs. The concludes that although the Baganda have faced significant reformations in their culture due to globalization, leading to the transformation of indigenous spaces into modern ones, indigenous artifacts remained important for cultural practices, domestic use, and as sources of inspiration for new innovations.

**Keywords:** *indigenous designs, Iron artifacts, globalization, perception, The Baganda.*

## INTRODUCTION

This paper presents a portion of field research findings gathered from Kyaggwe and Buddu counties in the Buganda kingdom. This paper focused answering a bigger question; what stimulates the resilience of Baganda in production and consumption of their indigenous iron designs in the contemporary space despite the availability of modern substitutions. It interrogated the drives behind adaptations in production of indigenous iron designs, their

continuous relevancy, and how the Baganda view these designs in their cotemporary times. the study was drawn from consideration of impacts attributed to globalization such as hybridized cultures, tourism, modern education, religion, multiplicity patronage and change in ownership of resources. (Humphrey et al, 2001; Arndt, 2004; Dhanagare, 2003; Ž ILKOVÁ, 2021; Sideri, 2020). Utilizing data from my ongoing a PhD research project field work focusing on the production and consumption of indigenous iron artifacts of the Baganda in Uganda, this paper delves into how globalization has impacted on production and use of indigenous iron designs, as well as the attitudes and strategies employed by the Baganda to protect and promote their cultural heritage. By combining data from historical analysis with observations and interviews from field work , the paper contributes to the ongoing conversation by contemporary scholars on how indigenous art can withstand and thrive amidst global influences (Awogu-Maduagwu, 2016; Groh, 2006; Ahmadi, 2005; Burton, 2009; Ugor & Mawuko-Yevugah, 2016; Kakande, 2008).

Designs are the visual tangible ideas established after material manipulation either in two- or three-dimensional form. Kazmierczak (2003) affirms that "design draws upon the concept of diagrammatic reasoning, and proposes that all designs be regarded as diagrams of mental maps of individual and collective cultures". This perspective on designs has been a commonly held belief for different Baganda both indigenous and modern attributions in producing iron artifacts; fostering production of useful items for utilitarian and decorative purposes.

Diagrammatic reasoning in design formation incorporates decision making as core component during ideation, planning, production and evaluation of the product as a material object for user experience to foster future innovations (Redström, 2006). This has been reflected in indigenous iron works of the Baganda where products are made to meet different needs at societal, communal or individual levels. Consequently, designs for indigenous iron works have to be studied in taking account into esthetics, ergonomics, and cultural considerations either in modern or indigenous context.

Designs in the indigenous realm of Baganda can be exhibited in the cultural heritage collection of visual ideas incorporating a number of native artefacts made for identity, esthetics, symbolism and sometimes utilitarian purposes. These include but limited to basketry, pottery, woodwork, jewelry, musical instruments, textile, architecture and iron works. the artefacts in the above-mentioned categories have gone through various transformation in which have led to alterations

in their design attribute; colours, material, meaning, functionality, production process, decorating styles and among others either by cultural fusion or appropriation as agents of globalization. However, for the purposes of contributing towards the fulfillment the PhD research project purpose, this study focused on designs of indigenous iron artifacts. The artifacts include but limited to hoes, bells, spears, knives, rattles, arrows, axes, sharp implements and among others.

Figure 4: selected indigenous iron designs of the Baganda

## Contextualizing indigenous iron designs

Iron artifacts where developed for different purposes in different societies and their relevancy is still evident in communities where they are embraced (Reitsma et al. 2019; Tunstall, 2020; Sheehan, 2011; Rangel, 2013; McMaster, 2020; Mutungi, 2015). The enduring significance of indigenous artifacts designs can be observed in various communities where they are valued and

integrated into everyday life, whether it be in a traditional, modern, or indigenous context. They are part of political and social- economic development fabric of the modern societies as sources of income, symbols of resilience bringing the past to the present, homage, resistance, identity and peace construction.

The designs of indigenous iron artifacts have been utilized as symbols of hegemony fostering national pride, appearing on national emblems, currency, and flags (Hambly, 2022). They serve as a catalyst for technological advancements and creativity in design, showcasing a rich cultural heritage that inspires both locals and tourists (Heersmink, 2023; Layton, 2020; Fredericks & Bradfield, 2021; Nicholas, 2022). The craftsmanship of creating these indigenous designs provides an important source of income for artisans, as well as contributing to the revenue of museums and tourism industries (Mutungi, 2017; Wherry, 2006; Mutungi, & Ghaye, 2013). Incorporation of these iron artifacts into various aspects of society plays a significant role in the economic development and global identity of peoples as collections

In some communities, indigenous iron designs are produced and consumed despite societies' submission toward globalization tendencies. The production processes are influence by emerging formation of hybridized cultures, tourism, modern education, religion, multiplicity patronage these have fueled indigenization and de-indigenization in iron artifacts designs and otherwise. The products are embraced by natives and immigrants' cultural trends, materials and design ideas. However, in certain societies such as the Sami community in Norway, Native American tribes, Chinese communities, Japanese cultures, the Masai people in Kenya and Tanzania, they still hold they still hold their indigenous practices and productions in high regards.

In Uganda cultures like the Banyoro, Banyankole and Baganda indigenous people in Uganda, iron designs are cherished traditionalists and still valued by some contemporary groupings such as visual artists, musicians, commercial security organisation and among others for different functions (Kekimuri & Wathum, 2024; Kabiito, 2010; Kekimuri, 2018). Indigenous people and migrants herein referred to as people in multicultural settings to still utilize the indigenous iron production to solve contemporary needs. (Chen et al,2021; Fallan, 2007; Melubo & Carr 2021; Classen & Howes, 2006; Smith et al 2020).

The preservation and continued usage of the indigenous designs in various communities highlight the importance of honoring and celebrating indigenous traditions and heritage

(Crowell et al, 2010; Iseke-Barnes, 2003). Additionally, the widespread recognition and appreciation of these artifacts by both locals and visitors contribute to the cultural diversity and richness of these regions, fostering a sense of unity and respect among different communities. It is through these artifacts that the legacy of indigenous cultures is carried forward and shared with future generations, ensuring that their heritage remains alive and vibrant. As time progresses, these artifacts continue to inspire and influence contemporary Art and Design, serving as specimens and inspirational objects for designers and artists interested in incorporating elements of indigenous heritage into their work.

The legacy of indigenous iron artifact designs serves as a bridge between the past and the present, acting as a tangible link to the cultural history and traditions of these communities. By preserving and showcasing these artifacts, communities are able to showcase their unique identity and heritage to the world, fostering a sense of pride and appreciation for their cultural legacy. The intricate details and symbolism incorporated into these artifacts reflect the deep connection that indigenous people have with the natural world and their spiritual beliefs, highlighting the importance of maintaining harmony with the environment.

Through the creation and utilization of these designs, indigenous communities are able to express their cultural values and beliefs, passing down age-old practices and knowledge to future generations. Consequently, the enduring relevance and significance of indigenous iron designs in various communities underscore the importance of preserving and honoring cultural traditions, showcasing the creativity and ingenuity of indigenous artisans in Uganda and other part of the world throughout history.

## Statement of the problem

Whereas the contemporary Baganda people like elsewhere in the world are experiencing cultural change and avant-gardism in cultural practice and consumption design ideas emanating from attributes of globalization, there is no total shift in the paradigm indigenous iron designs production. The Baganda have continued to embrace the production and utilization of their indigenous iron designs in various ways for cultural pride, identity construction and economic gains. The indigenous iron artifacts serve as a body of the rich cultural heritage and craftsmanship of these communities, showcasing a deep connection to their roots and traditions. Their intricate designs and craftsmanship of not only reflect the artistic abilities of the creators but also tell stories of the past, capturing the essence of their cultural identity, cultural pride and history of the Baganda. This can be lost if the strides in the continued production and relevance

of this material culture of iron works is not studied to inspire and nurture future design innovation for identity and posterity in indigenous technological advance as globalization manifestation is reaching a higher level of manifestation and consolidation phase. Hence, prudence to analyse patterns for the resilience in the production of indigenous iron designs of the Baganda in the globalized space.

## LITERATURE REVIEW

### Historical context on significance of iron among the Baganda

Baganda Indigenous iron artifacts and their historical relevance have been significantly elucidated by various scholars such as (eg Kekimuri, 2019; Chrétien 2003; Iles 2013. Robertshaw 1997; Buchanan 1974; Childs 2000; Robertshaw 1991, 1994; Roscoe 1923; Tantala 1989; Iles 2011; Iles 2009; Reid, 2012). Their contribution on documentation of this significant knowledge cannot be ruled out; as part of sources that provide acclaimed evidence for affirming iron artifacts designs as pertinent material culture to the Baganda. The artefacts where used in playing a pivotal role fulfilling Buganda's political and economic ambitions with in the region in terms of territorial expansion and control, and trading. Kyaggwe and Buddu are some of the key counties that supported Buganda establishment of iron industry before assuming Kkooki county from Bunyoro in 1896.

The technology of iron smelting and forging was a greater economic muscle of Buganda development and its neighbors such as Bunyoro kingdom, Ankole, and Karagwe. It is asserted in various scholarly writings that Bunyoro's iron industry inspired the establishment of iron smelting in Buganda Kingdom. This is backed up by different archeological and anthropological studies by various scholars such as (Iles, 2013; Humphris, 2009; Iles, 2013; Humphris, 2010; Iles, 2014). The cultural contribution of iron artifacts in terms of as moral construction, proverbs, and legends and contemporary stories written by local writers demonstrates the contribution of the indigenous iron designs in the political, economic, social fabric construction, and enriching the language and naming.

Iron artifacts have served as symbols of power, authority and symbols of identity to different bantu cultures such Bunyoro, Kihaya, Karagwe, Buganda, Zulu and among other (Reid & MacLean, 1995; Reid, 2012; Schmidt & Mapunda, 1997; Kuper, 1980). Irrespective of the esthetics in design, indigenous iron forms where designed to serve utilitarian purposes and meanings. Utilitarian purposes included such knives for food preparation, spears and arrows as

weapons and instruments of power for human leaders and the gods, bells for hunting activities and rearing animals, rattles for dancing and divination rituals. The realms of meaning making and the symbolism of the of these iron artefacts designs more so the arrows will be extendedly discussed in another paper extracted from the above highlighted project content.

Some of the significances of design in the indigenous lives of the Baganda mentioned above did not change, they are still the same in contemporary life since some of the cultural practices have survived the new changes caused by transformation under globalization. Therefore, indigenous designs and productions are often used as substitutes in absence of appropriate contemporary technology; hoes, knives, spears and arrows are used in absence of modern equipments in Uganda (Mutungi, 2015; Chirikure, 2017; Mtetwa et al, 2017).

## Globalized contemporary space and its influence in Buganda

Globalization comprise of interconnectedness and integration of economies, societies, cultures and nations across the world. It incorporates exchange of goods, ideas, technologies, services and the people on global scale leading to more inter dependence and connectedness of regions (Pannilage, 2017). Therefore, it has facilitated for economic integration, cultural exchange, technological connectivity, social impacts and political interdependences and environmental and cultural considerations. It has transformed the world into more of inter connected and interdependence community shaping the important spheres of contemporary space such as economies, cultures, societies, technology and governance structures of the global scale (Heimberger, 2022; Oliver, 2017; Castles, 2001).

In many other parts of the world different communities, provinces, kingdoms and empires have been merging under will or force to form one bigger unit like countries, federations, and unions such as like the East African Community (EAC), the North Atlantic Treaty Organisation (NATO), European Union (EU), United Nations (UN) (Laine, 2017). Similarly, country blocks were formed. Uganda as a country emerged as an amalgamation of 15 provinces Buganda inclusive, globalization as a phenomenon was the major cause of its manifestation; existence of colonialism, universalized of education, imperialism through religion and cultural assimilation, global technological advancement and among others. Indigenous states of the time like Buganda did not remain intact in terms of believes, technology, culture, leadership and social fabrics. The Baganda had to embrace cultural change and avant-gardism; culture hybridization, change in ownership of resources which has led to transformation hence indigenization and de

indigenization of ideas, practices, material culture and non-material culture (Oliver, 2017; Bengtsson & Östman 2013; Huyssen, 2016).

The manifestation and consolidation globalization saw many indigenous communities change their s of seeing themselves and operating due to the changes in the geographical spaces, embracing new cultures of their colonizers and the subjects from other societies, changing their religious believes and adopting new ones and in some African societies hybridization of likes emerged (Tsanwani et al, 2017; Reid,2019).). Many cultures like the Baganda transformed from their indigenous setting into a Eurocentric appropriation; replacing the spear grass with iron sheets in roofing architectural structures, replace iron spears with guns for security purposes, replacing clay tabs (Emumbwa) with modernized medical tablets and injections (Nyamnjoh, 2004).

Buganda, a kingdom located in the central and southern present-day Uganda, occupies an intriguing position in the country's contemporary space. As one of Uganda's four traditional kingdoms, alongside Bunyoro, Toro, and Busoga, Buganda holds significant cultural, historical, and political importance both within Uganda and on the international stage (Reid,2012). In the context of globalization, Buganda has experienced both challenges and opportunities. On one hand, globalization has facilitated the spread and commercialization of Buganda's culture, traditions, and values to a global audience. This includes the promotion of Buganda's rich cultural heritage, such as its traditional music, dance, language (Luganda), art, and craftsmanship through tourism and education.

Organizations and individuals from Buganda have embraced digital platforms, international events, and cultural exchanges to showcase Buganda's unique identity and foster cross-cultural understanding. However, these avenues of globalization have also brought about changes and pressures that impact Buganda's cultural landscape. Rapid urbanization, technological advancements, and increased interconnectedness have influenced traditional practices, lifestyles, and social structures within Buganda.

These changes raise questions about how Buganda's cultural heritage adapt and thrive in the face of modernization and globalization without losing its essence and authenticity. In the globalized contemporary space, Buganda continues to navigate a delicate balance between preserving its cultural heritage, promoting economic development, and engaging with the wider world; characterized with multi faced patronage, multiple power base other than in past where the

Kabaka was the trust of everything. Efforts to revitalize traditional industries such as iron works, promote tourism, and support cultural education and preservation has played a crucial role in ensuring Buganda's material cultural legacy endures while embracing the opportunities and challenges of globalization.

## MATERIALS AND METHODS

The study was qualitative in nature and therefore ethnographic research approach was employed for the immersive fieldwork; interviews and participant observation methods were useful in collecting data from selected respondents in the contemporary community of the Baganda (Nurani, 2008; Ejimabo, 2015). They consisted of knowledgeable Baganda about indigenous iron artifacts designs. The approach was prudent for establishment better understanding of the cultural practice significance, and the resilience regarding continued production and use in the globalized contemporary space. The ethnographic approach was further important in providing rich contextual insights and fostering collaboration with the selected participants (Menzies, 2001).

Participants in the categories of users and blacksmiths were selected from Kyagwe and Buddu counties of Buganda kingdom. The counties are believed to have been the first major hubs of iron smelting in Buganda before Buganda annexed Kooki county. The counties endowed with lager deposits of iron ore locally known as *Amatale* and forests to provide trees as raw materials for charcoal production; important resource in iron smelting forging. The highlighted counties occupy the geographical spaces of contemporary districts in Uganda for example Kyaggwe is parts of greater Mukono and Buddu is cover some part of greater Masaka.

Two sampling techniques where used in identification and selection of respondents under the two highlighted categories and these where purposive and snowball sampling techniques. Purposive sampling was for identification of participants in the user category for their experience and broader knowledge about the acquisition and the function of indigenous ironworks of the Baganda. (Barratt & Lenton, 2015). Therefore, the experience of respondents was highly considered in forming a sample. Snowball sampling technique was used in accessing respondents in the blacksmiths category who are rare in public and their workshops are in hard to reach places. Respondents in the category of blacksmiths were identified through

recommendations from their fellow blacksmiths and sometimes the dealers could also provide important information that could lead to some other blacksmiths in remote villages.

The fifteen (15) interviewed participants comprised of; six (6) merchants three (3) from each county specializing in indigenous iron objects, four household users two from each county, and five (5) contemporary smelters three (3) from Buddu and two (2) from Kyaggwe county. All respondents were between the age of 18 to 75 years of age this was considered in line with labor laws of Uganda which permit only those above 18 years of age to work under hard labor, and iron smelting and forging as a skill is not exceptional. Except blacksmiths category which is known culturally to be practiced by men, gender balance was observed in other two sub categories; merchants and household users. The trading and using of indigenous iron artefact in the contemporary work is not discriminative under gender.

Semi-structured interviews were conducted with participants who consented to volunteer in the study (Sin, 2005), and their activities were observed to support the information obtained through interviews; a combination of the two methods was prudent to attain triangulated data. As a qualitative data collection technique, interviews were important in eliciting elaborate responses from participants (Absentees, 2014; Roulston & Choi, 2018). Therefore, an interview guide with semi structured questions was utilized to attain flexibility and ability to ask follow up questions as well as probe deeper into subtopics basing on participant's response (Kallio et al, 2016). This approach provided for more detailed and nuanced data collection while still maintaining some structure.

Participant observation as a data collection technique enabled possibility of observing the participants in their natural environment and their artifacts, their behaviors, interactions with the artifacts physical on nonphysical without artificial manipulation (Iacono et al, 2009; Vidich, 1955). Where possible active role was taken to gain deeper insights into processes, behaviors and nature of the art artifacts. Observation checklist was developed with outlines extracted from key subtopics. The data collected was analysed using qualitative content analysis to emphasize in-depth interpretation and subjective understanding the phenomena under study (Selvi, 2019). Thus, Themes, pattern and meanings were identified through coding and thematic analysis, allowing richer insights into the context and statures of the contents.

## RESULTS AND DISCUSSION

This study paper purposefully focused on examining the resilience of Baganda people in production and consumption of their indigenous iron designs in the globalized contemporary space. this re-echoes on the continuation and translocations in indigenous iron production for contemporary use. Therefore, the study findings are presented and discussed under two major thematic approach crafted from the study specific angles of focus; resilience and adaptations in production and consumption of indigenous iron designs, their continuous relevancy, and how the Baganda view these designs in today's globalized world.

## Resilience strategies

The Baganda is one of the cultures that have continued to live in unceasingly changing environment which is getting more influences from different regions of the world as faze of globalization. Since the advent of globalization, the Baganda have experienced transformations inspired by cultural change and avant-garde ideas. The changes have greatly distorted their political, social and, economic life, from indigenous settings to contemporary settings. However, indigenous iron designs have proven to be resilient cultural components rooted in their lives marriable to their new cultural perspectives as an impact of globalization. Cultural practices related to indigenous iron designs such as hunting, agriculture, divination practice, performance of last funeral rights, kingdom activities among others have led to the continuous demand for the indigenous iron artifacts that best suit need. This is evident in most responses

> Resp: Bs 1,2, and all Us; "Even though there some new life perspectives that might have caused the change in our live as the Baganda such as new religions, wars, education, and coping manners from Arabia and Europe cultures, we have not given up to our identity. We still love our cultural practices as we still appreciated them before the restoration of our Kingdom".

The resilience of the Baganda is continuously maintaining some indigenous cultural practices learned and adopted for generations. This has sustained the continuous demand and supply of iron artifacts since in some cases specific designs are required in performance of cultural activities. Therefore, the demand for iron forms re assures need for production and trading of indigenous iron designs get sustained. This in line with what some respondents bellow.

> Resp: Bs 1 and 4 narrated; Much as we got some new items from the foreigners that we could substitute with our locally produced items, our ancestral spirits still insisted on use of some items such as the ganda spear, the ganda knife, the ganda basket

and the backcloth. These indigenous artefacts are so important in *Okwabya olumbe* (performance of last funeral rite), *Okusumika osika* (instating the here, *Okusumika kabaka* (coronation of the kings), and *Okusamira* (traditional worship).

The production, supply and trading of the indigenous iron artefacts of the Baganda enabled survivals of designs for indigenous iron artifacts to date and their role in the relevant cultural practices of the Baganda to be feasible. This led to continuity of identity for the ganda culture through the unceasing production in the realm of iron artefacts for different purposes.

Whereas the Baganda had a variety of designs in the indigenous technological field of iron works, many of them started facing extinction due to the shift in the culture construct. This emanated the change, transformation and reformation of the society pedaled by globalization ideas. However, there are some designs which have survived to date such as the arrows, spears, rattles, needles and Knives.

> Resp; Bs 2, 3 and Us5: We used to make different iron crafts with our skilled grandfathers for different use in our everyday life in the Kingdom of Buganda. However due to the change in lifestyle some cultural practices have vanished […] we no longer see the relevance of producing some iron artefacts because there is no demand for them. We stick to those which are on high demand by dealers and the cultural institutions.

Some cultural activities among the Baganda which required use of the iron designs are no longer practiced because of cultural changes. Hunting which made spear and arrows to be on high demand is no longer highly active due to the clearing of the different forests and introduction of different tough constitutional laws protecting the wild life. This has not only affected cultural promoters, hunters and other participants but also the dealers in the iron artefacts.

Most of the craft shops recorded a big reduction in the number of clients they used to supply with the hunting iron tools such as the arrows and spears. A similar scenario happened to different practices such as agriculture, wood curving, security and defense, and among others when modern sophiscated tool where introduced. this is observed in the re enforcing of Kabaka's (King of the Baganda) security with modern weapons as opposed to the use of indigenous iron artefacts as it was in the old times (Kekimuri, & Wathum, 2024).

As a result of globalization, the iron industry of has experienced a significant impact on the design of indigenous artifacts in several ways. Global trends have influenced iron works; Blacksmiths often draw inspiration from global design trends, incorporating new materials, techniques, and aesthetic components into their idea production. This has nurtured a fusion of indigenous, traditional and contemporary elements, catering to broader markets while maintaining cultural substance. Blacksmiths and dealers reach a wider audience through online platforms, international exhibitions, and collaborations with global brands. This exposure has provided opportunities for economic growth and cultural exchange.

> Resp; Bs 1, and Us2 and4:..invitations are always received from different event's organizers both at local and international levels. They dominantly for cultural exchange to show case our collections and elaborate their relevancies to the world. The white men come and interview us and try to work with us in our workshops. We earn from the productions and the funds we attain from different organisations.

Globalized contemporary space has been a catalyst to the standardization of indigenous artifacts to meet mass-market demands. Though, there is also a growing trend towards customization and personalized designs, catering to niche markets and preserving the uniqueness of indigenous craftsmanship. The Baganda have owned their indigenous iron designs as a collective sharing it openly to different generations in Buganda and beyond on international scenes.

Mmodern technologies have been accessed through cultural exchange programs. As a result, production of indigenous iron designs by globalized tendencies has been established this incorporates use of digital design tools, 3D printing, and sustainable practices enhancing efficiency, quality, and environmental conservation. Therefore, the ideas of producing, consuming, and relevance indigenous iron designs of the Baganda are still interpolated in the minds of different generations through oral tradition irrespective of being excluded in modern education curriculums

The globalized contemporary space has served as a breeding ground for ccultural aappropriations among the Baganda. Whereby indigenous iron designs and motifs are used without proper acknowledgment for their indigenous cultural significance but rather giving them a new purpose and sometimes crafting a hybrid purpose. The respondents affirmed that

> Resp; Bs 2, 3: Now days spears, arrows and rattles are used out of activities we used to know them for. Now days not only bought by divine healers and other culturalists but also people buy them for different reasons such as using the as ornaments in the interior décor, decorative components of furniture tables, wall hangings etc.

Since the manifestation of globalized space, the production and consumption of indigenous iron designs has proven to be a practice which has survived challenges. the Baganda have continued practicing and promoting iron works through oral tradition. this has been done through incorporating the iron information through their myths, proverbs, their indigenous religion. iron works has also inspired many names such as Nampijja, Lwasampijja, Sempijja and among others. This has fostered the preservation of the knowledge about iron works; material, production, designs and functions.

## Contemporary adaptations

Globalization has not only changed the way of the Baganda live and perceive things but also how they make, use and interpret indigenous iron designs to themselves. Its influence has been observed in different cultural related practices that form the general fabric of any surviving cultural practice of the Baganda as a people in the globalized contemporary space. The key players in the indigenous iron industry have endeavored to embrace contemporary ideas as the indigenous iron industry takes a new twist of survival. Contemporary adaptations of indigenous iron artifacts designs incorporate blending traditional craftsmanship with modern techniques and materials to create innovative and culturally relevant forms. Various approaches to contemporary adaptations of indigenous iron artifacts designs have been embrace by different stake holders among the Baganda; black smiths, the *Bakopi*(commoners) and the *Balangira* (Ruling clan).

Materiality as an important component of iron designs has been affected by various environmental policies set by both Uganda government and international bodies. The policies have contributed to the baring of blacksmiths from extracting materials such as iron ore, trees for charcoal. and other related natural materials from the different consecrated areas. This is affirmed by all respondents in the category of Black smiths

> Resp: all Bs; We are no longer allowed by Nation Environment Management Authority and National Forest Authority to excavate iron ore and forests-based materials for

our productions. but we rather we try make use of available scrap and materials to enable our production.



**Figure 5: Ganda rattles presented in metals of different colours for different gods**

The limitation in accessing locally has inspired blacksmiths to think of alternative material that can substitute the indigenous materials. Now charcoal in some workshops was replace by electricity, and welding tools and welding rods. Material Innovation has led to exploration of new materials and technologies that can complement and replace traditional iron smelting but not the designs. For example, incorporating iron, brass, copper stainless steel, aluminium, and alloys enhance durability. This is done in consideration of maintaining the essence of indigenous designs please refer to figure1; some of the highlighted materials in this paragraph were used in making rattle designs above.

Taking advantage improvised materials such as scrap saves blacksmiths from some of the huddles, they used to face in the iron smelting process. the already processed metals are easier to forge and does not require a lot of charcoal to heat them. The materials further manifest ssustainable practices with emphasis on the production process, such as using recycled iron or implementing eco-friendly techniques like low carbon emission forging methods. This aligns with contemporary values of environmental responsibility and resource conservation which policies are pushing forward as the affecting material accessibility for iron smelting.

> Resp: all Bs; All blacksmiths affirmed that the old way of making iron from iron core used to be a bit longer and complicated compared to just getting old used metals to forge items. Though use of already made mettles compromise the strength tangible and the intangible values, because not all indigenous iron forms are made in the same way. Some forms are made for spiritual purposes and therefore the materials manifest their powers

The above response highlights that indigenous artform are not only valued for their functionally which necessitates the physical strength but rather other components such as originality of the materials, meanings and ritual imbedded in the iron smelting process, and the meaning the materials and design forging.

> Resp: Bs 1 and 3;…when we were smelting and forging iron artifacts a lot used to happen beyond the physical we see in the productions. The stories we used to tell to each other, celebrations we used to make a group of smelters all used to cultivate our bondage and social capital and the practice.

The above statements Infuse storytelling elements into the design narrative, highlighting the historical, cultural, and symbolic meanings behind indigenous iron artifacts. This adds depth and context to contemporary adaptations, fostering a deeper connection with audiences_the aspect we miss when chose to substitute the indigenous iron with modern materials and methods

Indigenous designs are not only manifested in the unusual materials but also have been agents of art fusion what has expanded their relevancy in the contemporary space. Artistic Fusion has fostered malt purpose ideas by contemporary artists and designers to infuse indigenous ironwork with modern artistic expressions. This has been occasionally involve incorporating abstract motifs, geometric patterns, or incorporating other art forms like sculpture or painting into iron

artifacts. This has further led to customization; offering made-to-order designs that blend indigenous motifs with personal modern preferences such as commemorative sculptures, corporate installations, or public artworks.

## CONCLUSION AND RECOMMENDATIONS

The study findings suggest that although the Buganda kingdom has undergone significant changes due to globalization, leading to the transformation of indigenous spaces into modern ones, indigenous artifacts have remained significant for cultural practices, domestic use, and as sources of inspiration for new innovations. Indigenous designs of iron artifacts in the globalized space have continued to represent a fascinating intersection of traditional craftsmanship, cultural heritage, and modern artistic expression as subjects of endurance. These artifacts include tools, weapons, ornaments, and ceremonial objects made using indigenous ironworking techniques that have been passed down through generations. In contemporary contexts, indigenous iron designs are often valued not just for their functional or decorative purposes but also for their symbolic and cultural significance. They serve as a means of preserving and showcasing indigenous knowledge, history, and identity.

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## The Impact of Emotional Intelligence on Work Commitment among Millennials in Kenya's Telecommunication Sector

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### Abstract

Understanding the influence of employee personal characteristics on work outcomes like commitment is crucial for organizational success. Despite their significance, many organizations overlook personal employee factors such as emotional intelligence to their advantage. Furthermore, worldwide, millennials make up the largest generation of workers within the

telecommunications industry. This calls for investigation, especially into the personal factors impacting their work commitment. This study investigated the relationship between emotional intelligence and work commitment among millennial employees in Kenya's telecommunication sector. Employing a positivist research philosophy and a cross-sectional research design, the survey was conducted among 134 millennial employees aged between 23 and 43 years from international gateway operators, a segment of telecommunication companies licensed by the Communication Authority in Kenya. Participants completed an online survey measuring their emotional intelligence and work commitment. Using descriptive statistics, the respondents displayed above-average emotional intelligence and work commitment measures. In addition, the associations between emotional intelligence and work commitment were examined using correlational analysis. The findings of the study revealed a significant positive relationship between emotional intelligence and work commitment among millennial employees in Kenya's telecommunication sector $(r = 0.23, p = 0.045 < 0.05)$. This study contributes to understanding the drivers of work commitment among millennials and suggests implications for organizational practices and policy. The results of this study could contribute to understanding the determinants shaping policy considerations regarding work commitment among millennials. Furthermore, it offers valuable insights into strategies organizations could adopt to bolster employee commitment including emotional intelligence.

**Keywords**: *emotional intelligence, work commitment, organizational commitment, millennials, Telecommunications*

## INTRODUCTION

In today's rapidly changing and competitive global business environment, organizations increasingly recognize the importance of understanding and enhancing employee work commitment. In the telecommunications industry, work commitment is critical, given its dynamic nature and the need for engaged employees, many of whom belong to the millennial generation, to keep up with shifting customer needs and technological progress (Golenko, Ratford, Fitzgerald, Vecchio, Cartmel & Harris, 2020). The telecommunication sector is one of the fastest growing and most profitable sectors globally driven by increasing demand for communication services, advancements in technology, and the increasing reliance on communication networks. These trends have an immense impact on the telecommunication sector driving innovation, competition, market dynamics, and growth (Marzuki & Newell, 2021). Regionally, within the African continent, the telecommunication sector has experienced significant growth and transformation characterized by unique trends and dynamics such as youthful population, urbanization, and infrastructural developments (Abeka, Qamar, Alalaween, Bentaher, Al-Halaybeh, Al-Jundi & Tanash, 2022). Locally, the telecommunication sector in Kenya has played a pivotal role in driving economic development, connectivity, and

innovation. The high mobile penetration rates coupled with the adoption of smartphones and mobile money services through M-pesa had contributed greatly to the growth of the sector. (Communications Authority-Kenya, 2021; Gatobu & Maende, 2019; KNBS, 2023).

According to a resource-based perspective, the organization's internal resources can be used to provide the greatest competitive advantage, and its most valuable asset is its devoted and committed workforce, which is the only source of ongoing competitive advantage (Collins, 2021). The workforce is an organization's most vital strategic resource that aids in goal achievement among all its internal resources. The largest issue facing the industries, however, is finding and keeping employees who share the organization's beliefs and aims. Furthermore, in comparison to other generations, employees belonging to the millennial generation are seen as having a higher propensity to abandon their positions and are less dedicated to the organizations for which they work (Mappamiring, Akob & Putra, 2020). One of the key concerns for scholars and practitioners has been what constitutes an employee's commitment to a company. Several studies have looked for plausible reasons to increase employee commitment and established the many characteristics involved (Aziz et al., 2021; Megawati, Hamdat & Aida, 2022; Saputra & Mahaputra, 2022). One such characteristic, emotional intelligence, emerged at the end of the 19th century and was critical in forming a positive attitude toward work. It developed into an established area of study and became known as a variable that might account for variations in workers' behavior, attitudes, and performance at work. Higher emotional intelligence workers show the capacity to handle difficult circumstances at work and overcome obstacles without giving up (Alsughayir, 2021).

Emotional intelligence theory has undergone a lot of developments since its inception. This theory has its roots in the research of Thorndike (1920), who suggested that cognitive intelligence alone is not enough to explain human behavior. He proposed that social intelligence is one of the various types of intelligence that exist in humans. Gadner (1983), who invented the theory of multiple intelligences and published it in his book Multiple Intelligences, supported and advanced this viewpoint. According to Gardner's hypothesis, intelligence is influenced by a variety of traits, including social and emotional intelligence, in addition to cognitive aptitude. As a result, he presented the ideas of intrapersonal and interpersonal intelligence, which served as the basis for later EI models (Ferrero, Vadillo & Leon, 2021).

Later, Salovey and Mayer proposed the idea of emotional intelligence, which they defined as the capacity to recognize, comprehend, control, and successfully employ emotions as a tool to influence behavior and thought processes (Salovey & Mayer, 2012). In his publications Emotional Intelligence: *Why it Matters More than IQ and Working with Emotional Intelligence,* Goleman (1995) popularized the concept of emotional intelligence. In 2009, Bradberry and Greaves published *Emotional Intelligence 2.0*, a book that expanded on emotional intelligence theory and offered doable methods for enhancing emotional intelligence in a variety of contexts, including the workplace. Boyatzis added to the emotional intelligence hypothesis and made the connection between it and leadership. He emphasized that emotional intelligence is a critical tool for effective leadership. In addition, he developed coaching methods to help leaders enhance their emotional intelligence (Liu & Boyatzis, 2021). Later in 2004, Mckee collaborated with Boyatzis and Goleman in their work published in the book *Primal Leadership: Realizing the Power of Emotional Intelligence.* The work explored the impact of emotional intelligence on leadership effectiveness and organizational performance (Cahya & Ningsih, 2020).

There are many instruments used in the measurements of emotional intelligence. The instruments reported in the largest number of studies are Emotional Quotient Inventory (EQ-i), Schutte Self Report-Inventory (SSRI), Mayer-Salovey-Caruso Emotional Intelligence Test 2.0 (MSCEIT 2.0), Trait Meta-Mood Scale (TMMS), Wong and Law's Emotional Intelligence Scale (WLEIS), and Trait Emotional Intelligence Questionnaire (TEIQue). The Schutte Self-Report Emotional Intelligence Test (SSEIT) was used to measure the emotional intelligence of the millennials in the Kenyan telecommunication sector. The SSEIT measures general emotional intelligence with four factors: perceiving emotion, understanding emotion, facilitating emotion and managing emotion (Bru-Luna, Marti-Vilar, Merino-Soto, Cervera-Santiago, 2021).

On the other hand, the construct of commitment is central in Psychology and is defined as the ability and inclination to persist in a course of action (Irfan, Ali, Memon & Younis, 2021). Work commitment is the derivative of commitment in the work environment. Morrow (1993) described work commitment as complex and multifaceted construct that takes different forms. She suggested a generalization of five fundamental constructs of work commitment that constituted Morrow's work commitment model also called the universal forms of work commitment. The five constructs include protestant work ethic endorsement, job involvement, career commitment, job involvement, affective and continuance organizational commitment (Zhu, Kim, Milne & Park, 2021).

The first construct of the Morrow's model of work commitment - work ethic- was first postulated by Weber (1904), originally known as protestant work ethic. The values associated with work ethic include; autonomy, fairness, efficient utilization of time and intrinsic value of work (Christopher & Jones, 2004). The second construct of work commitment known as career/professional commitment refers to an individual's level of commitment to a specific career or profession rather than an organization. It could also be perceived as the individual's attitude towards one's profession or career. The third construct of work commitment is job involvement defined as the level at which an employee is engaged in his daily work. Job involvement is derived from the extent to which the job affects an individual's performance and self-esteem. The antecedents of job involvement are personal needs, work ethic, work environment and the job characteristics (Jyoti, Sharma, Kour & Kour, 2021).

Organizational commitment is the fourth construct of work commitment considered in the study. This is the psychological attachment an individual has to the entire organization. This attachment can be considered as a function of affective, continuance, or normative involvement. Affective commitment can be described as an individual's loyalty to an organization because he identifies with and believes in it. Continuance commitment refers to an individual's decision to stay in an establishment based on the investments one has accumulated by virtue of membership in the organization. Normative commitment, on the other hand, refers to an employee's loyalty due to a perceived obligation to remain with the organization (Ullah, Singh, Shah & Kakakhel, 2022). The study considered the affective and continuance organizational commitment since Morrow's model of work commitment excludes the normative organizational commitment.

The study aimed to evaluate the impact of emotional intelligence on work commitment among millennial employees, who make up the bulk of those employed in Kenya's telecommunications industry. The unit of analysis in the study was the millennial employees working in Kenya's telecommunication sector. Moreover, the study was on the work commitment of millennials that display different work characteristics from other generations. Millennials, also known as Generation Y, are individuals born between 1981 and 2000. There are some differences in their work attitudes compared to previous generations, such as the Baby Boomers born between 1946 -1964, Generation X born between 1965-1980 and generation Z born between 2001 and 2012 ( Rudolph, Rauvola, Costanza & Zache, 2021).

Statement of the Problem

The telecommunications sector in Kenya is witnessing a significant presence of millennials in its workforce (Safaricom PLC, 2019). However, there is limited understanding of the factors that influence the work commitment of millennials in this sector. In addition, despite the growing body of research on emotional intelligence and its effects on workplace outcomes, there is limited empirical evidence on the specific ways through which emotional intelligence impacts work commitment among millennial employees engaged in the Kenyan telecommunication sector. Prior research has shown a positive relationship between emotional intelligence and work commitment.

The study evaluated the effect of emotional intelligence on the work commitment of millennials in Kenya's telecommunication sector. By exploring the relationship between these variables, this research sought to provide a valuable perspective understanding of the factors that contribute to or hinder work commitment among millennials, ultimately aiding organizations in the development of strategies to enhance employee engagement and retention in the telecommunications industry. Although previous studies have explored the impact of emotional intelligence on work commitment, there is a dearth of research that specifically focuses on the unique context of the millennial generational cohort in Kenyan telecommunication sector. This contextual gap inhibits a comprehensive understanding of how these factors interact and contribute to work commitment among millennials in this industry. Exploring the theoretical underpinnings and understanding the complex interactions between these factors could enhance the overall understanding of work commitment among millennials in the telecommunication sector.

Moreover, reviewed studies reveal that the effect of emotional intelligence on work commitment has been studied on employees irrespective of their generational cohort. Selvi and Aiswarya (2023) researched to examine the relationship between emotional intelligence and work engagement of automobile sector workers in Chennai, South India. The results showed a strong correlation between work engagement and emotional intelligence. This study was conducted in the automobile sector and has did not consider the generational cohort of the employees (Selvi & Aiswarya, 2023). Nasir, Bamber, and Mahmood (2023) conducted a perceptual study to investigate the relationship between emotional intelligence and job performance among higher education sector employees in Saudi Arabia (Nasir, Bamber, and Mahmood, 2023). The research findings unearthed a correlation indicating a positive connection between faculties' four components of emotional intelligence. George, Okon, and Akaighe (2022) conducted a study on

the role of emotional intelligence and work engagement of public officers in Nigeria. The findings showed that emotional intelligence was positively related to work engagement (George, Okon and Akaighe, 2022). The study was conducted in the security field and the generational cohort of the participants was not considered.

Lastly, Baker, Jaaffar, Ibrahim, Hassan and Sallehuddin (2019) conducted a study to determine the effect of emotional intelligence on affective commitment among Royal Malaysia police officers. The findings of the research showed that emotional intelligence has a strong positive relationship with affective commitment. The study used non-probability sampling technique which could introduce bias and lack of representativeness of the sample ( Jaaffar, Ibrahim, Hassan and Sallehuddin, 2019).

## LITERATURE REVIEW

This section reviews the literature on the two variables of the study- emotional intelligence and work commitment. Various studies were reviewed and analyzed, and research gaps were identified that guided the current study. Baker, Shosha, Al-Oweidat & Nashwan (2023) researched on the influence of EI on organizational commitment among nurses engaged in government hospitals in Jordan. The study used a descriptive cross-sectional correlation design and a convenience sampling method with inclusion-exclusion criteria to select a total of $N = 200$ nurses. The results showed that the respondents had high levels of emotional intelligence and moderate levels of organizational commitment. Moreover, emotional intelligence was found to have a significant, moderately strong positive relationship with organizational commitment ($r = 0.53$, $p = 0.000 < 0.05$) ( Baker, Shosha, Al-Oweidat & Nashwan, 2023). The study used convenience sampling that could introduce bias to the findings.

Setiawan (2020) conducted a study on the effect of emotional intelligence on organizational commitment of health officers in in Southwest Sulawesi and Central Sulawesi provinces in Indonesia. The study employed cluster techniques and stratified random sampling based on the hospital type and level of health officers to have a heterogenous information about the characteristics of the health workers and achieve generalizability of the results. The study showed that there is a significant direct influence between emotional intelligence and organizational commitment as measured using knowledge sharing, team conflict and team

performance (Setiawan, 2020). This study was conducted in the medical field and the generational cohort was not considered.

Moreover, a study was conducted to examine the impact of emotional intelligence on work engagement of automobile sector employees in Chennai, South India. The descriptive cross-sectional study used random sampling to select 184 employees to participate in the research. The emotional intelligence scale (EIS) and Utrecht work engagement scale were used to assess emotional intelligence and work commitment respectively. The results showed a strong correlation between work engagement and emotional intelligence (Selvi & Aiswarya, 2023). This study was conducted in the automobile sector and did not incorporate moderators or mediators.

Nasir, Bamber, and Mahmood (2023) conducted a perceptual study to investigate the relationship between emotional intelligence and job performance among higher education sector employees in Saudi Arabia. The study used an exploratory research design method. Quantitative data was gathered from faculty members (n = 277) working in different higher education institutes in Saudi Arabia that were selected anonymously. The research findings revealed a positive relationship between the faculties' four components of emotional intelligence: self-emotions appraisal (SEA), others' emotions' appraisal (OEA), use of emotions (UOE) and regulation of emotions (ROE) and job performance (Nasir, Bamber and Mahmood, 2023).

Moreover, a study was conducted in Nigeria by George, Okon and Akaighe (2022) on the role of emotional intelligence and work engagement of public officers in Nigeria. The study drew on the cognitive -motivational-reactional theory of emotion and conservation of resources theory in exploring the serial explanatory pathways between emotional intelligence and work engagement. Data collected was analyzed through PROCESS macro with a bias-corrected bootstrapping method. The findings showed that emotional intelligence was positively related to work engagement (George, Okon and Akaighe., 2022). The study was conducted in the security field and the generational cohort of the participants was not considered.

Shafiq and Rana (2016) conducted a study to determine the relationship between emotional intelligence and organizational commitment of college teachers in Punjab colleges in Pakistan (Shafiq & Akram Rana, 2016). The descriptive survey utilized Schutter's emotions scale (EAS) and Allen and Mayer's organizational commitment scale to measure emotional intelligence and organizational commitment respectively. A sample size of N = 494 was selected for the study using the convenience sampling method. The findings revealed a significant positive relationship

between emotional intelligence and affective organizational commitment and a weak relationship between emotional intelligence and continuance commitment. The study did not consider the generational cohort of the participants in the analysis. There were no moderators to the relationship in the study which was considered in the current study.

Miao, Humphrey and Qian (2017) conducted a meta-analytical analysis of existing research involving 119 empirical quantitative studies selected randomly on the relationship between EI and work attitudes of employees. The study revealed that the emotional intelligence of the workers was positively and significantly correlated to their organizational commitment. The meta-analysis also compared how the three types -ability, trait (self-report) and mixed- of emotional intelligence correlated with the various job attributes (Miao, ChaoMiao, C., Humphrey, R. H., & Qian, 2017). The generational cohort was not considered in the study. Whereas moderators and mediators were used for job satisfaction in the meta-analysis, there was no moderator used for the relationship between EI and organizational commitment as is the case in the current study. The age of the employees was not considered either, which was a key consideration in the current study. Navas and Vijayakumar (2018) conducted a review of the impact of emotional intelligence on organizational commitment, job satisfaction, and job stress. The results showed that EI had a very good impact on organizational commitment which enhanced the employees' job satisfaction and hence good performance. In addition, the review corroborated with earlier studies that emotional intelligence has a significant positive correlation with the three components of organizational commitment which are pointed as effective, continuance and normative commitment (Sharfras, Navas & Vijayakumar, 2018).

Baker, Jaaffar, Ibrahim, Hassan and Sallehuddin (2019) conducted a study to determine the effect of emotional intelligence on affective commitment among Royal Malaysia police officers. The study used four dimensions of ability model of emotional intelligence – self-emotional appraisal, other's emotional appraisal, use of emotions, and regulation of emotions. A sample of 372 was obtained through non-probability sampling after a response rate of 40.2%. Wong and Law emotional intelligence scale (WLEIS) and Allen and Mayer's affective commitment scales were used to measure emotional intelligence and affective commitment of the police officers respectively. The results of the study showed that emotional intelligence has a strong positive relationship with affective commitment (Baker, Jaaffar, Ibrahim, Hassan & Sallehuddin, 2019). Since the study employed non-probability sampling technique, elements of bias and non-representativeness of the sample might have posed a challenge and generalizability could not be

guaranteed. The age of the respondents was not considered in the study. There was no moderator to the relationship between emotional intelligence and affective commitment. These factors were considered in the current study which was conducted in telecommunication sector which utilized SSEIT and Morrow's work commitment model to measure emotional intelligence and work commitment of the millennials respectively.

Njoku (2020) conducted a study on the link between emotional intelligence and perceived job stress as predictors of organizational commitment – a key component of work commitment- among fuel dispensers in Owerri, Nigeria. A sample of 200 participants was selected for the study using a simple random sampling technique. The results indicated that both emotional intelligence and perceived job stress are predictors of organizational commitment. Scutter's emotional intelligence test (SEIT) and organizational commitment scale (OCS) were used to assess the EI and organizational commitment of the participants respectively through self-reports. The age of the respondents was not considered in the study (Njoku, 2020).

Matheri, Karanja and Namusonge conducted a study to examine the impact of EI on employee commitment in Savings and Credit Cooperative Societies (SACCOs) in Kenya. A sample of 238 respondents was taken using stratified sampling and simple random sampling techniques. Emotional intelligence was measured using the Goleman's four factor model of self-awareness, self-management, social-awareness, and relationship management The findings showed that there exists a positive correlation between emotional intelligence and employee commitment that confirms the results in other studies (Matheri, Karanja & Namusonge, 2020).

Ahad, Mustafa, Mohamed, Abdullah & Nordin (2021) conducted a study on work attitudes, organizational commitment, and emotional intelligence of Malaysian vocational college teachers. A sample of 300 participants were involved in the investigation. The findings showed that positive work attitudes were positively correlated to emotional intelligence. In addition, the study revealed that relationship management is the most important element in creating optimal emotional intelligence out of the other three components: self-awareness, self-management, and social awareness (Ahad, Mustafa, Mohamed, Abdullah & Nordin, 2021).

## MATERIALS AND METHODS

The present study adopted cross sectional and descriptive-correlational design and utilized an online survey to collect data from millennials working in the International Gateway Operators (IGOs), a segment of Kenya's telecommunication sector. The statistical population of the study included all the millennials working in IGOs in Kenya. A sample of N=157 millennials was selected using random sampling technique. The research license was sought and obtained from the government and participants were expected to consent to participating in the study to proceed with the survey. A total of 157 online questionnaires were distributed to participants while 134 were received yielding to a response rate of 85.4%. The questionnaire comprised of Schutte Self-Report Emotional Intelligence Test (SSEIT), and Morrow's work commitment model to measure emotional intelligence and work commitment respectively. Prior to the actual data collection, the study instruments were piloted on 16 respondents, representing 10% of the sample total. The pilot study was carried out to assess the validity and reliability of the research instruments, refine data collection procedures, and gauge the practicability of the approach before the main study could be conducted. The content validity of the questionnaire was approved by the supervisors and the reliability was confirmed using Cronbach alpha coefficient with the values $\alpha = 0.97$, and $0.97$ on emotional intelligence and work commitment respectively showing that the instrument was reliable since it $\alpha > 0.7$. To analyze the data, descriptive tests, correlational and hypothesis tests were conducted for the study. The correlations between EI and work commitment were examined by Pearson's correlation coefficient and an analysis of variance using IBM SPSS software (version 24).

## RESULTS AND DISCUSSIONS

### Results

Descriptive statistics serve as a fundamental tool in data analysis, offering researchers a comprehensive overview of key attributes within a dataset. In this study, a total of 134 millennials were involved. The demographics of the respondents are represented in Table 1.

Table 4:Demographic Characteristics of the Study

| Category | Frequency | Percent |
|---|---|---|
| Age (Years) | | |
| 23 - 26 Years | 55 | 41 |
| 27 – 30 Years | 29 | 21 |

| | | |
|---|---|---|
| 31 – 34 Years | 22 | 16.4 |
| 35 – 38 Years | 10 | 7.5 |
| 39 – 43 Years | 18 | 13.4 |
| | | |
| **Education level** | | |
| Post-Secondary Certificate | 2 | 1.5 |
| Higher National Diploma | 8 | 6.0 |
| Bachelor's Degree | 100 | 74.6 |
| Postgraduate Diploma | 3 | 2.2 |
| Master's Degree | 18 | 13.4 |
| Doctorate or PhD | 2 | 1.5 |
| **Duration of employment** | | |
| 0-3 years | 86 | 64.2 |
| 4-6 years | 13 | 9.7 |
| 7- 9 Years | 14 | 10.4 |
| More than 9 years | 21 | 15.7 |
| **Employment Terms** | | |
| Permanent and Pensionable | 65 | 48.5 |
| Contract | 59 | 44.0 |
| Casual | 10 | 7.5 |

The age of most of the participants was between 23-26 years (41%) while the minority of the respondents age range was 35-38 years (7.5%). In terms of educational level, the majority held bachelor's degrees (74.6%) with 13.4% having master's degrees, 6% having higher national diploma certifications and a minority of 1.5% each with a post-secondary certificate and doctorate degrees respectively. The results also indicated that most of the respondents were relatively new employees in their establishments between 0-3 years (64.2%) with the lowest having been engaged for between 4-6years (9.7%). As far as the employment terms are concerned, majority of the employees were engaged on permanent and pensionable terms (48.5%) followed closely by those on contractual terms (44.0%) with a minority (7.5%) engaged on casual terms. The measures of emotional intelligence and work commitment as determined by the study are represented in Table 2.

Table 5: Scores of Emotional Intelligence, Job Demands-Resources and Work Commitment (N=134)

|  | Mean | Std. Deviation |
|---|---|---|
| Emotional Intelligence | 4.01 | 0.69 |
| Work Commitment | 3.27 | 0.82 |

The results from this research indicate that the mean EI score of the millennial employees was 4.01 and a standard deviation of 0.69 on a Likert scale of five levels showing an above average level of emotional intelligence of the participants. In addition, the work commitment of the respondents showed a mean of 3.27 and a standard deviation of 0.8204. The results of the Pearson's correlation coefficient also revealed that the age of the respondents is positively and weakly correlated with EI at r = 0.11 and negatively correlated with work commitment r = -0.12. In addition, academic qualifications of the respondents were weakly correlated with EI at r = 0.11 and negatively correlated with work commitment at r = -0.09.

Inferential statistics are the foundation of data analysis, enabling researchers to draw meaningful conclusions and make informed decisions based on sample data that extend to broader populations or phenomena. Inferential statistics also enable researchers to develop predictive models by identifying patterns and relationships in data. The correlations among the two variables according to the findings of the study are represented in Table 3.

Table 6: The Correlations Matrix

| Correlations | | Emotional Intelligence | Work Commitment |
|---|---|---|---|
| Emotional Intelligence | Pearson Correlation | 1 | 0.16 |
|  | Sig. (2-tailed) |  | 0.045 |
|  | N | 134 | 134 |
| Work Commitment | Pearson Correlation | 0.16 | 1 |
|  | Sig. (2-tailed) | 0.045 |  |

| | | | |
|---|---|---|---|
| N | | 134 | 134 |

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

Table 3 shows the relationship between emotional intelligence and work commitment of millennials in Kenya's telecommunication sector. Emotional intelligence has a positive and significant association with work commitment. With a correlation coefficient of $r = 0.160$ and $p < 0.05$, the research showed that individuals with higher levels of emotional intelligence also tend to demonstrate higher levels of work commitment, suggesting that emotional intelligence is a contributor to an individual's engagement and dedication to their work roles.

The hypothesis of the study was stated in the null form:

$H_0$: There is no significant relationship between emotional intelligence and work commitment of millennial employees in Kenya's telecommunication sector.

This hypothesis was tested using simple linear regression analysis with emotional intelligence as the independent variable and work commitment as the dependent variable. The results are presented in Table 4.

Table 4: The Effect of Emotional Intelligence on Work Commitment

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .160[a] | .026 | .018 | .622 | 2.167 |

ANOVA

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.341 | 1 | 1.341 | 3.471 | .045[b] |
| | Residual | 51.001 | 132 | .386 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Total | 52.343 | 133 | | | | |

**Coefficients**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 2.636 | .360 | | 7.315 | .000 |
| Emotional Intelligence | .166 | .089 | .160 | 1.863 | .045 |

Dependent Variable: Work Commitment

Table 4 shows the regression analysis for the effect of Emotional Intelligence (EI) on Work Commitment. The coefficient of determination (R-squared) for the model was 0.026, indicating that approximately 2.6% of the variance in work commitment is explained by emotional intelligence. The adjusted R-squared, which considers the number of predictors, was 0.018. The standard error of the estimate was 0.622, representing the average distance that the observed values fall from the regression line. The Durbin-Watson statistic was 2.167, which tests for the presence of autocorrelation in the residuals. A value close to 2 suggests no significant autocorrelation. The ANOVA table indicated that the regression model is statistically significant (p = 0.045), with an F-statistic of 3.471 and associated degrees of freedom (df) of 1 for regression and 132 for residual. The intercept coefficient of the model was 2.636 with a standard error of 0.360. The coefficient for EI was 0.166 with a standard error of 0.089. The model was statistically significant (p = 0.045) and had a standardized coefficient (Beta) of 0.160, indicating a small positive effect on work commitment. Overall, the model suggested that emotional intelligence has a statistically significant but small positive effect on work commitment, explaining about 2.6% of the variance in work commitment. Based on these results, the predictive model can be constituted as follows:

$Y = 2.636 + 0.166X_1 + \varepsilon$ where Y is work commitment, $X_1$ is the emotional intelligence and $\varepsilon$ is the error term.

### Discussion

The objective of the study was to establish the relationship between emotional intelligence and work commitment of millennial employees in Kenya's telecommunication sector. According to the findings, the mean EI score of the millennial workers was good and satisfactory, showing above average levels of emotional intelligence of the participants. The results of the study also showed that emotional intelligence has a significant relationship with the work commitment of millennials in Kenya's telecommunication sector.  These findings agree with researches by (Sarani, Mousavi, Salahi,  Abdar and Sheikhbardsin, 2020; Kaya, Senyura & Bodur, 2018) whose results showed that emotional intelligence is positively correlated to employee performance. The findings also agree with a study conducted by Baker, Shosha, Al-Oweidat & Nashwan (2023) to investigate the relationship between emotional intelligence and organizational commitment among nurses working in government hospitals in Jordan. Emotional intelligence was found to have a significant, moderately strong positive relationship with organizational commitment ( Abu Baker, Abu Shosha, Al-Oweidat, Nashwan, 2023).

The findings of the study also corroborated with the results of a study conducted by Setiawan (2020) on the effect of emotional intelligence on the organizational commitment of health officers in Indonesia. The study showed that there is a significant direct influence between emotional intelligence and organizational commitment as measured using knowledge sharing, team conflict and team performance (Setiawan, 2020). The study results agree with a study conducted to examine the relationship between emotional intelligence and work engagement of automobile sector employees in Chennai, South India. The results showed a strong correlation between work engagement and emotional intelligence (Selvi & Aiswarya, 2023).

The current study also agrees with another one conducted by Nasir, Bamber and Mahmood (2023) to investigate the relationship between emotional intelligence and job performance among higher education sector employees in Saudi Arabia. The research findings revealed a positive relationship between the faculties' four components of emotional intelligence: self-emotions appraisal (SEA), others' emotions' appraisal (OEA), use of emotions (UOE) and regulation of emotions (ROE) and job performance (Nasir, Bamber and Mahmood, 2023). Moreover, a study conducted in Nigeria by George, Okon and Akaighe (2022) on the role of emotional intelligence and work engagement of public officers in Nigeria. The findings showed that emotional intelligence was positively related to work engagement (George, Okon and Akaighe, 2022).

## CONCLUSIONS AND RECOMMENDATIONS

## Conclusion

The study's findings strongly supported the theoretical framework. The research investigated the impact of emotional intelligence on millennial work commitment in Kenya's telecommunication sector. Through a comprehensive analysis of survey data collected from millennial employees in this sector, several key insights have been established that contribute to both theoretical understanding and practical implications. The findings of the study provided a robust support for the hypothesized relationship. It was thus established that emotional intelligence is a significant predictor of millennial work commitment. This highlights the importance of individuals' ability to understand and regulate their own emotions as well as those of others in fostering commitment to their work roles. It is worth noting that emotional intelligence skills can be developed through training and practice.

## Recommendations

According to the results of the current study, millennial workers in Kenya's telecommunication industry have higher levels of work commitment when they possess emotional intelligence. The following suggestions are based on this research on the influence of emotional intelligence on millennials' work commitment in the telecommunications industry. First, organizations within the telecommunication sector should consider implementing training programs aimed at enhancing emotional intelligence skills among the staff since it is a learnable skill. This can improve employee engagement and work commitment.

Secondly, further research in this field would be necessary in the followings areas: A study may be conducted to investigate how the relationships between emotional intelligence and work commitment vary across the different generational cohorts within the telecommunication sector in Kenya. Secondly, studies may be conducted to extend research in other sectors within Kenya and beyond to examine the generalizability of findings beyond the telecommunication sector. In addition, longitudinal studies may be conducted to explore the long-term effects of emotional intelligence on work commitment on millennials. Moreover, studies may be conducted to examine the implications of technological advancements and remote work arrangements on employee well-being, emotional intelligence, and work commitment within the telecommunication sector.

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Recycling Textile Waste as material for Woven Art Practice

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## Abstract

Whereas the increasing population world over has multiplied production of textiles to satisfy both the clothing needs and fashion trends, waste generation in the textiles production cycle is an increasing environmental challenge. Production of textiles to satisfy the demand has led to generation of used textiles in the waste stream and in the landfill, greatly affecting the environment. Recycling of used textile into usable products is one way of reducing used textile in the waste stream. This study sought to establish the textile waste materials utilized for creative textile production by textile students at Kyambogo University. The study analyzed the process undertaken by students in preparing the materials for use and analyzing products made out of recycled textile waste materials. Using a descriptive design, the study observed projects and interviewed students of Bachelor of Vocational Studies in Education with Art and Design (BVAD) and Bachelor Art and Industrial Design (BAID) at the School of Art and Industrial Design, Kyambogo University. Findings revealed that commonly used textile waste material at Kyambogo University included old clothes especially cotton t-shirts, bedsheets and dresses collected from the immediate environment such as homes, friends, tailors and used yarn off-cuts picked from a nearby yarn spinning factory. The study worked with students to recycle and repurpose textile waste into functional household items hence reinforcing the concept of recycling as a viable alternative to reduce dumping of textile waste that leads to environmental pollution. The results revealed that recycling textile waste has a potential to produce household functional items that could improve livelihoods of families.

**Key Words:** *Textiles, Recycling, Textile waste, Creative textile production*

## INTRODUCTION

The Maslow's Pyramid of Human Needs, placed clothing among the physiological needs that are basic for sustaining human life (Trivedi, 2019). However, with introduction of the fast fashion phenomenon, clothing has since evolved from merely addressing a basic need into fashion items (Piribauer & Bartl, 2019). These fashions are characterized by production of cheaper clothes, which can be worn a few times and disposed of in favor of more trending ones, representing the trend of current society which is sensitive to fashion, rather than quality and physical life of products (Shim et al., 2018).

In fact, Morlet et al., (2017) note that more than half of fast fashions are disposed of in less than a year leading to lots of waste arising from unutilized textiles. For instance, Ellen Macarthur

Foundation has calculated that more than $500 billions of value is lost each year due to clothing underutilization and the lack of recycling, leading to a total amount of greenhouse gas emissions from textiles production of 1.2 billion metric tons annually (Whiting, 2019).

In the Western world, when consumers decide to give up their garments, they have a number of choices: discard, sell, or donate to used textile collectors such as charity organizations, municipalities, retail or professional collectors (Zamani, 2014). Developing countries on the other hand have insufficient capacity to produce textiles for their populations and are the major consumers of secondhand textiles in addition to new ones. Much as secondhand clothing trade is a booming business between the Global North and South, it comes with its own challenges (Naadi, 2021). Literature reveals that secondhand clothing trade is one way of transferring environmental, economic, and social consequences from the countries that produce textiles to those that consume them (Thompson, 2017). In Africa the biggest challenge with this trade has been importation of used textiles of depreciated value, unfit to be worn and handled as waste on arrival. In addition, a good amount of those textiles is none biodegradable, possessing chemical compounds (Zedepa, 2021) and taking hundreds of years to decompose fully when landfilled, negatively impacting on the environment.

Although the UN 2030 SDG goal twelve aims at achieving responsible consumption and production, the current clothing system in regards to manufacturing, distribution, and usage of clothing largely operates in a linear way (Chen et al., 2021) and application of the circular model remains unexplored (Watson et al., 2017). Therefore, encouraging industries, businesses and consumers to recycle and reduce waste is important, as well as supporting developing countries to move towards adopting sustainable patterns by 2030 (UNDP, 2022).

Research conducted by Ramos et al., (2017) suggest that textiles reuse and recycling has a positive contribution to the disposal of solid waste from industries and domestic waste, given their incorrect destination, commonly disposed in rivers, bays and landfills. Similarly, Tahmassian (2010) and Kayode (2006), cite that art is a powerful tool that can inform, people about issues and bring about change in behaviors and attitudes towards the environment and sustainability (Meade et al. 2008). It is from this context, that the study interrogates the use of textile waste as materials for creative textile production at Kyambogo University, School of Art and Industrial Design. It engages textile design students in recycling textile waste such as fibers, yarn off-cuts, worn out fabrics and fabric off-cuts to produce creatively woven products as part

of their course assignments.

## LITERATURE REVIEW

Mansour et al., (2018) define waste as any product or substance that has no further use or value for the person or organization that owns it and which is or will be discarded and is as a result of consumption (Kadoye 2006). Lithgrow & Wall (2019) observe that materials become garbage when previous assumptions of value and identity dissolve and the object is dismissed as part of everyday life.

Different types of waste emerge as a consequence of the technology boom, global population growth, coupled with consumerism (Pilchard et al., 2018). This creates challenges at every stage, including waste prevention, treatment/ management, recycling and reuse, as well as the health and ecosystem impacts of poorly managed waste (Evans 2018). While poor waste disposal may be a concern globally, it is more severe in developing countries and in majority of African cities (Aryampa et al., 2019). In Kampala city alone, an estimated 51% of the garbage is left un collected, causing frequent clogging of sewage systems (Turyatunga, 2021).

In the textile industry, over-production, partly driven by the idea behind the fashion industry that consumers need a new clothing collection for each season has been the major cause on waste generation (Zamani, 2014, Shim et al., 2018). There is a dramatic increase in the production of textiles (Peters et al., 2019) and mismatch in utilization (Ellen Macarthur Foundation, 2017) causing an overstretch on the natural resources and producing heaps of textiles waste. Morlet et al. (2017) observe that large amounts of non-renewable resources are extracted to produce clothes that are often used for a short period, after which the materials are largely lost to landfill or incineration. Textile waste is seen in post-industrial or pre-consumer waste, such as by-products of the fashion and textile industry such as fibers, fabrics, and overproduction (Wagner & Heinzel, 2020), and post-consumer waste, classified as any type of garment or household article made from manufactured textiles that the owner no longer needs and decides to discard (Hawley, 2019).

Countries such as China, Bangladesh and India, among others, are the major exporters of clothing products, mainly to developed countries of the European Union and the United States. These do not have to deal strongly with the environmental problems arising from industrial textile production, but with the problems related to the disposal of post-consumption (Ramos et

al., 2017). Unfortunately, since the capacity for developing countries, to produce enough clothing for their populations is insufficient, they become a dumping ground for the secondhand clothes from developed countries (Naadi, 2021) and the cheap fashions from China. The cycle of increased consumption, shortened lifecycles, and a shift to synthetic fibres, which do not decompose post-disposal, leading textile waste to emerged as a prominent issue (Thompson 2017).

To mitigate this issue, Pichardo (2018) recommends eco-design as an effective tool, that combines creativity, innovation and environmental objectives that replace virgin materials with waste textiles. Further research depicts that repurposing of garments through reconstruction or other secondary uses could save energy, water and carbon emissions as compared to fabric and garment production from 'virgin' materials (Eladwi et al., 2016; Hur, 2015, Ernantez et al. 2017). Similarly, contemporary artists argue that the life of an object does not effectively end when it is deemed no longer useful, but its reincarnation as a recycled material gains more expressive power as it is transformed into art (Schwartzott, 2019). Such artworks according to Pollanen and Routsalainen (2017) may not necessarily highlight an individual's capabilities but rather address important global and local issues. Art works could also drive income generation for the population and the local creative industry (Dissanayake et al. 2017). This study similarly is one of those that seeks to re-use textile waste in art production as an avenue to mitigate environmental degradation that may lead to climate change. In addition, Mansour (2018) posits that projects on wastes, progress the efficiency of training students, and generate collaboration between academia and production and help children to learn to make use of materials around them (Uyanik et al. 2011). Similarly, Yeboah (2015) recommends that waste materials should be explored and recycled by classroom teachers for effective teaching and learning of art and other subjects at the primary, junior and senior High schools. Owing to little research done on utilization of post-consumer waste for woven art practice, the paper investigated ways in which such waste was recycled by students at Kyambogo University, School of Art and Industrial Design, for art production.

## MATERIALS AND METHODS

The study is qualitative in nature, employing a descriptive research design, that seeks to describe the existing phenomena as accurately as possible (Atmowardoyo, 2018). It was conducted at Kyambogo University, School of Art and industrial design in the textile section in the Industrial and Commercial Design department. The target population for the study were textile design

students offering Bachelor of Vocational studies in Art and Design with Education (BVAD) and Bachelor of Art and Industrial Design (BAID) in second year of study. The total population comprised of forty (40) students, six participants were purposively selected because their projects explored textile waste. Data was obtained though observation, and structured interviews designed following the objectives of the research. The data obtained was coded, transcribed, analyzed thematically, backed by reviewed literature. Meaningful conclusions were drawn and recommendations generated. To ensure ethical conduct, consent was sought from respondents to participate in the study by explaining to them the voluntary basis of participation, for purposes of the research. A consent form was extended to all those who accepted to participate, encouraging them to conceal their identities. Details of the study such as the purpose and objectives were explained to participants and the liberty to withdraw from the study at any time if they wished was extended. Interviews were done on appointment, according to the participant's convenience and data kept confidential for the benefit of the research.

## RESULTS AND DISCUSSION

Findings revealed that the most commonly used textile waste material among the sampled population was old clothes inform of cotton t-shirts, bedsheets and dresses, majorly collected from their homes and from friends. Cloth offcuts were also picked from tailors while some respondents used yarn offcuts from a spinning factory. Although the respondents were aware that there is a pool of recyclable waste materials ranging from yarn rejects from factories, yarn off-cuts from weavers, shredded fabrics from tailors and garment factories, worn out clothes and other forms of fabrics for home use to those used in public spaces their choice of materials depended entirely on their convenience and accessibility to them moreover such materials were no longer deemed valuable to the owners, similarly did not require expenditure and are of little tangible value (Uyanik 2011).

The respondents prepared the materials locally by twisting them into required sizes of yarns for weaving crafts. That was mainly because they did not have suitable machinery such as a spinning wheel, that could quicken the process. The fabric offcuts were collected, cleaned, shredded to the required size, sorted and hand twisted or used without twisting. The preparation methods observed were suggested by Menéndez-Ramirez et al. (2010) and Pichardo, etal, (2018). Respondents further mentioned that sorting was arranged according to colour, texture, strength, stretchability, fibre content and the construction method.

Findings further revealed that about eighty percent of the respondents produced wall hangings (Figure b, c, e and f) out of the prepared textile waste materials, the others produced a rug (figure d) and a cosmetics organizer (figure a) respectively. Basing on their level of experience in weaving, most of the students used the basic weave structure (plain weave) in the tapestry form, which they could weave competently.



**Figure 2: Textile products made out of recycled materials by students. (images taken by researcher) a)** Cosmetics organiser produced using cotton t-shirt offcuts, **b)** Wall hanging produced using cloth off-cuts and acrylic yarn off-cuts, **c)** Wall hanging produced using cloth off-cuts,cotton yarn offcut and beads, **d)** Rug produced using cotton t-shirt offcuts, **e)**Wall hanging produced using cloth off-cuts from a dress, **f)** Wall hanging produced using cotton t-shirt offcuts.

## Discussion

**Recycled materials utilized by students for textile production at Kyambogo, University**

Findings revealed that commonly used textile waste include old clothes inform of cotton t-shirts, bedsheets and dresses. Therefore, rethinking about recycling waste materials such as the above creates fresh opportunities for an artist by providing a new material for self-expression in line with Ramos et al (2017), Schwartzott (2019) and Lithgrow and Wall (2019). Besides, all the participants engaged were young people who are considered to be fashion sensitive expected to be exploring fashions trends, and contributing to generation of more textile waste (Zamani 2014). As Morlet et al., (2017) notes, over-production in the textile industry is partly driven by the idea behind the fashion industry that consumers need a new clothing collection for each season, yet more than half of fast fashion produced is disposed of in under a period of one year.

## Processes undertaken to prepare the textile waste materials used by students at Kyambogo University.

The processes of weaving followed the standard measures practiced by weavers. Weaving was sequenced following the planned design. Students were going beyond the conventional materials such as yarns used in weaving to produce functional products. Using textile offcuts and textile waste was in line with Ramos et al (2017) who suggests that textile reuse can be done by industrial or artisan ways by reutilization of the fabric scraps. Textile waste can be up-cycled or /made into handicrafts in an infinity of objects that depend exclusively on the craftsman's abilities and creativity. Most of the respondents did their weaving on a frame loom as opposed to other looms because by the time of the interview, they had only acquired skills in plain weaving using a frame loom. Therefore, the choice of the tools and the simplicity of the projects was based on the level experiences. One of the respondents however explored a tree branch (fig. f) as the loom depicting the potential that natural materials have to supplement inadequate technology in textile construction.

## Textile products made out of recycled materials by students at Kyambogo University.

The products in Figure 2 (a-f) reveal that all forms of textile waste can be utilized to produce creative textiles but also contribute towards saving the environment from pollution, contamination and degradation (Pollanen & Routsalainen, 2017, Dissanayake et al. 2017 and Kayode 2006). Moreover, the products generated out of the waste materials assume new identities, independent of the material that was used to form it (Schwartzott (2019), Lithgrow and Wall, (2019).

From the interviews conducted, all respondents were aware of the environmental issues arising out of poor waste disposal and were convinced that their engagement into production of the woven articles was a measure to mitigate environmental degradation and create awareness about the practices that accelerate it. This study supports Pichardo (2018) that eco-design projects such as these are an effective tool, involving creativity and innovation, bearing environmental objectives.

## CONCLUSION AND RECOMMENDATIONS

### Conclusion

The study found out that students of textile design at Kyambogo University, School of Art and Industrial use textile waste to produce different products. The textile waste used included off-cuts and old textile which students use as yarns to produce woven items. The process of production of products followed the standard weaving procedures and most of the students were producing plain weave using a weaving frame loom. Items produced included wall hangings, item organizers and rugs. The study found out that the experience of using the unconventional materials in textile construction was exciting to many textile students. More so, the study findings revealed that the interest students had in using textile waste, was likely to reduce textile waste in the environment if students were to produce items using textile waste. Furthermore, results revealed that recycling textile waste has a potential to improve livelihoods of artists who use textile waste as a material hence improving wellbeing of households.

### Recommendations

The study recommends that; the textile industry should focus on finding sustainable solutions in textiles production and promote circular economy. Environmental conservation bodies in conjunction with the media should create awareness campaigns that continue educating the public about the danger of textile waste on the environment. Artists should continue to explore possibilities of recycling fabrics with a focus on examining textile properties so as to maximize them into artistic productions. Government and NGO programs that promote of women and youth can adopt this method to promote sustainable livelihoods amongst the populations.

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Enterprise Creation With Accumulated Capital By Pooling

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## Abstract

Models for the formation of an enterprise created through the accumulation of resources of a group of people over time are developed. Pooled funds collected every period is locked up in a safe asset until the needed capital necessary for the creation of the enterprise are realized. Mathematical models for the management of pooled funds are developed for a general case and some specific cases. The paper demonstrates that this approach is less expensive for the enterprise as opposed to investing pooled funds in the enterprise every time funds are collected. Illustrations done via pseudo-simulated data show that enterprise formation by resource pooling is a good and viable source of funding for small and medium enterprises.

**Keywords:** *acquisition period, crowdfunding, endorser, shadow amount, waiting period.*

## INTRODUCTION

Financing enterprises remain a daunting task especially for start-up enterprises as they are generally perceived as very risky by the financial and other lending institutions. Under a turbulent macroeconomic environment, sourcing finance from these institutions may not be the cheapest source of creating an enterprise especially for entrepreneurs who have limited resources to do this on their own. One way out is by resource pooling (also called crowdfunding) where a group of people who buys into the idea of the entrepreneur agree to contribute on a periodic basis in the creation of the enterprise, after which they become part owners of the enterprise. Crowdfunding is a form of fundraising whereby groups of people pool money, typically (very) small individual contributions, to support a particular goal (Ahlers et al., 2015). Five types of this mode of funding enterprises can be identified in the literature. The rewards-based, loan based, equity, charitable or donation based and real estate (Abdeldayem & Aldulaimi, 2021; Li et al., 2017). Compared to traditional funding channels, this mode of financing is more convenient for project creators to raise capital.

The challenges that confront enterprises, especially small and medium enterprises in their inability to access capital are well documented (Rajamani, et al., 2022; Madzimure, & Tau, 2021; Gamage et al., 2020; Nkwabi & Mboya, 2019; Ahinful, 2012). Crowdfunding circumvents these financing constraints by sourcing finance directly from the public by avoiding the banks, venture capitalists, microfinance institutions and other lending institutions.

Mathematical models for management of enterprises created through the pooling of large groups of people is scanty in literature. Among the earliest work on the development of models for the management of an enterprise through resource pooling is the work of Andoh and Quaye (2013). They developed models for the management of crowdfunded enterprises under a general case and some specific scenarios. By their models, funds are invested in the enterprise each time funds are collected until the enterprise becomes operational. Investing funds in bits can raise the building cost of an enterprise as opposed to ready funds which permits the purchase of needed materials for setting up the enterprise in bulk or at once. It also makes it difficult for the entrepreneur or managers of the fund to refund amounts to members of the pool that may change their minds, become disabled or even die and can no longer contribute to the process of the enterprise creation. In addition, their model permitted contributors to earn interest on their contributions each time contributions are made prior to the acquisition period that may pose a burden on the enterprise when it becomes operational that can be minimized. The constant rate of interest employed between the time of contribution until the enterprise become operational may not reflect macroeconomic conditions at the time especially under unstable market conditions. At the recouping stage, which is a long-time horizon, a constant rate of interest is deployed will obviously not reflect macroeconomic conditions at the time. The paper is also not explicit on the proportions of shareholdings after the contributions have been paid to promoters.

The objective of the study is to develop models for the management of an enterprise created by resource pooling where the pooled funds are locked up in a safe asset until the needed funds for the creation of the enterprise are realized for a general case and some specified cases. In addition, models for the management of the enterprise when the enterprise is operational are also developed that capture macroeconomic conditions in the life of the enterprise operation.

## LITERATURE REVIEW

### Conceptual review

A person who buys into the idea of the entrepreneur will be called an *endorser*, *promoter*, *contributor*, *investor*, *sponsor*, or a *participant*. An enterprise created through resource pooling, also called crowding, is the contribution of a financial amount to projects, products, or business ideas by a number of investors (Bouncken, Komorek, & Kraus, 2015). Crowdfunding sometimes called crowd-capital or crowd-financing can be seen as an

application of the concept of crowdsourcing, the outsourcing of problem-solving tasks to a distributed network of individuals (Gerber & Hui, 2013; Estellés-Arolas & González-Ladrón-De-Guevara, 2012). Five forms of crowdfunding can be identified. The loan based crowding funding reward endorsers for their contributions but there is the possibility that an endorser may not receive anything in return. The reward-based crowdfunding permit entrepreneurs to raise funds by giving endorsers something other than capital or stock as a means of compensation. For equity-based models, investors are compensated with stakes in the enterprise (Hossain & Oparaocha, 2017; Agrawal, Catalini & Goldfarb, 2015). Donation or charitable based crowdfunding allows endorsers to donate to charitable courses without getting anything in return (Hossain & Oparaocha, 2017; Agrawal, Catalini & Goldfarb, 2015). Finally, for real estate crowdfunding, assets of numerous financial backers are pooled and used to purchase a property or assets are loaned as an advance to engineers to fund a property improvement (Abdeldayem & Aldulaimi, 2021). The models developed mimic the equity-based model, but the source of financing should not necessarily be through online platforms. In addition, the contributions made are not necessarily made once but over time. The period between when the contributions start and the enterprise get established is called the acquisition period. The pooling arrangement is said to be *fully participatory* if every endorser contributes every time until the enterprise is established. If at least one endorser departs or joins the pooling arrangement late, the pooling arrangement is said to be *not fully participatory*.

An enterprise created by endorsers can be seen as a form of partnership, a voluntary association of two or more individuals for the purpose of conducting a business for profit as co-owners. Two basic types of partnerships can be identified: a general partnership and limited partnership. A general partnership is one in which each partner is actively involved in the management of the firm and is fully liable partnerships obligations. A limited partnership is one having at least one general partner and one or more limited partners who are not actively engaged in partnership management and who are liable for partnership obligations only to the extent of their investment in the partnership (Black, & Skipper, 2000).

## Theoretical review

Two theories can be identified to fit this study. The role congruity and stewardship theories. The role congruity theory suggests that the characteristics portrayed by the entrepreneur in a social network can motivate others to buy into the idea proposed by the entrepreneur. An individual is

often perceived as part of a social group based on surface-level characteristics, such as age, race, gender, or occupation. Individuals are assumed to embody characteristics linked to a social group, regardless of whether they possess the stereotyped characteristics (Harrison et al., 1998; Anglin, et al., 2022). Role congruity theory contends that conforming to these prescribed behavioral expectations drives others' evaluations (Eagly & Karau, 2002). In other words, people are more likely to buy in an idea so long as proponents of an idea are perceived to follow the norms of that social network. Thus, the good behaviour depicted by the entrepreneur in a social network will be a driver of pulling in endorsers to the pool. On the other hand, the stewardship theory stipulates that managers will act responsibly as stewards of the assets they control if left alone. This implies that managers, who are also stewards, will maximize the wealth of shareholders by carefully managing the resources entrusted to them. This theory has been reviewed by many researchers including Stiglitz (1975), Jensen and Meckling (1976), Mirrlees (1976), and Davis, Donaldson, and Schoorman (1997). Thus, the entrepreneur who is driving the idea of creating the enterprise will act responsibly with the contributions of the endorsers to ensure that their interest is maximized by ensuring that the enterprise come to fruition and properly managed after it becomes operational.

## Empirical review

Ekpe et al. (2017) conducted a study to examine the level of awareness of crowdfunding model and its effect on entrepreneurial intentions among Nigerian university lecturers. They collected data from 217 lecturers at three universities in north, east and west regions of Nigeria and employed descriptive statistics and partial least square methods to elicit entrepreneurial interest among staff members. They discovered that overall, the model has sufficient predictive power, showing that crowdfunding (social network and website characteristics) has significant positive influence on entrepreneurial intentions among academic staff of Nigerian universities. In addition, they found that crowdfunding could lead to entrepreneurial intentions without the influence of founder's characteristics.

The issue of creation and design of webpage to show crowdfunding backers' intention to fund a project in reward crowdfunding have been discussed in Wang and Yang (2019). They adopted the elaboration likelihood model as an overarching theory to explore two questions: the kind of information that affect backers' funding intentions and how individual characteristics affect backers' funding decisions. The model was tested with survey data from China. Their findings indicate that crowdfunding project attributes (e.g., product innovativeness and perceived

product quality) and creators' capabilities positively affect backers' funding intentions. Among others, their results showed that webpage visual design positively influences backers' funding intentions, but crowdfunding platform reputation does not.

In recent times, companies are adopting crowdfunding to finance more traditional products where they compete against other sellers of similar products. Miglo (2020) offers a model where two competing firms can use crowding prior to direct sales. Miglo (2020) considers a traditional framework where an entrepreneurial firm has monopoly power over its products or services.

Abdeldayem and Aldulaimi (2021) assess and evaluates crowdfunding in the Middle East and analyses the monetary requirements and the best-known ways in which middle eastern entrepreneurs raise funds. They also assessed whether crowdfunding can be viewed as an essential method for meeting the fundraising needs of entrepreneurs in the Middle East. The research sample consists of 1,910 respondents from the seven countries, namely Turkey, Egypt, Iraq, Saudi Arabia, Bahrain, Kuwait and United Arab Emirates. The respondents were investors, entrepreneurs and start-up operators. They developed a prediction model based on calculations and algorithms to forecast the success of crowdfunding projects in the Middle East and find that crowdfunding presence positively impacts fundraising success. Also crowdfunding platforms are considered an effective entrepreneurial finance tool for financing entrepreneurs in the middle east.

Mathematical models for the management of enterprises created through pooling arrangements is scanty in the literature, especially where the pooled funds are locked in safe asset before the enterprise is created. In most of works, the funds generated are not pulled over time which is a point of departure from this study. The closest is the work of Andoh and Quaye (2013) with deficiencies alluded to earlier for which this paper rectifies.

## MATERIALS AND METHODS

### Development of General models

Suppose a group of people $\kappa$ decide to contribute to a fund to create an enterprise at a price $T_f$ at the end of time $N$, the acquisition period. It should be noted that $T_f$ incorporate compensation for providing funds by the endorsers. Let the amount contributed to the fund at time $N' < N, T_f'$, be sufficient to create the enterprise. Suppose at time $j, j = 1, \ldots, N'$ each participant $i, i =$

$1, \ldots, \kappa$ contribute an amount $s_{f_{ij}}, i = 1, \ldots, \kappa; j = 1, \ldots, N'$. Then $\sum_{i=1}^{\kappa} s_{f_{i1}}$ will be collected at time 1 and suppose that this amount grows to $S_{F_{1N'}}$ at time $N'$. At time 2, $\sum_{i=1}^{\kappa} s_{f_{i2}}$ will be collected which would have accumulated to $S_{F_{2N'}}$ at time 2. Continuing in this fashion, at time $N'$, $\sum_{i=1}^{\kappa} s_{f_{iN'}}$ which will grow to $S_{F_{N'N'}}$. At $N'$ the value of the fund is $\sum_{j=1}^{N'} S_{F_{jN'}}$ which must coincide with $T'_f$, the amount needed to create the enterprise. Between the period $N'$ and $N$, endorsers must be compensated for the waiting period, the period between when the funds are available and when the enterprise is created. Let $r$ be the continuous rate of interest. Then the value of the contributions at time $N$ is $\sum_{j=1}^{N'} S_{F_{jN'}} (1+r)^n$ and this must coincide with $T_f$, the cost of the enterprise at time $N$ from the perspective of the endorsers. Thus

$$\sum_{j=1}^{N'} S_{F_{jN'}} (1+r)^n = T_f \tag{1}$$

where $n = N - N'$ from which we see that

$$N = N' + \log_{(1+r)} \left( \frac{T_f}{\sum_{j=1}^{N'} S_{F_{jN'}}} \right)$$

**Remark 1:** This formulation makes it easier for the managers of the fund to refund the contributions (though strongly discouraged) of members who might have changed their minds by time $N'$. Beyond this time, funds would have been deployed and endorsers are not ordinarily permitted to change their minds about withdrawal. In addition, it reduces the burden on the enterprise when the enterprise become operational: the enterprise only pay interest on contributions only for the period $n$, the waiting period for the enterprise to be established as opposed to paying interest each time contributions are made by endorsers.

In the general case, no restriction is placed on the time of entry to the pool until time $N'$. Beyond this time, the needed capital would have been realized and no new entrant would be accommodated. The proportion of each endorser $i$ stake at time $j$ is given by $\frac{s_{ij}}{S_{F_{jN'}}}, i = 1, \ldots, \kappa$

and proportion of each endorser $i$ stake at time $N'$ is given by

$$\frac{\sum_{j=1}^{N'} s_{ij}}{\sum_{j=1}^{N'} S_{F_{jN'}}}, i = 1, \ldots, \kappa$$

which remain the same under constant rate of interest by time $N$.

**Proposition 1:** For all $r \in (0,1]$ and $N, N' \in \mathbb{N}$ with $N' < N$,

$$\sum_{j=1}^{N-N'}(1+r)^j < \sum_{j=1}^{N}(1+r)^{N-j}$$

(2)

**Proof:** Let $S_1 = \sum_{j=1}^{N-N'}(1+r)^j$ and $S_2 = \sum_{j=1}^{N}(1+r)^{N-j}$ it suffices to show that $S_2 - S_1 > 0$. First observe that

$$S_2 = \sum_{j=1}^{N}(1+r)^{N-j} = \sum_{j=1}^{N}(1+r)^{j-1} = \sum_{j=1}^{N-N'}(1+r)^{j-1} + \sum_{j=N-N'+1}^{N}(1+r)^{j-1}$$

$$= \sum_{j=0}^{N-N'-1}(1+r)^j + \left[(1+r)^{N-N'+1} + \sum_{j=N-N'+1}^{N}(1+r)^{j-1}\right]$$

$$= 1 + \sum_{j=1}^{N-N'-1}(1+r)^j + (1+r)^{N-N'} + \sum_{j=N-N'}^{N}(1+r)^{j-1}$$

Now

$$S_1 = \sum_{j=1}^{N-N'}(1+r)^j = \sum_{j=1}^{N-N'-1}(1+r)^j + (1+r)^{N-N'}$$

and so $S_2 - S_1 = 1 + \sum_{j=N-N'}^{N}(1+r)^{j-1} > 0$ for all $r \in (0,1]$.

Note that LHS of (2) is the interest earned on the contributions up to when the enterprise becomes operational (i.e., the amount the endorsers are demanding on the enterprise for providing the capital for setting the enterprise up). On the other hand, the RHS of (2) of **Proposition 1** is the amount endorsers are demanding on the enterprise each time the contributions are made and are invested until the enterprise becomes operational. **Proposition 1** essentially emphasizes the point that it is less expensive for the enterprise to get the needed funds ready before setting the enterprise up. An enterprise can be regarded as a living organism providing life to other stakeholders whose life hinges on its survival. Consequently, decisions or efforts that go to reducing its burden is good not only for the survival of the enterprise but the endorsers whose sweat created the enterprise including other stakeholders whose lives depend on it.

**Remark 2:** It is expected that $n$ in equation (1) will be small (typically not exceeding a year) when the needed funds for establishing the enterprise are realized. In such as case, keeping a constant rate $r$ is reasonable. On the other hand, if $n$ is large (exceeds a year), it may be necessary to adjust the rate of interest to account for the prevailing macroeconomic conditions at the time. Let $r_m$, be the continuous rate of interest at time $m = 1, \ldots, n$. Then

$$\sum_{j=1}^{N\prime} S_{F_{jN\prime}} \left[ \prod_{m=1}^{n} (1 + r_m)^m \right] = T_f$$

(3)

which can be written

$$\sum_{m=1}^{n} m \log(1 + r_m) = \log \left( \frac{T_f}{\sum_{j=1}^{N\prime} S_{F_{jN\prime}}} \right).$$

**Remark 3:** In the case where interest rate changes every period, the same argument as in **Proposition 1** with $r$ replaced with $r_j$ shows that it is less expensive to the enterprise to have the funds ready before the creation of the enterprise.

One of the primary concerns for every endorser is how long it will take for the enterprise to be established, so they can recoup of their investments. To determine the waiting period in (3), the equation must be solved numerically. See for example, Brandimarte (2002), pps 111-117.

**Claim 1:** For all $n \in \mathbb{N}, r \in (0,1], r \prod_{j=1}^{n} j + 1 \leq \prod_{j=1}^{n} (jr + 1)$.

**Proof:** The proof will be accomplished by induction. Let $P(n)$ be

$$r \prod_{j=1}^{n} j + 1 \leq \prod_{j=1}^{n} (jr + 1).$$

$P(1): r \prod_{j=1}^{1} j + 1 \leq \prod_{j=1}^{1} (jr + 1)$. which is true as $1 + r \leq (1 + r)$ for all $0 < r \leq 1$.

$P(k): r \prod_{j=1}^{k} j + 1 \leq \prod_{j=1}^{k} (jr + 1)$ from which it follows that $r \prod_{j=1}^{k} j < \prod_{j=1}^{k} (jr + 1)$.

$P(k+1): r \prod_{j=1}^{k+1} j + 1 \leq \prod_{j=1}^{k+1} (jr + 1)$. Now it suffices to proof that $P(k)$ imply $P(k+1)$ and conclude that $P(n)$ is true for all $n \in \mathbb{N}$. From the LHS of $P(k+1)$,

$$r \prod_{j=1}^{k+1} j + 1 = r(1)(2) \cdots k(k+1) + 1$$

$$= \left[ r \prod_{j=1}^{k} j \right] (k+1) + 1$$

$$< \left[ r \prod_{j=1}^{k} (jr+1) \right] (k+1) + 1$$

By the implied $P(k)$. Thus

$$r \prod_{j=1}^{k+1} j + 1 \leq \prod_{j=1}^{k} (jr+1)\,(k+1)r + 1$$

$$\leq \prod_{j=1}^{k+1} (jr+1)$$

This is $P(k+1)$! $P(1)$ is true and $P(k)$ implies $P(k+1)$. Therefore, by induction $P(n)$ is true for all $n \in \mathbb{N}$.

**Proposition 2:** For all $0 < r \leq 1$,

$$\sum_{j=1}^{N'} S_{F_{jN'}} < \frac{1}{nr+1} \sum_{j=1}^{N'} S_{F_{jN'}} \left[ \prod_{m=1}^{n} (1+r)^m \right] < \sum_{j=1}^{N'} S_{F_{jN'}} \left[ \prod_{m=1}^{n} (1+r)^m \right] \qquad (4)$$

where $n = N - N'$.

**Proof:** Observe that from the Andoh's inequality, $nr \leq (1+r)^n - 1$, that we can write

$$jr + 1 \leq (1+r)^j$$

for all $j \in \mathbb{N}$. Hence $\prod_{j=1}^{n} (jr+1) \leq \prod_{j=1}^{n} (1+r)^j$. It follows by **Claim 1** that $r \prod_{j=1}^{n} j + 1 \leq \prod_{j=1}^{n} (1+r)^j$. Thus,

$$rn! + 1 \leq \prod_{j=1}^{n} (1+r)^j$$

Therefore,

$$1 \leq \frac{1}{rn!+1} \prod_{j=1}^{n} (1+r)^j < \frac{1}{rn+1} \prod_{j=1}^{n} (1+r)^j \qquad (5)$$

Because $0 < r \leq 1$ we can write $1 < rn + 1 \leq (n+1)$. Therefore

$$1 > \frac{1}{rn+1} \geq \frac{1}{n+1}.$$

From the inequality (5), we can write

$$1 < \frac{1}{rn+1}\prod_{j=1}^{n}(1+r)^j < \prod_{j=1}^{n}(1+r)^j$$

as $\frac{1}{rn+1} < 1$ and multiplying this last inequality through by $\sum_{j=1}^{N'} S_{F_{jN'}}$, gives

$$\sum_{j=1}^{N'} S_{F_{jN'}} < \frac{1}{nr+1}\sum_{j=1}^{N'} S_{F_{jN'}} [\prod_{m=1}^{n}(1+r)^m] < \sum_{j=1}^{N'} S_{F_{jN'}} [\prod_{m=1}^{n}(1+r)^m]$$

The quantity, $\frac{1}{nr+1}\sum_{j=1}^{N'} S_{F_{jN'}} [\prod_{m=1}^{n}(1+r)^m]$, in equation (4) do not offer full compounded amount in the waiting period. It offers a smaller amount accounting for the difficulty in creating and enterprise. Compare this result with Andoh and Quaye (2013), pp 51.

Now the expression

$$\frac{1}{nr+1}\sum_{j=1}^{N'} S_{F_{jN'}} [\prod_{m=1}^{n}(1+r)^m] - \sum_{j=1}^{N'} S_{F_{jN'}} = \frac{1}{nr+1}T_f - T_f'$$

give the shadow amount, the amount endorsers are demanding within the waiting period.

Note that delays in establishing the enterprise after time $N'$ reduces the shadow amount. Consequently, this could assist endorsers mount some pressure on the entrepreneur or the managers of the fund to ensure that any unnecessary delays on the part of the entrepreneur or managers of the fund is curtailed.

**Remark 4:** If interest rate changes every period,

$$\sum_{j=1}^{N'} S_{F_{jN'}} < \frac{1}{nr_m+1}\sum_{j=1}^{N'} S_{F_{jN'}} [\prod_{m=1}^{n}(1+r_m)^m] < \sum_{j=1}^{N'} S_{F_{jN'}} [\prod_{m=1}^{n}(1+r_m)^m].$$

**Note:** In computing the shadow amount, $\frac{1}{nr_m+1}T_f - T_f'$, in this case the most representative value (the mean, median) of $r_m$ can be used. Alternatively, it can be computed for all values of $r_m$ and the magnitude of the resulting vector used.

**Proposition 3:** For all $r_j \in (0,1]$, $T_f' < T_f \le 2^{\frac{1}{2}n(n+1)}T_f'$.

**Proof:** Because $0 < r \le 1$, we can write $1 < (1+r)^j \le 2^j, j = 1, \ldots, n$. Therefore,

$$\prod_{j=1}^{n} 1 < \prod_{j=1}^{n}(1+r)^j \le \prod_{j=1}^{n} 2^j$$

which can be written as $1 < \prod_{j=1}^{n}(1+r)^j \le 2^{\frac{1}{2}n(n+1)}$. Using this last inequality we can write

$$\underbrace{\sum_{j=1}^{N'} S_{F_{jN'}}}_{T_{f'}} < \underbrace{\sum_{j=1}^{N'} S_{F_{jN'}}\left[\prod_{j=1}^{n}(1+r)^j\right]}_{T_f} \le 2^{\frac{1}{2}n(n+1)} \underbrace{\sum_{j=1}^{N'} S_{F_{jN'}}}_{T_{f'}}$$

and so, the result follows.

This proposition places a cap on how much endorsers can demand on their investment. It is to check exploitation of the enterprise by promoters or endorsers. An enterprise can be thought of as a living organism on whose life other stakeholders depend. Therefore, any unnecessary demand by promoters can stifle the enterprise and render other stakeholders jobless. This proposition is there to check this from happening.

**Proposition 4:** For all $r \in (0,1]$, $n \in [(-1+\sqrt{1+4x})/2, \infty)$ where $x = 2^{\frac{log\left(\frac{T_f}{T'_f}\right)}{log2}}$

**Proof:** Observe from the upper bound of **Proposition 3** that $T_f \le 2^{\frac{1}{2}n(n+1)}T_f'$. Extracting $n$ from this inequality, we see that $n^2 + n - x \ge 0$, where $x = 2^{\frac{log\left(\frac{T_f}{T'_f}\right)}{log2}}$. Solving this inequality yields

$$n \le \frac{-1-\sqrt{1+4x}}{2}\text{or } n \ge \frac{-1+\sqrt{1+4x}}{2}.$$

Only the latter inequality is admissible and so the result follows.

**Proposition 4** provides the minimum waiting time on the entrepreneur or managers of the fund to get the enterprise established. Beyond this time point, endorsers should be expectant of coming to fruition of enterprise. It serves as a check on the entrepreneur or managers of the funds responsible for ensuring the enterprise materializes within a minimum time. The inequality also indicate that the enterprise may not come to fruition and so monitoring by endorsers may be necessary.

**Some Special cases**

**Proposition 5:** Let $r \in (0,1], n \in \mathbb{N}$. If every contribution grows to an amount $S_F$ for all $j = 1,$
$\ldots, N'$, then the total amount at the end of the acquisition period is $N'S_F(1+r)^n$ and investors
have to wait for $log_{(1+r)}\left(\frac{T_f}{T_{f'}}\right)$ for the enterprise to be established.

**Proof:** Observe that $\sum_{j=1}^{N'} S_{F_{jN'}} = \sum_{j=1}^{N'} S_F = N'S_F$ and so the total amount at the end of the
acquisition period is $N'S_F(1+r)^n$. Note that $T_f = N'S_F(1+r)^n$ and $T_f' = N'S_F$. Therefore,
$T_f = T_f'(1+r)^n$ and taking logs of both sides yields the required result.

**Proposition 6:** Let $S_{F_{jN'}} \in U[\alpha, \beta]$, $j = 1, \ldots, N'$. Then as $N' \to \infty$, $T_f' = N'\left(\frac{\alpha+\beta}{2}\right)$ and $n \in$
$[log_2(1+r) - 1, \infty), r \in (0,1]$.

**Proof:** The proof follows as in Andoh and Quaye (2013). For the second part, note that as

$$T_f' = N'\left(\frac{\alpha+\beta}{2}\right), T_f = N'\left(\frac{\alpha+\beta}{2}\right)(1+r)^n$$

and applying **Proposition 3**, yields

$$(1+r)^n \le 2^{\frac{1}{2}n(n+1)}$$

From which we see that $n \ge 2log_2(1+r) - 1$.

### Risk management matters

Leaving the arrangement within the waiting period is ordinarily not allowed. There might be
special cases where this might arise. If an endorser becomes temporally or totally disabled or
contract a fatal illness for which large medical expense will be needed. An endorser might even
die for which the next of kin may need funds to cater for the needs of growing children. In all
these cases, there will be the need to refund even within the waiting period and for that matter
the need to manage this risk by the remaining endorsers.

One way to manage the risk is for the remaining endorsers to split the cost of the refund in
proportion to their stake at time $N'$. Also, managers of the enterprise can look for a third party
who may purchase the interest of the endorser.

Key personnel insurance can also be purchased by the endorsers at time $N'$. Let $P_{im}$ be the premium paid at time $m = 1, \ldots, n$ by each endorser $i = 1, \ldots, \kappa$. Then the total premium paid by all endorsers at time $N$ to the insurer is given by

$$\sum_{i=1}^{\kappa}\sum_{m=1}^{n} P_{im}$$

Accounting for the time value of premium paid from the endorsers' perspective,

$$\sum_{i=1}^{\kappa}\sum_{m=1}^{n} P_{im}(1+r)^n$$

would have been injected by the endorsers. Adding this to equation (1) give

$$\sum_{j=1}^{N'} S_{F_{jN'}}(1+r)^n + \sum_{i=1}^{\kappa}\sum_{m=1}^{n} P_{im}(1+r)^n$$

which is the cost of the enterprise at the acquisition period $N$. If the interest rate varies within the period, the cost of the enterprise at the acquisition period is

$$\sum_{j=1}^{N'} S_{F_{jN'}}\left[\prod_{m=1}^{n}(1+r_m)^m\right] + \sum_{i=1}^{\kappa}\sum_{m=1}^{n} P_{im}\left[\prod_{m=1}^{n}(1+r_m)^m\right]$$

Alternatively, the endorsers can agree to create a premium account at time $j = 1, \ldots, N'$ to cater for the cost of insurance. Let each endorser contribute an amount $p_{ij}, i = 1, \ldots, \kappa; j = 1, \ldots, N'$ to the premium account. Then $\sum_{i=1}^{\kappa} p_{i1}$ will be collected at time 1 and let this amount grow to that grow to $\tilde{P}_{1N'}$ at time $N'$. Also, $\sum_{i=1}^{\kappa} p_{i2}$ will have grown to $\tilde{P}_{2N'}$. Continuing in this manner, $\sum_{j=1}^{N'} \tilde{P}_{jN'}$ be available in the premium account at time $N'$. The total cost of the enterprise from the endorser's perspective will be

$$\sum_{j=1}^{N'} S_{F_{jN'}}(1+r)^n + \sum_{j=1}^{N'} \tilde{P}_{jN'}(1+r)^n$$

under constant rate of interest or

$$\sum_{j=1}^{N'} S_{F_{jN'}} \left[ \prod_{m=1}^{n} (1 + r_m)^m \right] + \sum_{j=1}^{N'} \tilde{P}_{jN'} \left[ \prod_{m=1}^{n} (1 + r_m)^m \right]$$

if interest rate varies.

**Remark 5:** Because funds are saved in a premium account it makes it easy to refund the contributions of endorsers who may have changed their minds before time $N'$.

### Recouping contributions of promoters or endorsers

In this section, mathematical models for the management of the enterprise that have been created to ensure sustainability and payback of the promoters will be developed. Let $P_{f_i}$ be the profit function of the enterprise operations for period $i, i = 1, \ldots, M, M \in \mathbb{N}$. Then

$$P_{f_i} = t_{r_i} - t_{c_i}$$

where $t_{r_i}$ and $t_{c_i}$ are the total revenue and total cost of operations for each period $i$. $P_{f_i}$ can be written as

$$P_{f_i} = t_{r_i} - \left[ t_f + v_{c_i} + T_f \omega_i (1 + r_i)^i \right], i = 1, \ldots, M \tag{5}$$

where $0 < \omega_i \le 1, \sum_{i=1}^{n} \omega_i = 1$, $t_f$ and $v_c$ are respectively the fixed and variable cost of operations for each period. $r_i$ is the interest rate for each period. Because $M$ is typically large, it is unrealistic to keep the interest rate as constant. This contrasts with Andoh and Quaye (2013) who permitted the interest rate to be constant within the payback period. The expression $T_f \omega_i (1 + r_i)^i$ is the strain on the enterprise for period $i$, the amount that belongs to the endorsers for each period. For sustainability of the operations of the enterprise,

$$t_{r_i} > \left[ t_f + v_{c_i} + T_f \omega_i (1 + r_i)^i \right]$$

and if $t_{r_i}$ is obtained by selling a certain number of products $n_p$ at a price $s_p$ then

$$n_p > \frac{t_f + v_{c_i} + T_f \omega_i (1 + r_i)^i}{s_p}$$

Here, the enterprise is assumed to be in the production of goods and/or services where the price is fixed by the market. On the other hand, if $n_p$ is held constant, then the interest is to determine the price $s_p$ for sustainability. In this case,

## RESULTS AND DISCUSSION

The interest rates used for the analysis are the 91-day treasury rates obtained from Bank of Ghana for the period January 2017 to December 2021 totaling 60 data points. 48 of these data points (from January 2017 to December 2020) will be used to estimate the values of $S_{F_{jN'}}, j = 1, \ldots, 48$ at time $N' = 48$. The remaining 12 data points will be used to estimate the cost to the enterprise by the endorsers for providing the required funding. The 91-day treasury rates for 2022 was excluded from the analysis due to the domestic debt exchange programme the Government of Ghana was instituting on domestic bondholders resulting in high treasury rates especially in the last half of 2022. Investors were shying away from investment in bonds and given that the government was struggling to obtain money, it turned its attention to the treasury market forcing the rates up. Thus, the rates reported are not the norm and will swell up the cost of the enterprise.

Suppose that $T_f' = 3,000,000$, $\kappa = 50$ people, $N' = 48$ months, $N = 60$ months so that $n = 12$ months. Let $s_{f_{ij}} \in |N(1000, 500^2)|, i = 1, 2, \ldots, 50; j = 1, \ldots, 48$ of size 50 by 48 be generated and assume that these cumulative monthly contributions are invested in 91-day treasury bills for 48 months. Investment in treasury bills are risk free and so endorsers are certain of the funds and its interest. From the simulated data $s_{f_{ij}}$ lies in $[1.12, 2789.20]$ and assume that these amounts are in Ghana cedis, the currency of the Republic of Ghana. The lower plot of Figure 1 (the solid line) shows the cumulative monthly contributions whereas the upper plot (dashed line) shows the growth amounts $S_{F_{jN'}}, j = 1, \ldots, 48$ at the end of 48-month period.
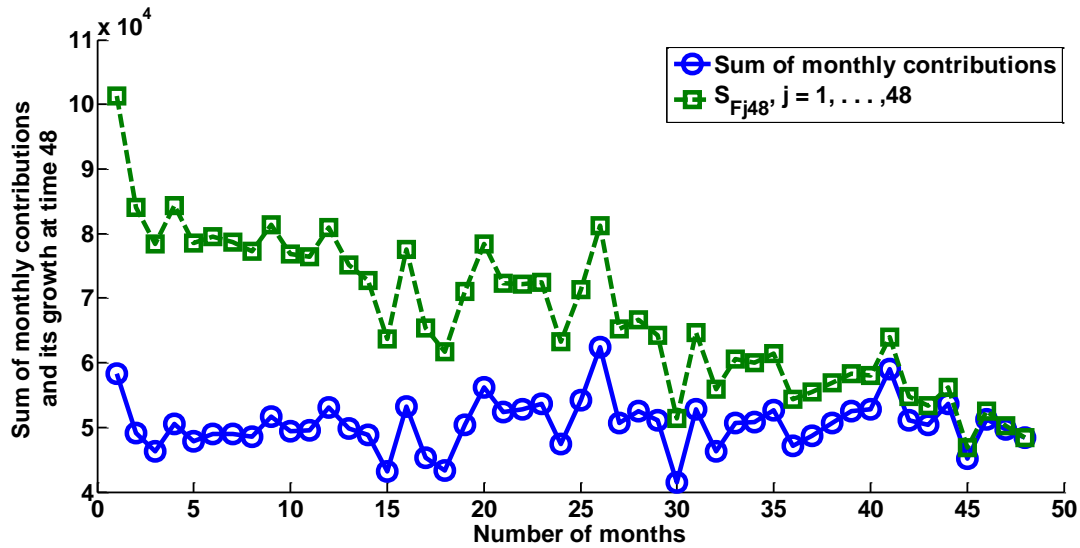
Figure 1: Contributions (solid circled line) versus growth of contributions at month 48 (dashed squared line)

The total contributions by the 50 endorsers at the end of the 48 months is $\sum_{i=1}^{50}\sum_{j=1}^{48} s_{f_{ij}} = 2.404 \times 10^6$ will have grown to the to an amount $\sum_{j=1}^{48} S_{F_{j48}} = 3.215 \times 10^6 = T_f'$. The difference $8.11 \times 10^5$ is the savings to the enterprise. Now from equation (3), and using the remaining 12 data points give

$$\sum_{j=1}^{48} S_{F_{jN'}} \left[ \prod_{m=1}^{12} (1 + r_m)^m \right] = 4.1157 \times 10^7 = T_f.$$

The cost to the enterprise prior to commencement of operations is $4.1157 \times 10^7$ which would have been at least $(4.1157 \times 10^7 + 8.11 \times 10^5)$ should the investment in the enterprise been done each time funds are collected.

Now let us investigate the growth in individual contributions made over the 48 months for the 50 endorsers at the end of 48 and 60 months. Figure 2 demonstrates the power of resource pooling. At time 48 when no more contributions will be made, each endorser investment will have growth to 1.34 times their initial investment. Within 12 months when no contributions were made and the amount invested together, the individual initial investment would have growth nearly to 17-fold. This shows the power of resource pooling of a large group of people.
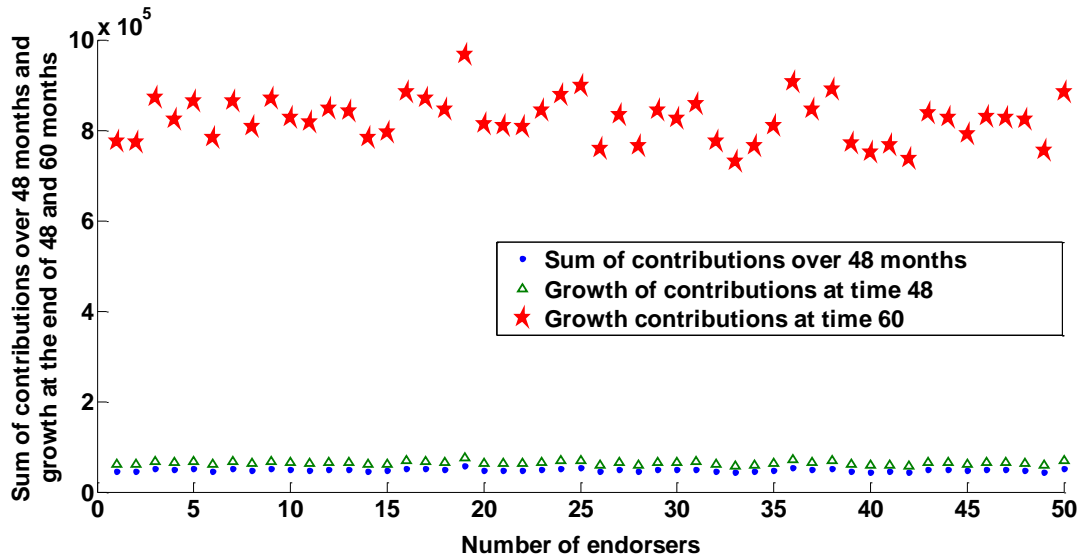
Figure 2: Sum of contributions over 48 months (•), growth of contributions at time 48 (Δ) and growth of contribution at time 60 (*).

How will increasing the number of endorsers have on the fund accumulated at time 48 and at time 60? Do the increasing numbers of endorsers affect the quantum of individual investments at time 48 and at time 60? As can be seen from the table 2, both the values of $T_f'$ and $T_f$ increases with increasing number of endorsers, the value of $T_f$ rises much faster. Observe also that the number of times the individual investment grows at both times 48 and 60 are largely unaffected with increasing number of endorsers.

Table 2: Total contributions of endorsers, value of $T_f'$, value of $T_f$, the number of times individual grows at time 48 and the number of times individual investment grow at time 60.

| Number of endorsers | Total contributions of endorsers at time 48 $(\times 10^7)$ | Value of $T_f'$ at time 48 $(\times 10^7)$ | Value of $T_f$ at time 60 $(\times 10^8)$ | Number of times individual investment grow at time 48 | Number of times individual investment grow at time 60 |
|---|---|---|---|---|---|
| 25 | 0.1219 | 0.1623 | 0.2064 | 1.3306 | 16.9285 |
| 50 | 0.2404 | 0.3215 | 0.4116 | 1.3373 | 17.0130 |
| 75 | 0.3654 | 0.4879 | 0.6207 | 1.3353 | 16.9879 |

| | | | | |
|---|---|---|---|---|
| 100 | 0.4817 | 0.6428 | 0.8178 | 1.3345 | 16.9775 |
| 125 | 0.6069 | 0.8093 | 1.0296 | 1.3334 | 16.9637 |
| 150 | 0.7194 | 0.9614 | 1.2231 | 1.3364 | 17.0020 |
| 175 | 0.8468 | 1.1321 | 1.4402 | 1.3369 | 17.0080 |
| 200 | 0.9644 | 1.2891 | 1.6400 | 1.3366 | 17.0049 |
| 225 | 1.0899 | 1.4567 | 1.8532 | 1.3365 | 17.0030 |
| 250 | 1.2067 | 1.6096 | 2.0477 | 1.3338 | 16.9689 |
| 275 | 1.3285 | 1.7727 | 2.2552 | 1.3343 | 16.9754 |
| 300 | 1.4522 | 1.9396 | 2.4675 | 1.3356 | 16.9921 |
| 325 | 1.5796 | 2.1110 | 2.6856 | 1.3364 | 17.0021 |
| 350 | 1.6883 | 2.2580 | 2.8727 | 1.3374 | 17.0150 |
| 375 | 1.8120 | 2.4192 | 3.0777 | 1.3350 | 16.9845 |
| 400 | 1.9426 | 2.5947 | 3.3010 | 1.3357 | 16.9926 |
| 425 | 2.0694 | 2.7615 | 3.5132 | 1.3345 | 16.9771 |
| 450 | 2.1752 | 2.9060 | 3.6971 | 1.3360 | 16.9967 |
| 475 | 2.2951 | 3.0648 | 3.8990 | 1.3353 | 16.9883 |
| 500 | 2.4240 | 3.2369 | 4.1180 | 1.3353 | 16.9882 |

Figure 3 shows the total contributions (solid line), the growths at times 48 (dashed line) and 60 (dotted line) and the shadow amount (dash-dot line). The wide variation between the growth at time 48 and 60 can clearly be seen from the plot.
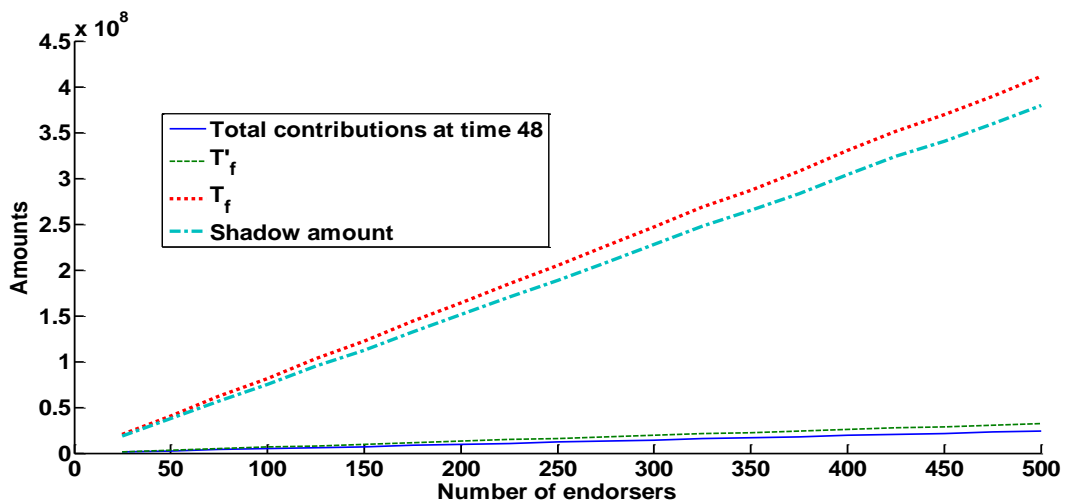
Figure 3: Total contributions of endorsers (solid line), value of $T_f{}'$ (dashed line), value of $T_f$ (dotted line) and the shadow amount (dash-dot line).

Now suppose that $T_f{}'$ is sufficient to set up a Science High School with operating expenses depicted in table 3. The viability of such a venture using the models discussed in section 4 will be assessed using a hypothetical interest rate uniformly distributed in the interval [0.05, 0.07]. Such an enterprise is generally set up to live in perpetuity and so $M$ is chosen as 100.

Table 3: Cost structure of setting up the school[1].

| Cost type | Components | Amount ($) |
|---|---|---|
| Fixed cost ($t_f$) | Teaching staff | 150,000 |
| | Administrative staff | 75,000 |
| | Security staff | 9,000 |
| | Social Security | 28,125 |
| | Insurance | 60,000 |
| | Totals | 322,125 |
| Variable cost ($v_c$) | | |
| *Specific expenses* | Admission expenses | 4000 |
| | Information pack | 10000 |
| | Feeding cost | 50400 |
| *General expenses* | Utilities | 25000 |
| | Vehicle running expenses | 30,000 |
| | Maintenance/breakages | 4500 |
| | Miscellaneous | 25000 |
| | Subtotal | 84500 |
| $T_f$ | Value of endorsers contribution at the end of acquisition period | $\dfrac{4.1157 \times 10^7}{12}$ |
| | Totals | $3.43 \times 10^6$ |

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[1] At the time of the computations 1USD $\cong GHS$12.

Typically, the fixed cost is the cost of paying teachers, administrative staff, security personnel, social security payments for staff and insurance cost. Workers' salaries typically do not change within a year but may alter from year to year depending on the macroeconomic conditions. The variable cost will be separated into two parts: specific expenses and general expenses. The specific expenses are those variable costs that vary directly as the number of students enrolled in the school. These include the cost of feeding students, admission expenses and information pack expenses (cost of printing brochures, flyers, radio ads, etc). The general expenses on the other hand, are those variable costs incurred in the running of the school. These costs include utilities, maintenance costs and vehicle running costs. Other general expenses such as refreshment for meetings, stationery, generator running cost, cleaning cost, subscriptions, and teaching aids will be bundled together as miscellaneous expenses.

Denote the feeding expenses, admission expenses and information pack expenses for year $i$ respectively by $FE_i$, $AE_i$ and $IPE_i$. They are given by

$$FE_i = k_1 n_i, AE_i = k_2 n_i \text{ and } IPE_i = k_3 n_i$$

where $k_1$, $k_2$ and $k_3$ are constants representing the cost per student for feeding, admissions, and information pack expenses and $n_i$ is the number of students for year $i$. Thus, the variable cost become

$$v_{c_i} = v_{c_i}^{se} + v_{c_i}^{ge}$$

where $v_{c_i}^{se}$ is the specific expenses component of the variable cost and $v_{c_i}^{ge}$ is the general expenses component of the variable cost.

Thus, equation (5) becomes

$$P_{f_i} = t_{r_i} - \left[ t_f + v_{c_i}^{se} + v_{c_i}^{ge} + T_f \omega_i (1 + r_i)^i \right], i = 1, \ldots, 100 \qquad (6)$$

$P_{f_i}$ will be investigated for moderate student numbers 120, 240, 360, 360, …, 360 enrolled using student fees of 3600 per year. It should be noted that

$$v_{c_i} = v_{c_i}^{se} + v_{c_i}^{ge} = \frac{100}{3} n_i + \frac{250}{3} n_i + 420 n_i + 84500 \qquad (7)$$

where the constants $k_1$, $k_2$ and $k_3$ were obtained using the year 1 student numbers depicted on table A1 at the appendix and the specific and general expenses values indicated in table 3. Inserting (7) into (6) and the values in table 3, gives

$$P_{f_i} = 3600n_i - \left[322125 + \frac{100}{3}n_i + \frac{250}{3}n_i + 420n_i + 84500 + 3.43 \times 10^6 \times \omega_i(1 + r_i)^i, i \right.$$
$$\left. = 1, \ \ldots, 100 \right]$$

which reduces to

$$P_{f_i} = 3063.33n_i - 406625 - 3.43 \times 10^6 \times \omega_i(1 + r_i)^i, i = 1, \ \ldots, 100.$$



Figure 4: Profits (°) of the school over 100 years and the break-even line (solid line).

Within the 100-year period, the school will make losses in 9 of the years. Generally, it appears from the plot that it is a good venture for endorsers as they will be making significant gains. Aside the strain they receive each year (see upper plot of figure 5), they are also entitled to a portion of the yearly profit. The weights applied to the $T_f$ is shown in the lower plot of figure 4.

Figure 5: Upper plot: periodic payment to endorsers (strain).

Lower plot: weights applied to $T_f$.

How should the losses be minimized? One way is the application of **Proposition 2**. From RHS of **Proposition 2** (inequality (4)), and using the remaining 12 data points with $r_m = 0.06$ give

$$\frac{2}{nr_m + 1} \sum_{j=1}^{48} S_{F_{jN'}} \left[ \prod_{m=1}^{12} (1 + r_m)^m \right] = \frac{1}{12r_m + 1} T_f = 2.3928 \times 10^7$$

Inserting this value in place of $4.1157 \times 10^7$ in table 3 results in the profitability indicated in the figure 6 below.

Figure 6: Profits of the school over 100 years with break-even line. The $T_f$ was computed using proposition 2.
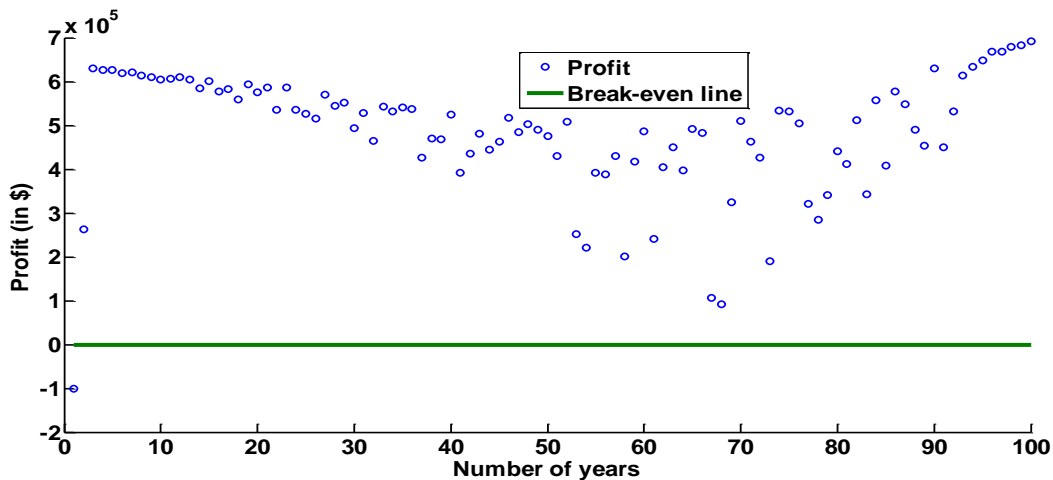
It can be observed from figure 6 that except for the first year where the enterprise incurred a loss, there was profit for all the years.
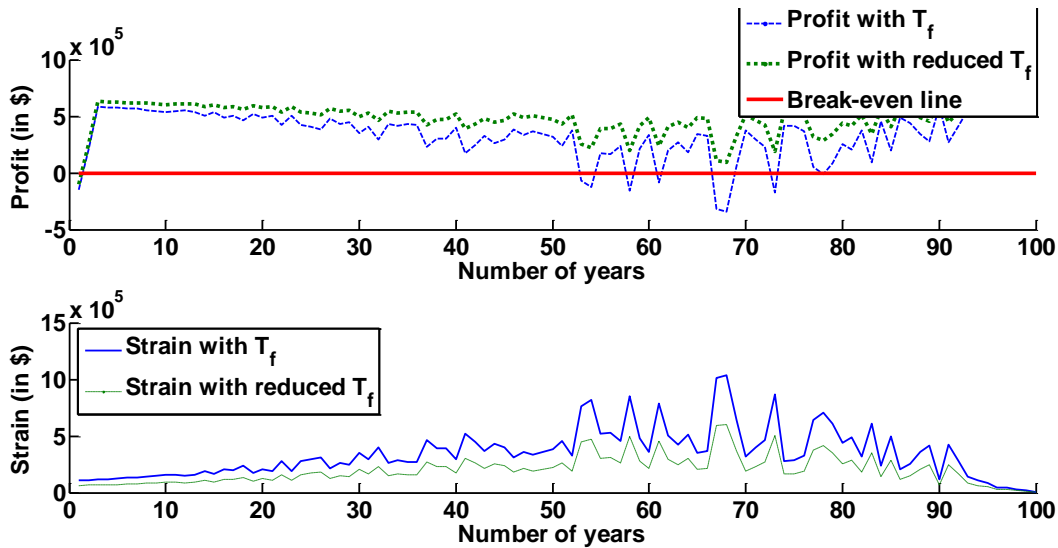


Figure 7: Upper plot: Profit with $T_f$ (dashed line) and with reduced $T_f$ (dotted line) and the break-even line (solid line). Lower plot: Strain with both $T_f$ (solid line) and reduced $T_f$ (dashed line).

 Clearly from figure 7, there is reduction in the amount due endorsers with the application of **Proposition 2.** On the other hand, the profits are higher with **Proposition 2** indicating a transfer of wealth from the strain to the profits. This allows the wealth to be spread out to all stakeholders intead of merely concentrating on the endorsers.

## CONCLUSION AND RECOMMENDATIONS

It has been demonstrated mathematically and through pseudo-simulated data that investing a stream of contributions from a large group of people over time in a safe asset until the needed funds required to set up an enterprise is less expensive to the enterprise as opposed to investing funds in the enterprise each time the funds are collected. Through the pseudo-simulated data, the power of resource pooling over time to fund the enterprises can be seen. The possibility of loss is minimized when endorsers are not offered the full compounded amount during the waiting period. For contributions made over the same time, the number of times individual

contributions grow at the end of the acquisition period remains approximately the same irrespective of the number of people in the pool.

The models are good decision tools for the management of enterprises created through resource pooling. The models permit endorsers to determine their stake in the enterprise during the acquisition period and after the enterprise has been created and is operational. It also provides endorsers with a sense of the time frame for enterprise to be operational for recouping of funds to start. This knowledge by endorsers puts managers of the fund on the edge to ensure the creation of the enterprise comes to fruition.

Aside individuals who can team-up to create enterprises for the growing number of university graduates, organizations, companies can team up to create enterprises free from borrowing from lending institutions. Afterall, the funds available to most of these lending institutions emanate from individuals, enterprises, and companies themselves. There are many Church leaders and Moslem clerics who command large crowds for which entrepreneurs can approach with their brilliant ideas to sell to its members for the pooling of resources overtime. To achieve these several things are needed. One is credible entrepreneurs in the eyes of the public or social networks, the regulations that governs this mode of funding to protect the public are needed and the commitment on the part of the entrepreneur or managers of the fund to ensure the operationalization of the enterprise entrusted in their care. Finally, the patience on the part of contributors to allow the funds to grow in a safe asset and the willingness of entrepreneurs to trade sole ownership for joint ownership.

Obtaining real life data to fit exactly the description of this mode of enterprise was the main challenge with the study. Consequently, pseudo-simulated data which combines real life data was deployed in addition to carefully chosen hypothetical data that reflect the operations of private Senior High in Ghana. This opens a direction for further research, namely the quest for an enterprise whose formation fits model descriptions and how the models will perform under these circumstances. The study did not explore the effects of higher interest rate on the profitability beyond the band [0.05, 0.07] that were used for the analysis. In addition, reduction in fees beyond $3600 per year has also not been explored.

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## Relationship between Staff Competencies and Graduates Employability in Technical and Vocational Education and Training Institutions: A Case of Nyandarua County, Kenya.

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## Abstract

While the main goal for Technical and Vocational Education and Training (TVET) institutions is to prepare young people for work, industries have continued to express dissatisfaction with skill levels of TVET graduates in Kenya. There are various aspects that could be attributed to the low levels of employability skills, such as changing technology, the state of equipment and training facilities in TVET institutions, and competencies of instructors among others. This study aimed at establishing the relationship between staff competencies and graduate employability in TVET institutions in Kenya. The study was underpinned on Romiszowski's (2009) concepts of Instructional theory for skill development. Quantitative research approach and correlational design were adopted to guide the study processes. Two hundred and eighty-five former students who had graduated from two TVET colleges in Nyandarua county in 2021 formed the study's target population. Linear snowball sampling strategy was used to identify 49 respondents. Data was collected through structured questionnaires. The instruments were sent through email to each of the participants. The results indicated that 53.3 percent of the respondents rated the influence of staff competencies with high agreement levels, compared to 46.7 percent who rated the same variable with low agreement levels. The results further indicated that there was significant positive relationship between staff competencies and graduate employability scores ($r$ (45) = .40, $P$= .006). The study recommends that the Ministry of Education through Curriculum Development Assessment and Certification Council, and Kenya Institute of Curriculum Development ought to embark on curriculum reform towards inculcation of skills and abilities that would enable graduates to market themselves in the job market. There is need for TVET institutions to embrace new technology in order to engage learners in a digital rich environment that can prepare them for current demands of the job market.

**Keywords**: *Staff Competency, Graduate Employability Skills, Skill Development, Curriculum Development, Knowledge Management, Socioeconomic Development*

## INTRODUCTION

The ultimate goal of Technical and Vocational Education and Training (TVET) institutions is to develop young people towards acquisition of qualities and skills sought out in the labour market (Chang, 2021). Graduate employability is a fundamental concept for explaining the relationship

between training, skill acquisition and labour market. Graduate employability is described as a set of educational achievement, such as specific abilities, skills, and quality attributes possessed by a graduate (Clarke, 2018). Commonly referred to as Vocational Education and Training (VET) or Vocational Education (VE), Technical and Vocational Education and Training (TVET) entails a form of formal education aimed at fostering knowledge and skills for employment (UNESCO, 2015).

In Kenya, since its introduction by colonialists early in 19th century, technical and vocational education has since undergone major changes from what was then perceived as a weapon against the academically underprivileged natives to being a solution to youth unemployment and a tool for socioeconomic development (Ngure, 2022). Currently, the type of curriculum offered by Kenya's TVET institutions is devised through concerted efforts of various agencies, including National Industry Training Authority (NITA), Kenya Institute of Curriculum Development (KICD), Technical and Vocational Education and Training Curriculum Development, Assessment and Certification Council (TVET CDACC), and Kenya Accountants and Secretaries National Examination Board (KASNEB) (Akala & Changilwa, 2018).

The main goal of TVET curriculum is to provide life-long learning with view of producing skilled graduates who can find employment, become productive and self-reliant. This is consistent with the observation by Ngure (2022) that school curriculums are expected to promote students' moral, emotional, and sociocultural development in addition to preparing them for opportunities and life experiences. That said, however, recent studies show that Kenya still faces the challenge of unemployed youth despite government's commitment to revive TVET institutions. According to Kailo (2020), in a study carried out in Kilifi, Kenya, the state of joblessness and poverty continues to rise, occasioning the need for immediate solutions to foster employability skills among the young people. The study suggested that there was need for teachers to refine their skills through industrial attachments and workshops in order to be effective in imparting the trainees with employable skills.

According to Ligami (2018), based on findings presented at a regional universities' conference held in Nairobi, the curriculum being applied in TVET institutions seems to be too theoretical to provide practical skills sought by industries. It was further noted that employers have registered their dissatisfaction with the level of skills possessed by most of TVET graduates. These insights

come against a backdrop of various challenges facing the livelihoods and socioeconomic development of families in Nyandarua County, including poverty among rural based communities (Mwangi, 2015). Further, a recent county report indicated that unemployment rates were highest among the youth, implying that most of the young people being produced by TVET institutions were not being absorbed by the service and manufacturing industries (Nyandarua County Government, 2018). This begs the question as to whether TVET institutions in Nyandarua county are doing enough in preparing skilled workers and promoting socioeconomic empowerment among the communities in the area. It is against this backdrop that the study sought to establish the relationship between staff competencies and graduates' employability in TVET institutions in Nyandarua County, Kenya.

## LITERATURE REVIEW

Technical and vocational training staff play an important role in fostering employability skills among their students. Adequate competencies among the teaching staff are essential for students' academic development and skill acquisition in vocational and technical colleges (Omar, Ahmad, Hassan, & Roslan, 2018). Vocational education varies across different countries and professions of vocational instructors differ depending on one setting from the other (Antera, 2021). However, technical and vocational teachers' competencies are generally described as knowledge and a set of abilities, including those touching on pedagogical, professional, technological and vocational domains (Wahyuni & Sugihartini, 2020).

The terms knowledge, abilities, attitudes, behaviour or skills can be summed up into quality, which further can be referred to as "competence". Derived from a Latin word "competere" competent refers to an individual's who operates with a high level of knowledge, skill, behaviour or attitude in their tasks and responsibilities. This can therefore be explained as having a certain level of quality to carry one's responsibilities competently (Sern, Hamisu, & Salleh, 2017).

There is need for quality educational standards in vocational and technical training colleges, if such institutions are to produce skilled, qualified and competent graduates who can demonstrate mastery of skills sought out in the labour market. Such educational achievement can only be attained under the guidance of qualified and competent educators, who have mastered curriculum related resources (Bakar, 2018). Unlike their counterparts in general schools, who are expected to impart students with typical learning skills, educators in technical and vocational

schools have a greater burden of ensuring that students achieve job-specific and directly employable skills (Zilic, 2018). Some of the essential competencies that teaching staff in vocational institutions ought to possess include proficiency of actual work and emerging challenges in the rapid changing labour market. Others include knowledge of technical skills, understanding work procedures and mechanisms for application of work tools, and ability to present industry experiences through instructional activities (Wahyuni & Sugihartini, 2020).

Globally, scholars and educational researchers have explored on the relationship between vocational educators' competencies and students' skill acquisition in readiness for the competitive labour market. Research from Dominican Republic indicates that there are five operational and organisational inputs in technical and vocational schools that influence students' academic success. Among these include recruitment and retention of competent teachers, continued training of instructors, and effective learning strategies (Haegg, 2020). This suggests that teaching staff's competencies play an important role in maximizing students' learning and skill acquisition, which are key factors in fostering employability and occupational success (Tran, 2019).

Research indicates that teachers' proficiency on what is required to produce impactful employees is crucial for inculcation of employability skills among students. For instance, Sakam, Jamaluddin and Wahat (2022) in their work based in Malaysia affirm that teachers in vocational and technical schools can inculcate specific employability skills in students in preparation for employment. The researchers found that increase in teachers' competencies increased the tendency of inculcation of employability skills among the trainees. This is also consistent with Ismail, Nopiah, and Rasul's (2017) views that a competent teacher acts as a quality assurance for students learning outcomes. The authors however noted that a number of concerns exist about TVET teachers in Malaysia. These include failure to use English language for instruction, poor instructional skills in technical courses, information and communications technology (ICT), and lack of competency model, as well as absence of job profiles for TVET teachers.

Similarly, Omar, Ismail, Abdullah, and Pyng (2021) note that in light of increasing concerns expressed by leaders of industries about lack of skills among TVET graduates in Malaysia, teachers have a role to play in inculcation of technical and non-technical skills in students under their tutorship. This can be attained by having the teaching staff in TVET institutions comply

with requirement to upgrade their knowledge both in theoretical and practical realms. This would be essential in making such instructors more competent and resourceful in fostering key skills that correspond with today's requirements in the labour market (Ugochukwu, Elisha, Igwe, & Ntasiobi, 2020). As such, there is need for continued efforts to develop TVET teachers specific competencies, skills and professional traits in educational, as well as other soft skills that can help them match the requirements of the ever-changing teaching and learning settings.

From Indonesia, Nurjanah (2021) notes that while TVET graduates are expected to have high capabilities in order to be competitive in finding employment in the industrial market, TVET institutions still lack optimal systems for preparing students for work readiness. It was however noted that this challenge could be resolved by among other actions, establishment of a training programme to provide continuous education to teachers and utilization of new and innovative learning strategies. This underlines the significance of teaching staff competencies and application of innovative, multi-teaching approaches in enhancing students' employability skills (Peng, Wang, Yue, & Feng, 2021).

In Europe, the available literature shows that there are different concepts about vocational education and training. In Finland for instance vocational education is part of continuous education (Cedefop, 2020). The Finnish National Agency for Education (2020) states that the objective of vocational education and training (VET) is to support students' skill development towards enabling them secure employment and become better members of the society. In this regard, there is need for teachers in VET institutions to be competent, and possess exemplary skills, abilities and motivation requisite for guiding their students towards such important goals (Rinne & Raudasoja, 2020).

The available literature from the African continent portrays TVET as a critical component with regard to the role it plays in boosting employment and economic growth (Diallo, 2023). Based on a study from Nigeria, Emuji, Mkpong and Okon (2019), establish that acquisition of students' employability skills largely depends on instructors' competence. The researchers suggest that there is need for education system to devise ways and practical mechanisms for sustaining teaching staff competencies regarding the levels of knowledge, communication, creativity, discipline and lesson preparation. This however does not mean that students should be passive in acquisition of employability skills as they need to develop skills, values and attitudes that can

encourage the acquisition of employability skills. Principally, however, it is upon teachers to impact students through various competencies, including different teaching strategies, identifying their learning needs and imparting them with technical and vocational skills they will need in the workplace (Okoye, 2015).

According to Sern, Hamisu and Salleh (2017), like most of other developing nations, Nigeria's vocational education and training has been through numerous challenges that have negatively affected the rate of competent teachers, resulting in poor quality of graduates and low employability. In this regard, there is need for teachers to have access to continuous professional development programmes in order to satisfy the need for competency, skills and work abilities that teachers in TVET institutions require in the core context of curriculum delivery, meeting students' learning needs and impacting them with employability skills.

Recent statistics from South Africa indicate that poor preparation of students is associated with growing levels of unemployment. The records indicate that over six million people were unemployed by the year 2019 (StatsSA, 2019). The poor prospects of employment in the country have been attributed to various challenges, among them being lack of sufficient educational preparation and inadequate schooling system (Rogan & Reynolds, 2016). Such challenges are an indication that more needs to be done to address issues affecting students' acquisition of knowledge and key skills deemed essential for employability and ability to become impactful employees.

Recent studies in Ethiopia generally indicate that there is a mismatch between employability skills and employment rates of TVET graduates. In one of such studies, Geressu (2017) established that the general performance of TVET institutions in the country has been below expectations in terms of devising and applying competence-based programmes that could bolster employability skills among the graduates. This has as a result led to reduction of TVET graduates' employment opportunities in Ethiopian industries by nearly half in the last two years. This reinforces the findings by Mengistu and Negasie (2022), who observed that in a sample of randomly selected participants from three TVET colleges in Ethiopia, the scores of perceived employability of students was found to be lower than expected.

As Pusriawan and Sunaryo (2019) explain, technical skills alone are not adequate factors for employability. In addition to such technical skills, students must also acquire other soft skills that employers find to be more nuanced and essential for making employees adaptable to different work environments (Mengistu & Negasie, 2022). This is an indication that employment of TVET graduates and the recorded reduction of employability is largely dependent on the level of employability skills acquired in training colleges (Michelle & Tendai, 2016). This demonstrates the need for competency of the teaching staff in TVET colleges if such institutions are to produce graduates that are capable of making positive contributions in the workplace.

## MATERIALS AND METHODS

The objective of the study was to establish the relationship between staff competencies and graduate employability in TVET institutions in Nyandarua County, Kenya. The study was guided by Romiszowski's (2009) concepts of Instructional Theory for Skill Development. Quantitative research approach and correlational design were adopted to guide the study processes. Two hundred and eighty-five former students who had graduated from two TVET colleges in Nyandarua county in 2021 formed the study's target population. Linear snowball sampling strategy was used to identify 49 respondents. Data was collected through structured questionnaires that were sent through email to each of the participants. Data analysis was carried out in descriptive and inferential statistics. The specific descriptive statistics involved the analysis of frequency distribution, dispersion of variance and symmetrical distribution. Inferential statistics were carried out in Pearson Correlation Coefficient ($r$) for the purpose of hypothesis testing and making inferences.

## RESULTS AND DISCUSSION

### Presentation of findings

*Response Rate*

Questionnaires were sent electronically to all the 49 identified respondents. Out of those emailed, 45 were returned and following inspection were found to be eligible for inclusion in the analysis. The returned questionnaires represented a response rate of 92 percent, which was ideal for making generalization, given that Fincham (2008) recommends a rate of not less than 80 percent for surveys involving schools and colleges.

*Description of Staff Competencies and Graduate Employability*

The study sought to establish the relationship between teaching staff competencies and graduate employability skills in TVET institutions in Nyandarua County. The measures of staff competencies were obtained based on students' perceptions, who were asked to indicate their satisfaction about teachers' competencies. The scores were computed and analysed so as establish the mean scores and standard deviations for each of the items as demonstrated in Table 1.

**Table 1:** *Means and Standard Deviations for Staff Competencies Scores*

| Variable | Measure | *M* | *SD* |
|---|---|---|---|
| Staff Competencies | Possession of technical competencies such as mastery and delivery of curriculum, instructional planning and evaluation | 3.95 | 1.1 |
| | Communication and language skills | 4.02 | 0.89 |
| | Creativity, analytical thinking and decision-making skills | 4.2 | 0.91 |
| | Leadership skills such as ability to listen, synthesize and clarify issues, and identify with other peoples' perspectives | 4.2 | 0.99 |
| | Good system thinking skills such as abilities to make distinctions, have multiple perspectives and opting to experiment to find solutions rather than speculating | 4.33 | 0.85 |
| | Professional competencies such as ability to distinguish oneself in specific tasks and being able to fast adapt to the profession's changing needs | 4.22 | 0.87 |
| | Skillful in technology application | 3.73 | 1.05 |
| | Self-motivation, initiative and adaptable to different work environments | 3.73 | 1.19 |

*Note. N*= 45, M= Mean, *SD*= Standard Deviation.

The results in Table 1 demonstrate that on whether teachers possessed adequate levels of system thinking skills had the highest rating with a mean score of 4.33 (*SD*= .85). The results imply that TVET teachers generally possessed acceptable levels of abilities to understand, and evaluate individual decisions and find solutions to complex problems. The results further indicate that whether teachers possessed professional competencies to standout in specific tasks and being able to adapt to the changing needs of their environment was the second highest rated with a mean score of 4.22 (*SD*= .87). On proposition that teachers possessed adequate skills in

creativity, analytical thinking and decision-making generated a high mean score of 4.20 (*SD*= 4.91).

The participants were also asked to rate how much they agreed with the measure that teachers exhibited leadership skills such as the ability to listen, analyse and clarify issues, and identify with other peoples' perspectives. The measure was rated with a mean score of 4.20 (*SD*= .99) implying that the participants mostly agreed with the proposition. With regard to whether teachers demonstrated good communication and language skills, the measure was rated with a mean score of 4.02 (*SD*= .89). The high mean score indicates that the participants generally consented that teachers possessed such skills.

The participants were also asked to rate their level of agreement on the measure that teaches held good levels of technical competencies such as abilities in curriculum delivery, instructional planning and evaluation. In response, the measure generated a relatively high mean score of 3.95 (*SD*= 1.10), implying that the participants generally approved such skill levels. The measure as to whether teachers were well skillful in technology application received the least mean score of 3.73 (*SD*= 1.05), same as the response on whether they demonstrated good levels of self-motivation, initiative and adaptability to excel in different work environments with a mean of 3.73 (*SD*= 1.19).

The results have generally shown that teaching staffs' competencies, including technical competencies, system thinking skills, professional competencies, and communication and language proficiency enhance graduates' employability skills. The results are consistent with those of Omar et al. (2021) in a study from Malaysia, that emphasized about TVET teachers significance in inculcating technical and other non-technical skills sought by employers today.

The results however indicate that the participants relatively disapproved the usefulness of teachers skills of technology application and self-motivation, and adaptability of different work environments in enhancing their employability skills. This implies that more needs to be done to revitalize teachers' skills on application of new technology in their evolving practices. This lends credence to a study by Changilwa (2016) in Nigeria that TVET has become ineffective in developing graduates' employability skills due to inadequate use of technology.

The scores on staff competencies were further analysed in order to categorise the participants into different levels taking into considerations those whose agreement levels were high or low on the scale as reported in Table 2.

**Table 2:** *Participants' Rating Levels on Teachers Competencies*

|        |       | Frequency | Percent |
|--------|-------|-----------|---------|
| Valid  | Low   | 21        | 46.7    |
|        | High  | 24        | 53.3    |
|        | Total | 45        | 100.0   |

Note. N= 45.

The data in Table 2 shows that slightly more than a half (53.3%) of the participants rated the measures of staff competencies with high agreement levels compared to 46.7% who rated the same with low agreement levels. This demonstrates that the students were moderately satisfied with the levels of their teachers' competencies. The findings imply that the teaching staff in TVET institutions in the area of study had considerably good levels necessary for imparting employability skills in their students. The scores on graduates' employability skills were also obtained in order draw comparisons between teaching staff's competencies and graduate employability. The results are presented in Table 3.

**Table 3:** *Means and Standard Deviations for Graduates' Employability Scores*

| Variable | Measure | $M$ | $SD$ |
|----------|---------|-----|------|
| Graduate Employability Skills | My integrity and responsibility have been influenced by teachers' professional competencies | 4.51 | 0.69 |
| | Teachers leadership skills such as ability to listen, and identify with other peoples' perspectives enhanced my interpersonal skills | 4.26 | 0.65 |
| | Creativity, ability to generate new ideas and solve complex problems has been influenced by teachers system thinking skills | 4.00 | 1.20 |

| | | |
|---|---|---|
| Acquisition and development of problem-solving skills is enhanced by teachers analytical and creative thinking skills | 3.95 | 0.95 |
| Communication skills has been nurtured by teachers language skills | 3.88 | 0.93 |
| Level of my basic skills such as reading, writing, and ability to maintain dialogue is enhanced by teachers' proficient delivery of curriculum | 4.20 | 0.81 |
| My level of professionalism has been enhanced by teachers professional competencies enhanced | 3.84 | 1.18 |
| My ability to respond positively to changes has been influenced by teachers' skills of self-motivation, and adaptability to different work environments | 4.15 | 0.85 |

*Note. N*= 45, *M*= Mean, *SD*= Standard Deviation.

As shown in Table 3, the results indicate that the statement on whether graduates perceived their personal qualities such as integrity and responsibility to have been influenced by their teachers leadership skills was rated with the highest mean score 4.51 (*SD*= .69). The high rating implies that graduates were generally contented with the contribution of teachers' leadership skills such as ability to listen, synthesize, clarify issues and appreciate other peoples' views. The statement on whether graduates perceived teachers' leadership skills as significant in imparting their interpersonal skills generated the second highest rating with a mean score of 4.26 (*SD*= .65.

The measure on whether graduates acquisition of basic skills was influenced by teachers proficiency in curriculum delivery generated a mean score of 4.20 (*SD*= .81). The high rating indicated that graduates generally consented that teachers' technical competencies enhanced their basic skills. The results further indicate that the statement on whether graduates' skills of positively responding to changes were influenced by their teachers' adaptability and self-motivating competencies was rated with a mean score of 4.15 (*SD*= .85). The high rating score suggests that graduates generally agreed that teachers' adaptability and self-motivating skills were essential in enhancing their employability skills of positively responding to change.

The results indicate that the measure on whether graduates' skills of creativity, ability to generate new ideas was influenced by teachers system thinking skills was rated with a mean score of 4.00 (*SD*= 1.20). This relatively high score is an indication that the participants generally concurred about the influence of teachers system thinking competency on their employability skills of

creativity and ability to generate new ideas. On whether graduates' problem-solving skills were enhanced by the teaching staff's competencies of analytical and creative thinking was rated with a mean score of 3.95 (*SD*= .95), with the relatively high rating suggesting that graduates were largely in agreement about the influence of teachers competencies in enhancing the stated type of employability skills.

The results also indicate that the measure as to whether graduates' communication skills were enhanced by teachers competencies of language proficiency was rated with a mean score of 3.88 (*SD*=.93), implying that the participants by and large agreed about the influence of teachers' competencies in enhancing this form of employability skills. Lastly, the results indicate that the statement that graduates' professionalism was enhanced by teachers' professional competencies generated a mean score of 3.84 (*SD*= 1.18). Despite this being the least rated measure, the results suggest that the participants still had a fairly high perception on influence of teaching staff's professional competencies on their professionalism skills.

The scores were further analysed in order to group the participants in different levels considering those who rated graduates' employability with high or low levels. The results are presented in

**Table 4:** *Participants' Rating Levels on Graduate Employability Skills*

|       |       | Frequency | Percent |
|-------|-------|-----------|---------|
| Valid | Low   | 19        | 42.2    |
|       | High  | 26        | 57.8    |
|       | Total | 45        | 100.0   |

Note. N= 45.

The results in Table 4 indicate that majority (57.8%) of the participants rated the measures of graduate employability skills with high agreement levels, compared to 42.2% who rated the same measures with low agreement levels. The findings are supportive of those of Emuji et al. (2019) from a Nigeria that even though TVET graduates' employability may be developed through other mechanisms, such as market needs and relevant experience, skill training and instructor competence remain the most essential factors.

*Hypothesis Testing*

To test the relationship between the teaching staff competencies and graduate employability, the following hypothesis was advanced:

H01: There is no statistically significant relationship between staff competencies and graduate employability in TVET institutions in Nyandarua County, Kenya.

The mean scores of staff competencies and graduate reliability were subjected to bivariate correlation using Pearson Correlation Coefficient (*r*) so as to establish if any relationship existed between the two variables. The results are presented in Table 5.

**Table 5:** *Correlation Matrix for Staff Competencies and Graduate Employability*

|  |  | Staff Competencies | Graduate Employability |
|---|---|---|---|
| Staff Competencies | Pearson Correlation | 1 | .40** |
|  | Sig. (2-tailed) |  | .006 |
|  | N | 45 | 45 |
| Graduate Employability | Pearson Correlation | .40** | 1 |
|  | Sig. (2-tailed) | .006 |  |
|  | N | 45 | 45 |

Note. N= 45

**. Correlation is significant at the 0.01 level (2-tailed).

The results from correlation matrix as demonstrated in Table 5 indicate that a statistically significant relationship was established between staff competencies and graduate employability scores (*r* (45) = .40, *P*= .006). The results therefore indicate that a positive and statistically significant relationship was found between the two variables since the p value of .006 is lower than 0.05 as the level of significance. This implies that various teachers competencies including technical skills related to curriculum delivery; leadership skills and technology application among others are instrumental in enhancing graduate employability skills. It can thus be inferred that increased competencies in TVET teaching staff positively influence employability skills among the students.

## Discussion

The results of the present study revealed that TVET teachers possess satisfactory levels of competencies. It was established from descriptive results that the proficiencies held by the teaching staffs in TVET institutions such as technical competencies, skills for language and

communication, professional competencies and system thinking positively influence graduates' employability skills. The results support those of Omar et al. (2021) from a study carried out in Malaysia that competencies of TVET instructors play an essential role in influencing graduates' employability skills.

While various forms of competencies held by the teaching staff were found to be key in enhancing graduates' employability skills, the study established that instructors' proficiency in application of technology had less impact in enhancing graduates' employability skills. These findings also corroborated those of Changilwa from a Nigerian based study in which it was found that inadequate application of technology had negative effects in enhancing graduates' employability skills in TVET institutions.

From inferential analysis, it was established that there was a statistically significant relationship between teaching staff's competencies and graduate employability ($r$ (45) = .40, $P$= .006). The study established that various TVET teachers' demonstrate various competencies such as technical skills for curriculum delivery, professionalism, language and communication skills that have positively influenced graduates' employability skills. The study established that an increase in teachers competencies resulted in enhanced graduate employability skills. The findings are in harmony with those of Tran (2019) in a study from Vietnam that equipping TVET students with the right skills during training processes remains the most significant approach for enhancing employability skills that employers are looking for.

The findings are also consistent with those of Kailo (2020) in a study carried out in Kilifi, Kenya, which found a statistically significant relationship between TVET teachers' qualification and graduates' acquisition of employable skills. The findings however contradict those of Tran (2019) who reported that even though equipping students with knowledge and skills was instrumental, TVET institutions should do more by sensitizing students about external societal dynamics of the labour market in order to prepare them for greater flexibility to the local and global working environments.

The study findings revealed that increased competencies in TVET teaching staff positively influence employability skills among the students. The results support those of Tran (2019) based on research in Vietnam, in which it is argued that even though there are no common

'ingredients' for employability, the dominant discourse for advancing graduate employability still remains the instrumental approach of equipping students with the skills sought by employers.

## CONCLUSIONS AND RECOMMENDATIONS

Based on descriptive findings, the study has concluded that teaching staff's competencies such as system thinking skills, technical skills for curriculum delivery, language, communication and professional skills are helpful in enhancing graduates' employability skills. The study concluded that teachers' system thinking skills had the greatest influence in enhancing graduates' employability skills. It was also concluded from descriptive results that application of technology and adaptability to different work settings had the least influence on trainees' employability skills.

The study concluded that there was statistically significant relationship between staff competencies and graduates' employability skills. The study concluded that increased staff competencies resulted in enhanced graduates' employability skills.

Based on the findings and conclusions the study recommends that the Ministry of Education through Curriculum Development Assessment and Certification Council, and Kenya Institute of Curriculum Development needs to consider curriculum reform towards inculcation of skills, and abilities that would invigorate students' human capital and enable them to market themselves in the job market. There is need for TVET institutions to embrace the application of new technology during curriculum delivery in order to engage learners in a digital rich environment that can prepare them for current demands of the job market.

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Contribution of Green Promotion on Consumer Buying Behavior In 4-5 Star Restaurants in Nairobi County, Kenya

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## Abstract

Green promotion involves a company communicating with its target groups and stakeholders of its product or a company as a whole. Consumer buying behavior refers to the activities and experiences of restaurant guests who engage in purchasing, consuming and disposing of goods and services. The purpose of this study was to examine the contribution of green promotion on consumer buying behavior in 4-5- star restaurants in Nairobi County, Kenya. The study adopted a descriptive survey design where a sample size of 19 restaurants were sampled in Nairobi County. Data collection techniques were questionnaires, observation schedules and secondary data sources which were newspapers, articles and Tv programmes. Qualitative data was coded, analyzed using NVIVO. Quantitative data was analyzed using SPSS with levels of significance established using Pearson Product moment correlation with a cut-off point of p being < or =0.05 at 95% confidence and significance levels. The findings showed a Pearson correlation co-efficient of 0.98 and p=0.000<0.05 indicating that indeed green promotion has a very strong positive significant effect on consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya. This implies that consumer buying behavior is influenced by green promotion in 4-5-star restaurants in Nairobi County.

**KeyWords:** *environmental sustainability. green promotion, green consumer buying behavior*

## INTRODUCTION

Green promotion are products produced in restaurants that are not harmful to the environment and they are produced in an environmentally friendly manner (Ranjana, 2016). Green consumer buying behavior refers to the experiences and activities by restaurant guests who engage in purchasing, consuming and disposing products and services in a manner that conserves the environment (Kaufmann, Panni, & Orphanidou, 2012).

## Background

With the continuous increase in environmental conservation concerns awareness among consumers, their product choices continue to evolve thus influencing their consumption towards green promotion as a way of protecting their environment (Verma & Chandra, 2018). For instance, globally the green consumer market generates $ 290 billion annually with 14% of them representing the eco-tourism market as a result of increased global environmental concerns awareness (Schneider, 2012; Martinez, Angel, & Raquel, 2017). Restaurant consumers are as well shifting towards restaurants that are responding to their environmental needs since in

Kenya 50% of consumers prefer natural and organic products (Kenyan-Marketing-Magazine, 2012). This is a clear indicator that green demographics are increasing in importance and restaurants cannot afford to overlook this ever-growing influential green market niche.

### Link between green promotion and consumer buying behavior

With the increase of green consumption due to global warming and environmental concerns awareness, consumers expect restaurants to be green and failure to offer green promotion will lead to significant losses to green competition (Imran, 2016). This is because consumers are punishing or rewarding restaurants depending on their environmental sustainability performance in this case buying means spreading positive word of mouth and punishing means refusing to buy products or spreading a negative word of mouth (Grunert, 2011). According to a study conducted by Balderjahn (1988), he discovered that consumers with positive attitude towards green awareness living were purchasing responsibly by buying green promotion in order to protect their environment. Furthermore, Sarrigullu (2009), found out that consumers with pro-environemental behavior tend to be more sensitive in their product choices, preferences and purchases. A study by Ranjana (2016), indicated that green promotion have a positive significant influence on consumer buying behavior.

### Statement of the problem

The contemporary issue of the $21^{st}$ century is environmental sustainability due to increased environmental problems like global warming, floods, droughts and drastic change of weather patterns which is as a result of continuous pollution of the environment with restaurants being major emitters of greenhouse gases by 30% globally (Teng & Wu, 2019). With the increasing environmental concerns awareness among consumers has led to consumers to increasingly demand for restaurants to take environmental responsibility by offering green promotion as a way to avert the negative environmental impacts they faced. Furthermore, consumers are preferring organic and natural products over other conventional products that are non-green (Kenyan-Marketing-Magazine, 2012), thus prompting the researcher to undertake this study.

### Research Hypotheses

$HO_1$: There is no significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya.

HA₁: There is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya.
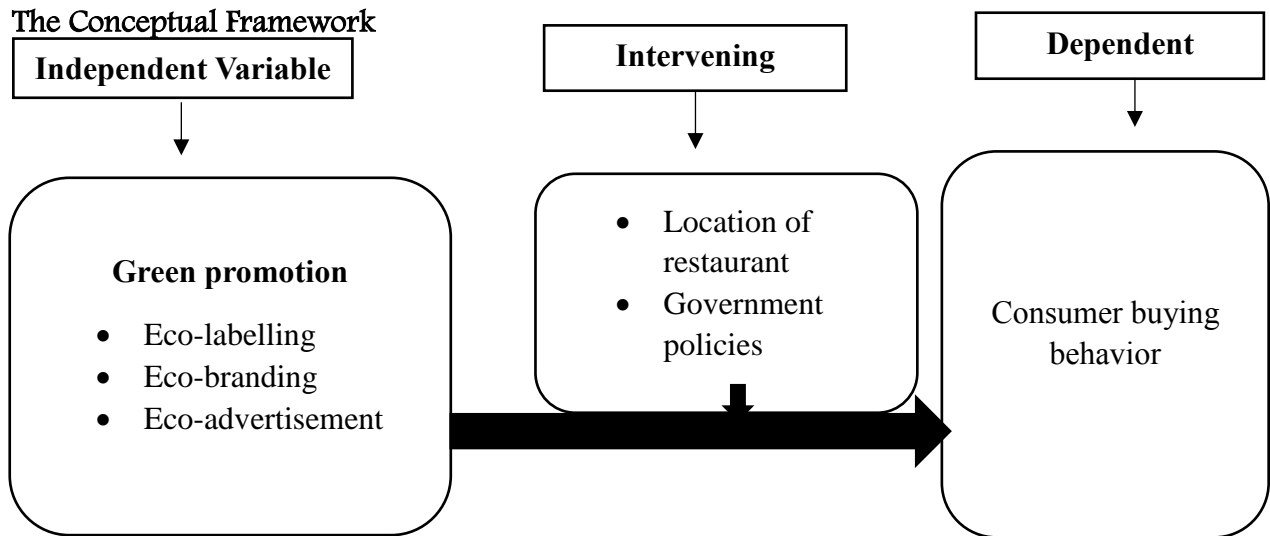
## The Conceptual Framework



Figure 1: Conceptual framework of Green, Sustainable Practices

Sources: Adapted from (Morel & Kwaye, 2012; Wong & Rashad, 2015; Ranjana, 2016)

## LITERATURE REVIEW

### Green promotion

A product refers to the "total bundle of utilities or benefits that a consumer obtains in the exchange process (Morel & Kwaye, 2012). A green promotion therefore refers to the benefits or utilities that are produced in an eco-friendly manner and are not harmful to the environment (Morel & Kwaye, 2012; Ranjana, 2016). With the continuous increase of consumers recognizing the environmental problems like global warming, consumers are now becoming environmentally conscious when purchasing products and services. Past studies on green promotion consumption have mainly focused on demographic and psychological characteristics of green consumers without specifically focusing on how green promotion influence consumer buying behavior in restaurants in Nairobi County, Kenya (EunHa & Soo-Cheong, 2010).

### Consumer buying behavior

Consumer buying behavior is the selection, purchase consumption of goods and services by customers for the satisfaction of their needs and wants (Ramya & Mohamed, 2016). Green

behavioral intention refers to the likeliness of consumers to revisit, recommend and pay premiums for services and goods that are friendly to the environment. Green consumer buying behavior can be categorized as: the willingness of consumer to behave in an environmentally responsible manner, management of the environment, taking part in civic and eco-friendly practices, intentions to revisit, recommend and pay premiums in green restaurants that offer green promotion and services (González-Rodríguez, Díaz-Fernández, & Font, 2019; Handriana & Ambara, 2016). As the environmental conservation awareness continues to grow among consumers, their purchasing behaviors and intentions continuous to change in favor of environmentally friendly products by choosing to dine and patronize in restaurants that offer green promotion (Verma & Chandra, 2018). This is called perceived consumer effectiveness according to Ellen (1991), whereby consumers' degree of believing that their actions to save their environment can make a difference in solving the problem like climate change, global warming and severe droughts.

## Good Management Theory

This theory aided the study to understand how consumers are influenced by green promotion activities by restaurants. The theory states that the restaurants which have innovative management often seek to incorporate competitive advantage management strategies from practices such as making use of green practices to better serve their customers (Miles & Russell, 1997). This is because in a saturated market situation, where market forces are constantly changing, increasing competition and market differentiation is being harder; companies should seize the opportunity to attract customers, create positive publicity and increases customer loyalty through green promotion by eco-labeling products, eco-branding and environmental advertisement which are superior environmental practices so as to increase their market share (Wilhelm, 2009).

## Research Gap

There are limited studies that have been carried out on effects on green promotion practices on restaurants about customer purchasing behavior in Nairobi City County, Kenya since the existing studies in Kenya have concentrated on Mombasa County and on other subjects like for instance, the study conducted by Gitobu and Njoroge (2015), conducted a study on the adoption of green marketing practices by Mombasa County hotels. This study was confined to Mombasa county hotels and didn't cover Nairobi City County and also it based on the adoption of general green marketing practices instead of strictly focusing on how green practices like green promotion

affects consumer buying behavior, thus prompting the researcher to undertake these research in order to fill in this gap by examining whether green promotion have an effect on consumer buying behavior in Nairobi County and whether green promotion have a higher quality as compared to non-green promotion.

## MATERIALS AND METHODS

### Research Design

The study used descriptive cross-sectional design to determine whether there is a relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya. The choice of Nairobi was informed by being having the highest number of classified restaurants which are 20 4-5-star restaurants (The-Kenya-Gazette, 2003).

Quantitative and qualitative approach methods were used in this study to enable the study to get a clear picture from the respondents of whether green promotion influenced consumer buying behavior in 4-5-star restaurants in Nairobi County, Kenya.

Table 1: Sampling Technique

| Technique | Where applied | Justification |
|---|---|---|
| Census | 4-5-star restaurants | To reduce sampling error |
| Purposive sampling | Restaurant managers, supervisors and waiters | To get critical information from respondents |

A total of 79 employees from 4-5-star restaurants in Nairobi County, Kenya participated in the study.

Table 2: Distribution of the respondents

| Target group population | Target population | Sample size | Percentages |
|---|---|---|---|
| Restaurant managers | 20 | 15 | 20 |
| Restaurant supervisors | 40 | 32 | 40 |
| Restaurant waiters and waitresses | 40 | 32 | 40 |
| Total | 100 | 79 | 100% |

The study used both primary and secondary data collection methods to collect data. The primary data source utilized a structured questionnaire for 4-5-star restaurant employees in Nairobi County, Kenya. A well-structured observation schedule was used to obtain raw data from 4-5-star restaurants in Nairobi County, Kenya. The research instruments comprised of both open and

closed ended questions. Secondary sources of data involved retrieving information from research Tv programmes, articles, newspapers, journals, websites, periodicals and book reviews.

## Pre-Testing

Data collection instruments were pre-tested in 1 4-5-star restaurant in Nairobi County, Kenya to eliminate errors, to identify area of improvement and to check on their suitability as research tools. This assisted the researcher to establish the expected response rate and to modify or eliminate questions which are either not clear or were not in line with the objective of the study.

## Validity and Reliability of Research Instruments

Content validity of the research instruments was determined by pre-testing the instruments and checking responses against study objectives, conceptual frame work and as guided by the research supervisors. A Pre-test was carried out within Nairobi County in non-participating 4-5-star restaurants in Nairobi County, Kenya. Research assistants were trained on data collection procedures, including clarifying the purpose of the study to the respondents, making suggestions, observing skills and other important inputs. The instruments were administered to the same respondents in non-participating 4-5- star restaurants in Nairobi County, Kenya after thirty days as a test of reliability. The pre-testing data was coded and analyzed to identify and correct the emerging errors. A reliability coefficient of 0.67 was obtained (as shown in table 1.3) which indicated that the research instruments were reliable according to Griethuijsen and Trimmer (2014), who asserted that Alpha co-efficients ranging from 0.67-0.87 for such studies are reliable and reasonable.

**Table 3: Reliability Test Results: Cronbach's Alpha**

| Scale | Cronbach's Alpha | No. of items | Comment |
|---|---|---|---|
| Green promotion | 0.72 | 5 | Reliable |

## Data Analysis Technique

Both quantitative and qualitative data analysis techniques were used by the study since the data collected was both numerical and narrative. Quantitative data was analyzed using IBM statistical packages for social sciences with levels of significance established using paired tests with a cut-off point of p being < or =0.05 at 95% confidence and significance levels. Qualitative data was

analyzed into statements which have high relevance to the objective of the study and was analyzed using NVIVO.

**Table 4: Summary of Hypothesis Testing**

| Null Hypothesis | Test done | Verdict | Result |
|---|---|---|---|
| HO$_1$: There is no significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County | Regression Analysis | <0.05 reject the null hypothesis Accept alternative hypothesis >0.05 fail to reject the null hypothesis Reject the alternative hypothesis | Determine the relationship between green promotion and consumer buying behavior |
| HA$_1$: There is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County | Regression Analysis | <0.05 Accept alternative hypothesis Reject the null hypothesis >0.05 Reject the Alternative hypothesis Accept the null hypothesis | Determine the relationship between green promotion and consumer buying behavior |

## RESULTS AND DISCUSSIONS

### Response rate

Out of a total of 79 questionnaires which had been issued to respondents, only 56 were completed which represented a 71% response rate. Response rates approximating 60% for most research should be the researcher's goal (Mugenda & Mugenda, 2013). This shows that the researcher met the minimum required response rate to make the results reliable and conclusive. A non-response rate of 29% was found due to respondents not being co-operative.

**Table 5: Response Rate**

| Questonaires | Frequency | Percent % |
|---|---|---|
| Response | 56 | 71% |
| Non-response | 23 | 29% |
| Total | 79 | 100% |

### Demographic characteristics of the study

The researcher obtained information about the personal data of respondents. The data was related academic level. The quantitative data were presented in the form of tables and pie charts below:

## Academic level of respondents

The results indicated that certificate holders comprise of 25%, 58.9% were diploma holders while 16.1% were Bachelor's degree holder as summarized in figure 1.4 below. This study implies that the green promotion are being produced in the restaurants since the supervisors and waiters and waitresses who are the policy implementers in the restaurant industry fall under the category of diploma holders who comprise of 58.9%. Since educated employees embrace green practices readily because at diploma level the employees have acquired environmental knowledge on the importance of ecological conservation in the curriculum (Sustainability, 2015).

## Descriptive Statistics of green promotion and consumer

The study shows that 4-5 restaurants in Nairobi City County publish eco-friendly attributes of its products on the co-operative website with a mean of 4.14 and a standard deviation of 0.724. The study indicates that the respondents promote their green achievements and credentials with a mean of 4.07 and a standard deviation of 0.735. With a mean of 4.05 and a standard deviation of 0.724, this indicates that respondents advertise their eco-friendly products by eco-labeling their products. The study shows that the 4-5 restaurants in Nairobi City County publish all their eco-friendly activities on the co-operate website with a mean of 3.88 and a standard deviation of 0.740. The study indicates that the respondents collaborate with environmental groups with a mean of 1.00 and a standard deviation of 0.00. The results imply that green promotion practices have influenced consumer buying behavior except restaurants participating in environmental groups since its mean is below 3.0.

**Table 6: Green promotion descriptive analysis**

| Green promotion | Mean | Std. Deviation |
|---|---|---|
| My establishment publishes eco-friendly attributes of its products on the co-operate website | 4.14 | .724 |
| My establishment promotes its green achievements and credentials | 4.07 | .735 |
| My establishment advertises its eco-friendly products by eco-labeling its products | 4.05 | .923 |
| My establishment publishes all its eco-friendly activities on the corporate website | 3.88 | .740 |
| My establishment collaborates with environmental groups | 1.00 | .00 |

**Cross tabulation Analysis on Green Promotion Predictors and Consumer buying behavior**

The study sought to find out whether green promotion predictors have a significant relationship with consumer buying behavior.

Table 7: Cross tabulation analysis of Green promotion analysis

| Variable | $x^2$-value | Df | P-value | Linear by linear Association |
|---|---|---|---|---|
| Eco-labelling | 148.032a | 45 | .000 | .000 |
| Eco-advertisement | 240.112a | 90 | .000 | .000 |
| Eco-branding | 152.323a | 45 | .000 | .000 |

From the analysis, at 5% significant level the results show the P value for eco-labeling, eco-advertisement and eco-branding as follows: 0.000, 0.000, 0.000 and 0.000 respectively. Thus, P<0.005 hence concludes that there is indeed a strong significant association between eco-labeling, eco-advertisement and eco-branding with consumer buying behavior. The results indicate that there is a weak linear by the linear association between eco-labeling, eco-advertisement and eco-branding with consumer buying behavior since their p-values which are: 0.000, 0.000, 0.000 respectively are further from 0.05. Furthermore, eco-advertisement had the highest significant association with consumer buying behavior since it has the greatest Pearson chi-square static compared to eco-labeling and eco-branding.

**Correlation analysis of the relationship between green promotion predictors and consumer buying behavior**

The researcher sought to find out the strength of the relationship between green promotion and consumer buying behavior.

Table 8: Correlations

| | | Green Promotion | Consumer buying behavior |
|---|---|---|---|
| Green Promotion | Pearson Correlation | 1 | .987[**] |
| | Sig. (2-tailed) | | .000 |
| | N | 56 | 56 |
| Consumer buying behavior | Pearson Correlation | .987[**] | 1 |

| | | |
|---|---|---|
| Sig. (2-tailed) | .000 | |
| N | 56 | 56 |

**. Correlation is significant at the 0.01 level (2-tailed).

From the analysis, the outcome shows a p-value of 0.00 hence there is indeed a positive relationship between green promotion and consumer buying behavior. Furthermore, the study indicates a correlation co-efficient of 0.98 which implies that there is a very strong significant relationship between green promotion and consumer buying behavior since the correlation co-efficient is closer to 1. Therefore, there is indeed a strong positive significant relationship between green promotion and consumer buying behavior. This study implies that restaurants promoting their green aspects have a significant influence on consumer buying behavior.

**Qualitative Analysis of the influence of green promotion on consumer buying behavior**

A further qualitative analysis using NVIVO was undertaken in order to determine the role of green promotion on consumer buying behavior. A node analysis shows that green promotion has an influence on consumer buying behavior since it has a frequency coding reference of 6. These results are in agreement with the correlation analysis and descriptive analysis of structured observation schedules' results that indeed green promotion has a positive influence on consumer buying behavior.

Table 9: Node matrix analysis of green promotion and consumer buying behavior

| Objective | Coding references count |
|---|---|
| Green Promotion | 19 |

A further Text search Query was conducted and the results are as shown in word tree Figure 2.

Word Tree Text Search Query Results for green promotion and consumer buying behavior



Figure 2: Word Tree Text Search Query Results for green promotion and consumer buying behavior

*Word Tree analysis shows that green restaurant promotion influence consumer buying behavior since the respondents from the secondary sources of data indicated that restaurants which utilized all green marketing activities designed to attract environmentally conscious consumers by :promoting the green activities of the restaurant, by creating awareness among consumers through emphasizing the green products they are offering through green product labelling, green advertising through social and mainstream media and aggressive green branding leads to high sales turnover rate because they build a restaurants' green image on consumers' minds and attract green market niche.*

Table 10: Summary of Hypothesis Testing

| Null Hypothesis | Test done | Verdict | Results |
| --- | --- | --- | --- |

| | | | |
|---|---|---|---|
| $HO_1$: Green promotion has no significant contribution to the consumer buying behavior of 4-5-star restaurants in Nairobi County, Kenya. | $HO_1$, P-value $0.001 < 0.05$ | **(HA$_1$) was accepted** ($HO_1$) was rejected | There is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County |
| $HA_1$: Green promotion has a significant contribution to the consumer buying behavior of 4-5-star restaurants in Nairobi County, Kenya. | $HO_1$, P-value $0.001 < 0.05$ | **(HA$_1$) was accepted** ($HO_1$) was rejected | There is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi County |

The findings presented a p-value of (0.001) which was less than 0.05 as shown in table 2.0. The alternative hypothesis was accepted while the null hypothesis was rejected, indicating that, there is a significant relationship between green promotion and consumer buying behavior in 4-5-star restaurants in Nairobi City County, Kenya. This means that, consumer buying behavior are influenced by green promotion in restaurants in 4-5-star Nairobi County, Kenya.

## CONCLUSIONS AND RECOMMENDATIONS

The objective of this study was to determine the relationship between green promotion and consumer buying behavior in 4-5- star restaurants in Nairobi County, Kenya. The findings showed an R2= 18%, df=1 and p=0.001<0.05 indicating that indeed green promotion have a positive significant effect on consume buying behavior in 4-5-star restaurants in Nairobi County, Kenya. This implies that consumer buying behavior is influenced by green promotion in 4-5-star restaurants in Nairobi County.

Based on the findings of study, the following conclusions were made: Green promotion contributes significantly on consumer buying behavior in 4-5-star restaurants in Nairobi County; and Green promotion design has the greatest influence on consumer buying behavior compared to the green ambiance and green packaging

The study recommends that; restaurant owners should come up with green promotion since they have a positive significant effect on the buying behaviors of the consumers, and restaurant

management should put more efforts in green promotion design since it's a green attribute that offer direct experience opportunity to restaurant consumers with the most significant influence on consumer buying behavior as compared to green ambience and green packaging and moreover so as so as to enhance their income and obtain a green image.

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Board Structure and Stakeholder Confidence: A Review and Interogation of Literature

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## Abstract

The board structure is argued to have implications on corporate governance practices and dispense of organizational mandates and overall stakeholder confidence. Stakeholder confidence, which is the trust and assurance of the shareholders, employees and the general community, is an imperative element for creating a long-term value and winning in any organization. This paper interrogates the existing literature on the nexus between board structure and stakeholder confidence. The theoretical frameworks like Agency Theory, Stakeholder Theory, and Institutional Theory offer insights into the principles through which board structure relates to the level of stakeholder confidence. Empirical studies reviewed have depicted several significant components of board structure, such as leadership positions, committee structures, board diversity, and tenure, and their association with the evaluation of governance, depending on the stakeholders. The existing literature points out that boards with structure that are well-defined with respect to the distinctiveness and autonomy from the management are the ones that tend to attract more interests and trust from the stakeholders, and the executive board committees with independence mechanism and diversified composition helps to grow the stakeholder confidence and trust more. It is further revealed that boards that focus on the independence of oversight mechanisms as well as diversity creates a more substantial trust among stakeholders. It is evident from empirical literature that boards with independent oversight functions and teams with diverse member compositions are more likely to gain and retain stakeholder trust. However, the divergent views which exist in theoretical frameworks point one to the fact that longitudinal studies and cross-national comparisons are required to discover the social and institutional influence on stakeholders' evaluation of board structure.

**Keywords:** *Board Diversity, Board Structure, Corporate Governance, Stakeholder Confidence.*

## INTRODUCTION

### Background

The board structure includes a board of directors that make-up of a corporation or organization and comes with policies about the organization and policies for board operations (Briano-Turrent, 2022). The board of directors is a significant factor in corporate governance because it is mandated by the management, and gives tactical direction of the company on behalf of shareholders or investors. Through the years, the progress in corporate governance has been catalyzed by multiple regulatory reforms and instances of corporate scandals. Meaningful

regulations followed such as Sarbanes-Oxley Act, United States (2002) and the United Kingdom's Corporate Governance Code, as of (2018) which demanded a strict adherence to transparency and the strengthening of the internal control and boosting of the board's independence. The purpose of these reforms was to create a healthy business environment in the market and to prevent a repeat of the corporate misconduct and financial mismanagement by policing the activities of promoters and investors. For instance, financial scandals such as the Enron and WorldCom debacles in the early 2000s were the key drivers that facilitated the evolution of corporate governance by exposing the weaknesses in the existing governance structures and leading to calls for reforms (Tutu, 2020). Although this kind of scandal is certainly not new, there has been a renewed interest in the mechanisms that can effectively curtail managerial discretion over sensitive company issues that can have an impact on the welfare of the stakeholders. At the same, time, and especially after some well-publicized company failures in the late 1980s/early 1990s, numerous sets of recommendations on corporate governance issues have been published worldwide and adopted, in particular, by many stock market regulators since the seminal Cadbury (1992) report in the United Kingdom.

Changing powerful stakeholder's expectations, appearances of new markets in the world have impacted on the evolution of the corporate governance. The World Bank's report on "Corporate Governance: According to "Making Corporate Governance Work: A Framework for Implementation" (2015), adaptive governance structures taking all Environmental Social Governance issues into account ought to be provided. Such a holistic approach to the governance is widely known as an indication of an understanding where all the company's

activities at the operational level, restart structure and long-term creation of value must be connected.

Board diversity and inclusion have emerged as focal points in contemporary corporate governance discourse, as highlighted in report by the McKinsey & Company's "Gender Diversity on Boards: A Global Perspective", which was the title of my college essay that I submitted in the year 2021. These surveys support gender-inclusive boards and point to the fact that diversity delivers more profits, design, and risk better performances. In addition, the inclusion of Environmental Social Governance factors in corporate governance frameworks is equally important and favorable as the institution of ethical investment tools. For example, the United Nations Principles for Responsible Investment Annual Report (2019) highlights the necessity for Environmental Social Governance integration to those who desire a sustainable business plan

that ultimately fosters long-term value generation. More firms tend to embrace Environmental Social Governance reporting and disclosure within their financial reports as a way for enhancing transparency, getting attention from responsible investors, as well as reducing risks linked to environmental and societal matters.

The transformation of corporate governance reflects the new paradigms in the economic, social, and political frontiers. The debate around corporate governance has seen a remarkable shift, from traditional theories that emphasize shareholder primacy to contemporary ones that advocate for a stakeholder-centric approach (Katelouzou & Zumbansen, 2020). The emergence of stakeholder theory has contributed to the expansion of governance beyond shareholder wealth maximization to a more holistic stakeholder interests' recognition and sustainable value creation.

Technology is playing a pivotal role in corporate governance nowadays. With the integration of technology, there has been a significant shift in the way governance processes are carried out, such as using data analytics for making decisions or incorporating blockchain technology for shareholder voting (Benvenisti, 2018). As a result, traditional governance norms are continuously evolving. While technology brings benefits like enhanced transparency, streamlined operations, and improved engagement, it also poses challenges like safeguarding against cyber threats, protecting data privacy, and mitigating algorithmic bias.

## Board Structure

This concept of board structure and stakeholder confidence has emerged as critical area of study in the field of research as well as real-world business management (Heath & Norman, 2004). The topic of corporate boards has been hotly debated, particularly regarding their composition and level of independence. Many are calling for a more diverse, inclusive, and independent board to ensure effective oversight and strategic guidance (Rhode & Packel, 2014). This has led to discussions about optimal board structures, the role of independent directors, and the importance of board refreshment.

The composition of the board of directors, including the diversity among its members in terms of skills, experience, and backgrounds, is a key factor in whether the board performs well in decision-making and oversight (Rao & Tilt, 2016). A board that is diverse in terms of the areas

of expertise of board members will enhance strategic decision-making and reduce the risk of groupthink. A board of diverse people promotes innovation, stimulates productive debate, and enriches the stakeholder interests' representation process.

The board structure is a determining factor of the corporate governance mechanisms. The existence of independent directors, board committees, and leadership positions like the chairperson and Chief Executive Officer is as important as any other factor that influences the accountability and transparency of an organization. The independent directors act as a way of governance to management decisions, thereby protecting the rights of shareholders and stakeholders (Priscilla, 2022). Board committees, such as audit, compensation, and nomination committees, act as a platform for specialized oversight and decision-making in critical areas. They subject corporate governance processes to rigorous scrutiny and accountability. Good leadership roles, such as the change of the chairman and the Chief Executive Officer, can spread power, avoid conflicts of interest and promote responsible decision-making at the top level of the organization.

## Stakeholder Confidence

Stakeholder confidence refers to the degree of trust, assurance, and belief that stakeholders has in the integrity, competence, and moral character of the organization (Ogbor & Ugherughe, 2018). This group comprises of the shareholders, employees, customers, suppliers, creditors, regulators, and the wider community. It represents the competence of the organization to achieve its commitments and meet the expectations of the stakeholders for long-term sustainable value creation (Crane, 2020).

Furthermore, the trust and loyalty of stakeholders greatly impact a company's performance and competitiveness. A strong focus on engaging with stakeholders, being transparent, and holding oneself accountable can lead to increased trust, loyalty, and a positive reputation (Taghian et al., 2015). On the other hand, companies that ignore stakeholder concerns or prioritize quick profits over long-term sustainability run the risk of damaging their reputation and facing consequences (Freeman et al., 2007).

## Statement of the Problem

The debate around the board structure and stakeholder confidence presents a more daunting task to thoroughly investigate the workings of corporate governance systems. While the theoretical synthesis including agency theory, stakeholder theory, and institutional theory offer vital insights, there still persists a divide in integrating these frameworks so as to have a comprehensive understanding of what makes up the board structure and how they affect stakeholder confidence. Thus, the aim of this paper is to interrogate theoretical frameworks and empirical research in order to suggest a model on how board structure affects stakeholder confidence. This paper integrates different theoretical frameworks in examining the roots of board structure and their role in sustaining stakeholder confidence. Moreover, an empirical review is conducted on the twofold influence of board structure, especially tenure and diversity, and stakeholders' perceptions of board structure effectiveness.

## METHODS AND MATERIALS

A systematic search has been pursued along with a review of literature on board structure and stakeholder confidence. In order to ensure a thorough coverage, conducting a comprehensive critique of journal articles, books, and research reports published between 2014 and 2024 were done. This period was designed to include studies conducted in the present and recent years.

Research by Hossain and Hammami (2017) in the Middle East, by Khan et al., (2019) in Europe and by Omondi et al., (2020) in Africa included systematic searches using comprehensive search strategies to identify relevant literature. They combined the original research methods of the past by using a variety of electronic databases, and adopting advanced search techniques to make sure the literature is extensively covered. For the purpose of finding the appropriate research, the efficient databases, like PubMed, Google Scholar, and Web of Science were used. A mix of keywords such as "board structure," "stakeholder confidence" and "corporate governance" was applied in the search strategy to cover all aspects by disparity. The retrieved ones were going through the screening for their relevance to the research goals with the use of premade criteria. Selected studies were evaluated carefully in order to determine the extent to which they are methodologically sound, the evidence they are based on, and their contribution to the existing knowledge base (Hopia et al., 2016). Along with, increasing method as well had used for identifying more facts from references lists of retrieved articles.

The synthesized literature was reviewed for extracting key insights, unearthing common themes, and noting any trends or variations in outcomes across studies. Through this methodical process the article seeks to present the readers with a thorough analysis of the literature concerning the board structure and stakeholder confidence, which should contribute bringing corporate governance dynamics into sharper focus (Hoppmann et al., 2019).

## RESULTS AND DISCUSSIONS

### Theoretical Literature

The landscape of board structure and stakeholder confidence is the subject of many theories that shed light and find a place in organizational structure and practices. Agency theory, stakeholder theory, and institutional theory are three extant theories that are discussed independently. Since each theory is very distinct from the others, they all provide fresh and intriguing perspectives on the issues of who is in charge and how those in lower positions are kept in check.

### *Agency Theory*

The agency theory is the underlying principle of corporate governance that addresses the relationship between shareholders, represented by principals, and managers known as agents. According to this theory, the conflicts of interest are born when agents rather than principles' interests get the most prioritized (Löhde et al., 2022). Hence, the agency theory mainly attempts to design mechanisms to promote the parallel interests of the principals, as the shareholders, and the agents, as the managers, recognizing the inherent conflicts between them and, therefore (Marashdeh et al., 2022). An illustration of the above argument is found in executive compensation practices where companies give incentive schemes to managers which require the managers to work in the best interest of the shareholders.

Initially introduced in 1976 by Michael C. Jensen and William H. Meckling, in their seminal paper "Theory of the Firm: 'Ownership Structure, Agency Behavior, and Agency Costs', early years of the theory marked the beginning of its growth. Jensen, the colossal figure of the agency theory, insists on the effect of producing the best results by using performance-based rewards and stock options. He implies that this will get the manager to have the same interests with the

shareholders. While Meckling takes another turn into agency theory and clarifies the fundamental assumptions that lead to agency costs and the resultant inefficiency of the organization, the costs include monitoring and residual loss among others. Besides Jensen and Meckling (1976), other scholars such as Bengt Holmström, Oliver E. Williamson, and Eugene F. Fama have made outstanding implication of agency theory to the application. Holmström's work on theory of incentives and the firm provides the relevant stakeholders with the insights as to how the clearly designed contractual rules which include contracting parties' intentions are the key to addressing the agency problem. In addition, Williamson's transaction cost model assists in the choice of governance structures that resolve conflicts that usually arise and reduce the associated costs.

Although the agency theory has not been free from criticism, it has closely worked with the corporate governance. It is often claimed that it is not an adequate theory for the rationalization of the organizations' complex relationships and their social and relational factors. Furthermore, agent theory critics argue that agency theory only aims to regulate and check agent behavior while ignoring the positive dynamics of trust and cooperation in principals-agents' relationship.

Agency theory has not only developed beyond its original principal-agent framework to occupy various organizational fields such as corporate governance, executive compensation, financial economics and organizational behavior but also extended to other complex areas such as the development of social capital. This evolution emphasizes the vibrancy of the theory to guide managers' choice of strategies and policy decisions in a bid to increase organizational performance and accountability. Subsequently, agency theory does just that to provide a theoretical framework in order to analyze and properly handle conflicts of interests which are a feature of principal-agent relationships in organizations.

*Stakeholder Theory*

Stakeholder theory, a key concept within the capitalist perspective, assumes that any organization is connected to its stakeholders such as suppliers, customers, employees, investors, and the community that is located at the local level (Harrison & Wicks, 2013). This concept was introduced in the 1980s and has since then undergone modifications through several works of scholars and practitioners alike (Freeman, 2010). However, there is no one individual

responsible for the invention, the key contributors have entirely contributed to the development of the idea.

Robert Edward Freeman is notably recognized for articulating stakeholder theory in his book "Strategic Management: An article entitled "Can There be a Place for Ethics in Decision Making" authored by (Harrison, 2015) in 1984. Unlike those who regard shareholders as the sole primary stakeholders, Freeman proposes that the employees, customers, suppliers, and community also deserve recognition as the principal stakeholders (Bonnafous-Boucher and Rendtorff, 2016). His focus on participative leadership at the organizational level suggests that the organization is made up of a network of social entities such as employees, investors, and customers that should be viewed as equal stakeholders, which, in turn, advocates for collaborative leadership.

Ian Mitroff, in turn, has developed the moral dimension of the relations between stakeholders and the management functioning (Tavares, 2021). He points out that the stakeholders not only form part of physical investment, but also social investment where they play an important role in managing impressions, beliefs and expectations that enable trust and credibility of the enterprise, which in turn, set up the base for ethics and integrity.

Furthermore, theorists like Thomas Donaldson, Lee E. Preston and Archie B. Gelton have been crucial in the development of stakeholder theory as they have established frameworks and undertaken practical research (Freeman et al., 2010). In 1995, Donaldson and Preston published an outstanding contribution to the stakeholder theory, entitled "The Stakeholder Theory of the Corporation," which is vital in understanding the role and importance of stakeholder theory in corporate governance and accountability studies (Donaldson & Preston, 1995).

Initially, stakeholder theory was a concept that was meant to bring into focus all the interested parties in any decisions that were made. Today, stakeholder theory has been redefined to reflect the relationship of all the stakeholders with the environment of the organization (Bonnafous-Boucher & Rendtorff, 2016). Researchers have studied various elements of stakeholder theory, such as the process of identification, priorities, involvement, and relationship creation as well as value sharing between stakeholders in different industries and organizational settings (Crane & Ruebottom, 2011). Therefore, while stakeholder theory has moved the scholarly discussion

forward and directed entrepreneurial ventures and corporate strategies, especially in the areas of corporate social responsibility, sustainability, and stakeholders' engagement (Jamali, 2008).

At the core of the stakeholder theory is its emphasis of the role of each identified stakeholder, thereby attributing a lot of importance to considering the stakeholders' interests in the governance arrangements as well as minimizing the conflicts of interest (Dmytriyev et al., 2022). This approach which is inclusive in nature that involves both internal and external stakeholders' makes the stakeholders interdependent with the corporations. Hence, they mutually design strategies that are holistic and sustainable for the environment and in the long run, sustain the organization.

*Institutional Theory*

Institutional Theory, one of the views of organizational sociology, was coined in the 1970s and 1980s and sought to study the way external environments affect organizational behavior and actions (Meyer and Rowan, 1977; DiMaggio and Powell, 1983). DiMaggio and Powell laid the foundation for Institutional Theory, introducing the concept of institutional isomorphism in their seminal work "The Iron Cage Revisited: "Deinstitutionalization and Collective Rationality: A study of Implosion in East Germany" (1983). They thought that the fact of the existence of someone being legitimate and is at peace with the uncertainty of existence is that people stick to the norms, way of life and the practices of the society. William Raymond Scott further enriched this framework in his 1987 publication "Institutions and Organizations," unveiling an exhaustive analysis of institutional perspectives on organizations. Scott's theory puts an institutional focus on the way organizations behave. There are three basic institutional categories - regulatory, normative, and cognitive - in which each of them is effective in terms of affecting organizational behavior in different ways. It is argued that in order to be functionally legitimate an organization adopts structures, processes, and norms not only to meet the needs of its environment, but also to demonstrate its legitimacy and its acceptance within its institutional environment (Powell & Colyvas, 2008). This external impulse bends the enterprises to fit into the schemes of the established social ethics and culture, which may not be in consonance with rationality considerations. The theory provides an understanding of the role of regulatory regimes, self-regulating mechanisms, and norms of society in determining organizational behaviors (Chiu, 2018). Firms undertake this through compliance with the legal requirements, embracing the

best practices in the industry and complying with the social responsibilities. Organizational systems that match the predominant norms and values are capable of developing trust among stakeholders, which is one of the factors that boosts the reliability and reputation of that organization.

DiMaggio and Powell (1983) were the first to propose institutional isomorphism, emphasizing the roles of social norms in organizational behaviors. W. R. Scott (1987) developed the notion of institutions further by classifying them as the regulative, normative, and cognitive types to highlight their contribution to organizational architecture and process. Chiu (2018) stated that regulatory regimes and societal norms were two major determinants of an organization's behaviors, and that they heavily shaped how organizations conducted themselves, and whether they were considered legitimate or not.

Bowring (2000) suggested that Institutional Theory has been subject to criticism for its deterministic approach, because it purports that organizations adjust their behaviour to institutional forces without taking account of rationality. Critics doubt that this theory does not give agency of organizations and is not capable to strategic actions in formation of institutional environments. On the other hand, there is also a situation where institutional theory works perfectly, for example, in cases where institutions change their structures and practices in line with the needs of regulation as well as social norms and as a result, they get more legitimate and reliable. Firms that follow institutional governance practices in harmony with the existing norms and values are likely to enjoy stronger stakeholders' relationships and good credit standing (Dinh & Calabrò, 2019).

### Empirical Literature

In a recent study conducted by Wang and Li (2017) in China, the connection between board leadership structure (specifically, the distinction between CEO duality and separate CEO and board chair roles) and stakeholder perspectives on the effectiveness of governance were investigated. Their findings show that companies with separate CEO and board chair roles are viewed more favorably by stakeholders, as this structure provides a stronger system of checks and balances and improved accountability. In a similar subject, the study conducted by Johnson et al., (2019) in United States conducted a study on the influence of board committee structure on stakeholder trust, with a specific focus on the presence of specialized committees such as

audit, compensation, and nominating/governance committees. The results demonstrate that organizations with a well-defined committee structure and actively engaged committees are perceived as more reliable by stakeholders.

Smith and Johnson's (2020) investigation focused on the relationship between board structure and the stakeholder confidence in the US pharmaceutical business. They used logistic regression to conduct their quantitative research on a set of publicly listed pharmaceutical businesses. The study found that board diversity is a positive factor that has a clear correlation with greater stakeholder confidence, particularly among investors and the regulatory bodies.

Chen et al. (2021) scrutinized the relationship between the board independence and stakeholder confidence among Chinese manufacturing enterprises. Longitudinal studies and structural equation modeling were used here after collecting data from the annual reports and the interviews. The investigation concluded that higher degrees of board independence were linked to a stronger backing by the stakeholders, in particular employees and local communities.

Garcia and Rodriguez (2022) studied the connection of board diversity and stakeholder confidence in the context of the European banking sector. Adopting a mixed-methods approach, which included surveys and content analysis of governance reports, the researchers discovered that banks with diverse boards were found to be have higher levels of stakeholders' confidence, particularly among shareholders and regulatory bodies.

Kim and Lee (2019) investigated the impact of size of board on stakeholder confidence in technology companies listed in South Korea. Based on a quantitative assessment of financial data and corporate governance disclosures, they concluded that the smaller boards are tied with increased stakeholders' confidence, especially among customers and suppliers.

Wang and Liu (2020) carried out study on board leadership structures and of stakeholder confidence in Chinese telecommunications industry. By using a sample of publicly traded telecom companies and regression analysis, they discovered that companies with separate roles as chair of the board and CEO have greater levels of stakeholder confidence. This figure is especially high among investors and government agencies.

Nguyen et al., (2021) examined the relationship between the boardroom expertise and stakeholder confidence in Vietnamese retail companies. In their qualitative research and interviews with board members and stakeholders, they discovered that a board with industry-

related experience builds confidence among the stakeholders, especially consumer and government regulators.

In a study carried out by Gonzalez and Martinez (2019), the impact of having board tenure on confidence of stakeholders was analyzed in the Latin American energy companies. Their study and panel data responses revealed that moderate board tenure was a beneficial element in enhancing stakeholder confidence, whereas excessive tenure could lead to a reduction in confidence, especially among environmental groups and local communities.

Zhang and Li (2020) examined whether board transparency could affect the trust in Chinese manufacturing firms' stakeholders. They selected a sample of publicly listed companies and conducted content analysis of corporate governance disclosures. It turned out that the deeper they went in the board operations and decision-making processes, the higher stakeholder confidence, especially among shareholders and workers.

The study of Khan et al., (2021) focuses on the effect of board remuneration on stakeholder confidence of the financial institutions in Pakistan. By conducting a quantitative analysis of executive compensation data along with stakeholder surveys, they came to know that the policies which incorporate transparency and performance have a positive impact on stakeholder confidence, especially for the shareholders and regulatory authorities.

Huang and Wang (2019) found out that the accountability mechanisms of the boards increase the stakeholders' confidence in Taiwanese technology firms. The board accountability mechanisms such as regular performance evaluations and disclosure practices have been instituted using the mixed-methods approach, which includes surveys and archival data analysis by the researchers, they found that these mechanisms increase stakeholders, particularly investors and customers, trust.

Li and Wu (2020) studied the performance of gender board diversity and shareholder confidence in the Chinese financial institutions. By means of a longitudinal study and performing regression analysis, they discovered that the higher the gender diversity on the boards is the better for stakeholder confidence, especially among female clients and government regulatory bodies.

Santos and Silva (2021) conducted the effect of the board education and training on the shareholder confidence in the Brazilian telecommunications companies. By conducting

interviews with board members and examining governance reports, they concluded that frequent education and training programs for board members build stakeholder trust, especially of investors and regulatory bodies within the industry.

Tan and Lim (2019) in their article on how board cultural diversity influences stakeholder confidence in Malaysian hospitality industry. By combining survey and content analysis of corporate governance reports, they found that the boards which have diverse cultural backgrounds are more likely to strengthen stakeholder confidence, especially among the international customers and governmental authorities.

According to Xiao and Zhang (2020), the authors examined the association between board risk oversight and stakeholder confidence in Chinese financial service firms. By means of a quantitative analysis of board committee structures and surveys of stakeholders they concluded that risk governance mechanisms as well as dedicated risk committees have a positive impact on stakeholder confidence, especially in the case of investors and supervisory authorities.

Cheng and Wong (2021) investigated the influence of board communication strategy on stakeholder confidence in Hong Kong retail firms. The authors conducted interviews with a group of board members and content analysis of the corporate communication channels and discovered that effective and proactive communication from boards increases stakeholder confidence, especially among customers and sector analysts.

Additionally, in another study conducted by Chen et al., (2021) in France and Park and Kim (2022) in South Korea looked into how board tenure and diversity affect stakeholder views on board effectiveness and decision-making quality. While there were previous concerns that longer board tenure could harm stakeholder confidence due to worries about independence and complacency, these recent studies suggest that a moderate level of board tenure along with regular board refreshment can actually enhance institutional memory and strategic consistency, ultimately strengthening stakeholder trust.

Furthermore, a study by Muthama et al., (2017) conducted in Kenya, investigated the relationship between board structure and stakeholder confidence in Kenyan firms. Analyzing data from 80 companies, the study found that boards with a balanced mix of executive and non-executive directors tended to foster greater stakeholder trust. Moreover, boards with strong independent oversight mechanisms, such as board committees, were associated with higher

levels of stakeholder confidence, according to a report by the Capital Markets Authority (CMA) of Kenya in 2020.

## Discussion

Agency Theory, Stakeholder Theory and Institutional Theory each give fundamental information about corporate governance to some extent. However, each one has its deficiencies. Agency Theory, although presents a theory of principal agent relationship and the issues of conflicts of interest, mostly concentrates on the alignment of the interests of shareholders and managers. While it may adopt a simplified perspective of organizational dynamics, evoking them to a binary relation, other stakeholders may be absent such as employees, customers, and the community.

The Stakeholder Theory, however, highlights the necessity of involving other stakeholders in the decision-making process whose interests exceed those of the shareholders and encourages a more integrated approach to governance. Nevertheless, the extensive outlines can also cause its implementation problems because you can sometimes have subjective problems into deciding and setting their interests in different way and in different context. Institutional Theory marks the shift of focus from purely organizational behavior to how organizational behavior is molded by wider institutional environments and general societal norms. While it explains the way that external forces set the tone for organizational governance, the former could also be the reason why leaders and individuals in organizations do not receive enough credit for the changes they make from within. However, all these theories are based on a common ground that management has to be set in order to provide for the process of conflicting interests aligning and assuring accountability. Having said that they all realize that to build an inherent ambience of transparency, trust and moral principles, organizations needs to follow a number of rules and systems.

Additionally, they maintained that organizations are functionally interrelated with external environments, be it through interactions with shareholders, stakeholders or representatives of conformist institutions. It shows that a moderate approach should be adopted that aligns the governance practices that are used internally with the external demands. Differently, these theories emphasize different groups of stakeholders and their particular interests. On the other hand, the Agency Theory lives up to the principles of the shareholders whereas the Stakeholder

Theory emphasizes the interests of a wide range of stakeholders. This always is so, thus, the type of approach to leadership can be different, as well as to governance and decision-making.

Furthermore, contrasting Agency Theory and Stakeholder Theory which usually present the organizational behavior from a normative standpoint, Institutional Theory gives a more factual explanation of how organizations assimilate into institutional constraints. This theorisation provides an opportunity to choose different theories which in the end contribute to the type of interventions proposed for the improvement of governance. While the theoretical literature reviewed raises essential implications of governance, different views are also possible concerning its focus, contextuality, approaches, and outcomes. One can point to the fact that the overwhelming majority of studies invests in this connection or that other kind of connection, which in turn might neglect other factors contributing to good governance.

Empirical studies have shown to be a reliable source for examining the cause and effect between board structure and stakeholder confidence in different areas and regions. Such as studies done in China by (Wang & Li, 2017), in the United States by (Johnson et al., 2019) and in Europe by (Garcia & Rodriguez, 2022), they show that the companies with diverse boards are favored more by the stakeholders, which results in more trust from the investors, regulatory bodies and the community.

Similarly, studies in countries like South Korea (Kim & Lee, 2019), Taiwan (Huang & Wang, 2019), and Vietnam (Nguyen et al., 2021) demonstrate that board attributes such as independence, transparency, and knowledge signifies consistently high stakeholder confidence. Also, case studies in companies like pharmaceuticals (Smith & Johnson, 2020), telecommunications (Wang & Liu, 2020), and retail (Cheng & Wong, 2021) provide evidence that proper board communication and risk monitoring can work to enhance stakeholder trust.

Moreover, recent studies prove the myth about the short term of boards where it is found that moderate period of tenure and diversity can improve the confidence of stakeholders (Gonzalez & Martinez, 2019; Tan & Lim, 2019). These outcomes underscore how board interactions can be complicated in terms of stakeholder perception and therefore call for well-balanced governance structure, and strategic communication strategies.

One of the major methods that are followed in the empirical literature review is the quantitative analysis which is a statistical technique used to measure the relationship between the board characteristics and the stakeholder confidence. China, the United States and Europe studies are done by regression analysis and structural equation modeling to measure effect of variables such as diversity of board, independence and transparency on stakeholders' perceptions. Through quantitative analysis we can detect these patterns and associations within the large data sets and we can use this as the evidence which will show us the factors influencing stakeholder confidence.

The application of qualitative research methods is of great importance to the supplementing of quantitative analysis that yields to the depth of comprehension of the interworkings of board governance and stakeholder opinions. Qualitative studies were performed in countries such as Taiwan, Vietnam, and Brazil by means of applied interviews, focus groups, and content analysis to examine stakeholders' views on board work and its impact on trust. Qualitative research offers an opportunity to collect information that is more detailed and contextual compared to quantitative measures, hence enabling the researcher to understand the perspectives and perceptions of the stakeholders beyond what can be obtained through quantitative measures.

In addition, approach using mixed-methods implement both quantitative and qualitative methods to increase knowledge of board structure and improve stakeholder confidence. Whereas studies that apply mixed-methods approach like those implemented in South Korea, Kenya, and Hong Kong combine survey data with interview, archival data analysis, and content analysis to perform triangulation and validation, it becomes possible to validate the findings. The triangulation of data from various sources by researchers can improve the credibility and reliability of their outcomes, which in turn would offer a more comprehensive analysis of the relationship between board dynamics and stakeholders' perceptions. Lastly the majority of empirical studies on board structure practices are concentrated in developed countries, primarily in Europe and North America, indicate the significance of comprehending governance dynamics in these regions. Recent years have seen a shift in the focus of study, resulting in the absence of knowledge about the governance practices in emerging markets like Asia, Africa, and Latin America. Furthermore, study findings may in some cases be inconclusive or contradictory, reaffirming that governance phenomena are complex.

## CONLUSIONS AND RECOMMENDATIONS

This paper has explored the intricacies of Agency Theory, Stakeholder Theory and Institutional Theory, three of the most important theories in corporate governance. However, while each theory provides with a valuable knowledge, they also come with their own limitations. The Agency Theory, which addresses the alignment of shareholders and managers, is usually viewed as a simplistic approach to organization dynamics that overlooks the interests of other stakeholders. Stakeholder theory, however, does not stop at the boardroom but considers a broader spectrum of stakeholders but faces the challenge of defining and prioritizing their interests. Institutional Theory accentuates external factors affecting organizational behavior but can be perceived to be less focused on internal initiatives which strive to improve governance.

However, the theories in combination stress the significance of good governance systems that would be used to solve the disputes and make relevant parties accountable. They bring to the forefront the relevance of transparency, integrity, and ethics as core organizational values. Empirical research has shown that the relationship between corporate board structure and stakeholder confidence is deeper and goes beyond just including factors like diversity, independence, transparency, and communication. On the contrary, the researches usually focus on developed countries only, which in turn leads to gaps in comprehension of governing mechanisms that exist in developing markets.

This paper makes various suggestions based on the review and synthesis of the existing literature. The use of mixed methods research, which integrates quantitative and qualitative methodologies should be adopted by researchers. This approach entails using the strengths of each technique in a way that keeps the downsides at bay. Through combining the data from several sources and using different research methods, mixed methods research provides the view which is holistic and complex phenomenon more comprehensive.

The gap between developed and emerging markets should be a priority for future research and it can be bridged by comparison across various contexts. Furthermore, the current studies have more bias towards the quantitative approach and there is need to embrace qualitative research to complement the quantitative analyses and capture the real insights of the stakeholders.

Adopting an Integrated Governance Approach. Integrating Agency Theory, Stakeholder Theory, and Institutional Theory into an organization's governance, shareholders, stakeholders, and institutional forces have to be balanced for the individual interest and the interests of the

organization. This method entails identifying relations among different governance mechanisms and coordinating them with both the internal organizational purposes and the external societal anticipations. Through the application of principles from various theorems into the governing practices of the organization, organizations will be able to improve transparency, accountability, and stakeholder trust. As a result of this, a generic model of the board structure and stakeholder confidence is proposed as follows:

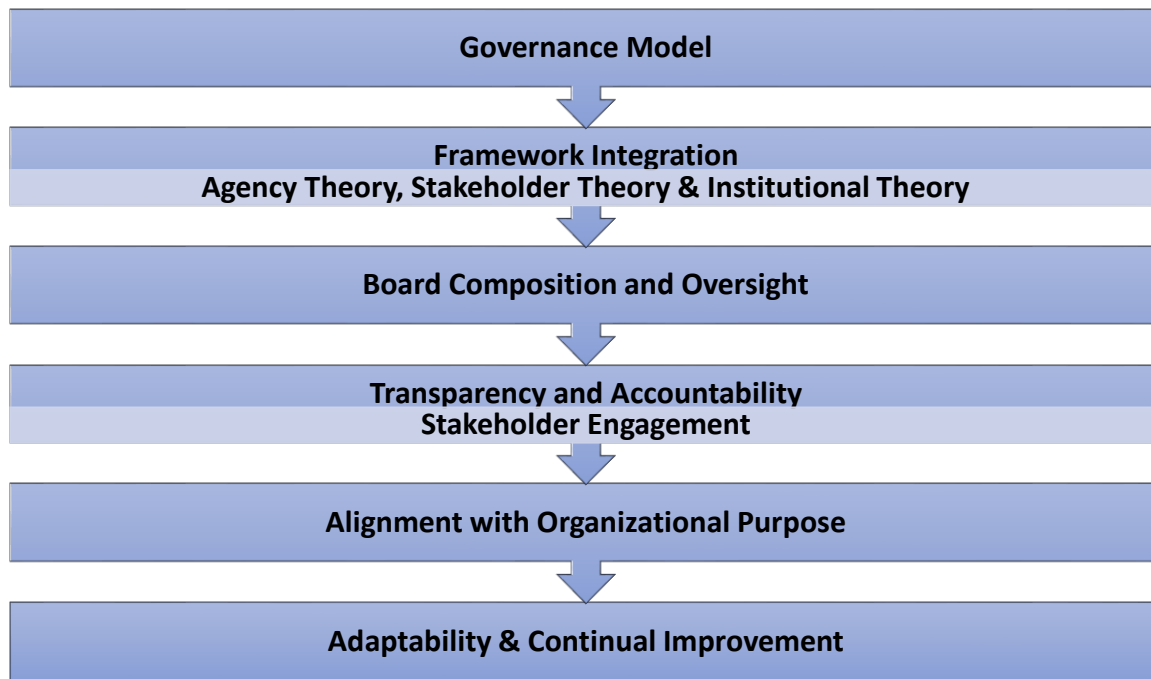**The Board Structure-Stakeholder Confidence Model**



Figure 1: Board Structure and Stakeholder Confidence Model

Figure 1 depicts the main modules of the model, which include implementing the framework, governance board and supervision, publicity and accountability, stakeholder engagement, alignment with the organization's mission or purpose, and transformability through a continuous improvement. Each component of the corporate governance framework contains an element which helps the organization to gain public trust and confidence in its practices.

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