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Full Length Research Paper

Folk music, tradition and gender stereotypes: A feminist analysis of the work of a Nigerian folk icon

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This research adopts a feminist content analytic framework to examine the portrayal of Nigerian women in the work of Uko Akpan Cultural Group, iconic champions of folk music in south-eastern Nigeria. The purpose of this research is to understand if folk music reinforces gender stereotypes or empowers women by providing them with a legitimate platform to utilize their talents as a source of income and livelihood. To achieve the goal of the research, ten hours of digital content were examined for mentions, images, and the presence of girls and women and the contexts in which they occur in the work of the Uko Akpan Cultural Group. The content included songs, choreography, costume, instrumentation, and public performances spanning several decades and addressing key socio-political and cultural issues. The research demonstrates that while folk music provides a legitimate platform for women to showcase their talents as artists against the backdrop of patriarchal structures, it also reinforces gender stereotypes and narratives of women as subordinate and subservient beings. Folk music can be a viable vehicle for the advancement of women, especially those on the socio-economic and geographic margins of society if new narratives about women are integrated into the artifacts of folk music.

Key words: folk music; folk culture, gender stereotypes, gender and music, Ukokpan, Ukokpanism.

INTRODUCTION

There are two versions of the story, none of which may be accurate. One version has it that in his early days, a renowned folk artiste and cultural icon in southeastern Nigeria, Chief Uko Akpan Ekpo Umanah (1927-2020, and henceforth referred to as Ukokpan), public-shamed a young woman in one of his songs. Upset, the woman insisted that he married her because he had ruined her reputation and rendered her unmarriageable. The other version of the story is that the woman's father was so enraged at the public shaming of his daughter that he forced Ukokpan to marry her.

Research shows no evidence of the specifics of this incident or the outcomes. It is probably one of those urban legends about people in the public eye. This is more prevalent in oral cultures where stories get lost both in translation and in the narrative iterations. Also, fragments of stories and information are often spiced with hyperbole with each re-telling until they get a brand-new life radically different from their origins. Nevertheless, certain aspects of this particular story lend it a veneer of credibility.

First, public shaming in folk songs is common in

Nigeria's folk culture. The tradition is also gendered: women are often public-shamed while men are generally the subjects of praise-singing, another common element of folk music. Second, Ukokpan, like many folk artists in Nigeria, was polygamous. It is, therefore, imaginable that one of his wives would have been the subject of the legend. For our present purpose, the veracity of the story is not critical because even as an urban legend or myth, it provides a metaphor for the complexity in the attempt to evaluate the representation of women in Nigerian folk music. While the issues raised in this article are generalizable to Nigerian women, especially those in rural communities where folk music is a prevalent organizing principle of communal practices and events, this article focuses on the Anaaň women of southeastern Nigeria. The purpose is to interrogate how folk music reinforces gender[1] stereotypes even as it also provides a legitimate platform for women to showcase their artistic talents against the backdrop of patriarchal structures. The research is predicated on the following assumptions.

1) Folk music provides women with a platform for agency, economic independence and social acceptability.
2) Folk music perpetuates women's marginalization by reiterating negative cultural, assumptions, narratives and stereotypes.

These assumptions are reflected in the above anecdote. As agency, the woman examined her position as a 'shamed woman' and determined that her prospects of marriage to an eligible man in the community were slim. She decided that her best option was to insist on marriage to the man who had compromised her reputation. In the second version, to preserve the family's honor, a father forced a man who had publicly shamed his daughter into marrying her. This reduced the woman's position to that of an object of control by two men (her father and the man who had 'disgraced' her in public). This is emblematic of the dual role of the Anaaň woman as an actor-agent and as a subordinate, a thread that runs through Ukokpan's oeuvre. In songs, choreography, costume and instrumentation, women are simultaneously visible and invisible, active participants and marginalized background props. This article examines this duality in the work of Ukokpan to highlight the impact of folk music on attitudes toward women especially those outside geographical and socio-economic mainstreams of society. It studies the 'gender content' of Ukokpanism[2] for references to and portrayal of women in the lyrics, choreography, instrumentation and public performances. It addresses the following research questions:

1) How does folk music intersect with cultural narratives about women?
2) How does Ukokpan's brand of folk music reinforce gender stereotypes in its portrayal of women in Anaaň society?

These questions frame the evaluation of the body of work of Ukokpan, an acclaimed moral authority whose art occurred in a specific sociocultural and political context. He was not reticent in utilizing his art and its popularity to advocate public and private morality and ethics. He also had a significant capacity to mirror or alter attitudes and beliefs on gender relations given the intersections of music, gender and culture. These intersections are discussed in the next section to underscore the imperative to examine Ukokpanism from a gender standpoint. The theoretical and methodological overview follows in the third section. The fourth section features the review of a selection of songs/lyrics, choreography, costume, and instrumentation for mentions and depictions of women and the context in which they occur. The fifth section is a general discussion and analysis of the portrayal of women in the different aspects of Ukokpanism examined in the previous section. The article begins with an overview of the phenomenon of public shaming through songs. This provides some context for an understanding of the centrality of Ukokpan's work in the Anaaň cultural landscape.

Public shaming as entertainment

In an earlier era, public shaming through songs was common among the Anaaň people of southeastern Nigeria and many other parts of the country. More common (at least at the national level) was the praise-singing tradition of folk music in the southwestern part of the country. Public shaming is comparable to gossip columns and sensational tabloid newspaper headlines that go far back to the invention of the printing press when the hypocrisy of religious leaders was published on flyers and distributed to the public. Also, in 17th century England, barbaric acts of public shaming (such as maiming of body parts) declined as the media 'increasingly became the arena in which reputations were forged, damaged, and destroyed' (Green, 2017:13). One can argue that in contemporary times, especially in the age of misinformation through social media and cyberbullying, public shaming is flourishing exponentially.

Public shaming in Annaňland occurred in two distinct forms. One was through a masquerade called Eköň, a repertoire of news and gossip in the community. People were often warned against improper acts such as those involving immorality and unethical behavior to avoid being the subject of the next Eköň outing. The assumption was that nothing was hidden from Eköň, which, like other Anaaň masquerades, was supposedly imbued with spiritual powers and could sniff out every

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[1] Gender is defined here as the relationship between men and women and the societal roles assigned to them on the basis of biological sex.
[2] Ukokpanism is used in this article to capture the totality of Chief Uko Akpan Ekanem's songs/lyrics and the choreographic styles associated with him. However, all mentions of Ukokpan are in reference to the artiste himself.

bad deed in the community. As noted by Assibong (2002), Eköň was a regulatory institution that functioned as modern-day police in its mission to expose and punish corruption and deviancy in the community. The punishment came in the form of public destruction of reputations.

Public shaming also occurred through folk singers who used satire and other tropes to criticize community leaders without fear of reprisal (Knight, 2004). The arena of public performance shielded artists from punishment, perhaps in the same way that the First Amendment protects (public) speech in the United States. Satirical singers made extensive use of the medium of music and public acceptance of their arts to 'perform rites of reversal and rebellion by pouring insults not only on themselves but also on the elders and those who wielded power and authority in society' (Ekanem, 2016:2).

Gold (1997) makes the same observation about female folksingers in the Rajasthani Community in northern India where women are socialized to be meek and subservient in public spaces but find their voices through folksongs and performative satire.

These songs are inhabited by outspoken females who commonly address males directly, often making explicit demands upon them. Other folk performance genres from the same community, including women's stories and men's epic tales, contain frequent examples of bold female voices. (Gold, 1997:104).

In Ukokpanism, these two categories of public shaming coalesce to create a unique form of protest and demand for public accountability and morality. Like the Eköň, Ukokpan demonstrated unique knowledge of societal secrets and deployed them in his songs. As his stature as an artiste grew, his name assumed the same behavior-shaping impact as Eköň did. For instance, people were often cautioned to conduct themselves well (morally and ethically) to avoid being the subject of Ukokpan's next song (*Dioňo nnaňa asaňa mbak Uko Akpan ama usin k'ikwö).* Over time, as the musician's fame transcended the spatial boundaries of his community, the songs became less about the misdeeds of individuals and more about those of social and ruling classes, systems and institutions. He called attention to societal improprieties in lyrics that were more subdued and respectful than those of traditional satirical singers (or those of his former and younger self). Many of his latter songs resonated with a supplicant tone often prefaced with 'Please let me ask you a question' (*Mbök nna ubip mbime ise).* While he wasn't particularly asking for permission, the phrase often signaled that he was introducing an idea, issue or problem on which his audience should reflect or might be offensive to religious or political leaders and groups. These issues were wide-ranging and covered many aspects of life – society, politics and religion. One example is *Ama abo Isua kaa* ('When you ask the passing year to depart'), a song that disparages New Year's Eve conventions of 'chasing away' the passing year. He wondered where the old year was being sent

given that everywhere was inhabited by people who were also busy chasing off the old year. The lesson was that rather than the verbal banishments of the old year to parts unknown, folks should be proactive and take concrete measures to achieve better outcomes in the coming new year.

Over a career spanning more than seven decades, Ukokpan raised similar questions and issues that compelled reflection and action by people across generations, classes, religions, regions and national borders. As noted by Titus (2020), Ukokpan was not only celebrated for his 'commitment to typically African pattern of music' but also for attracting a 'large followership including younger generation' and getting them to think. While he did not set out to be society's moral voice, he inevitably became one because of his talents and the public acceptance they conferred on him. Through his songs, he advocated peace, unity, fairness and social justice. While these values are universal, they also have specific gendered dimensions and are reproduced in the relationships between men and women. The manner through which Ukokpan included or excluded these values in the context of gender is critical to a more robust appreciation of his contribution to humanity and the societal role of folk art generally.

Making the connections: Music, gender and culture

Like all cultural artifacts, music reflects and entrenches societal customs, beliefs and values (Rogers, 2013) but can also create, or at least contribute to, social transformation and radically novel ways of thinking. It is indeed in this aspect of the role of music that we examine how Ukokpanism as a cultural artifact in Annaňland challenges or perpetuates 'traditional gender roles that cast men as rational, strong, protective, and decisive (and) women as emotional (irrational), weak, nurturing, and submissive' (Tyson, 2006:81). 'Tradition' is used here to describe 'elements of culture that are transmitted (language) or to a body of collective wisdom (folk tales) and ... implies continuity and consistency ...' (Longhurst et al., 2016:10). Tradition or culture is often the site of inequality and its production when it justifies negative societal practices. Gender, for instance, is formed within a culture and perpetuated by tradition. This explains why culture is an important research interest for feminist scholars who 'examine the ways in which cultural expectations and assumptions about sex have fed the idea that gender inequality is natural' (Longhurst et al., 2016:24). As noted by Rogers (2013), 'culture can have many meanings, but it typically refers to the values or beliefs that are unique to an individual society … within culture in general, popular culture in particular is defined as anything that is consumed by large audiences of people within a society with the purpose of entertainment' (Bharadwaj, 2007:131).

Indeed, while Ukokpanism is fundamentally an

entertainment platform, it is framed by a notable discourse on politics in its classical definition as the authoritative allocation of values, resources and power in a society (Easton, 1965; Kruschke, 1973) often resulting in conflicts among contesting groups. Ukokpanism challenges various forms of authority (political, religious and moral) by drawing on its legitimacy to public-shame and advocacy for adherence to norms of good behavior in religion, tradition, or basic social norms. Its reach is intensive and expansive over space and time. Several generations (and beyond) of Anaaň men and women may not remember a time when Ukokpan did not feature in the socio-cultural landscape of their lived experiences. What that landscape looks like when viewed through the analytical lenses of gender constitutes a significant part of his legacy and how he challenged or reinforced patriarchy through his arts. One notes that to 'challenge' is a conscious act while 'reinforcement' may be achieved by commission or omission. In other words, the absence of awareness or action unwittingly reinforces or leaves the status quo unchallenged and therefore becomes problematic in circumstances as significant as the advancement of women in society.

Given the connections between various forms of inequality (such as class and race) and culture, the deconstruction – to reject its negative aspects and retain what is valuable – is a good place to start in advocating social change. This is even more so for Ukokpanism, a genre that is deeply embedded in Annaň culture in the language of its lyrics, instrumentation and performative styles (such as choreography and costume). Given its ambassadorial reach (James, 2021), Ukokpanism may be the most singular avenue through which people from other socio-cultural and geographical spaces learn about the Anaaň people. Though its original purpose is entertainment, Ukokpanism also became a medium to understand Anaaň culture, norms and values. Since traditional songs and folk music generally 'perpetuate societal views of women (in ways that attempt) to keep them within gendered roles' (Bunting, 2019:7), there is justification therefore for exploring the ways through which Ukokpanism portrays the Anaaň woman and her role in the society. Bunting (2019) also highlights the power of songs to provide 'insight into specific issues, such as gender and gender norms, and how they have progressed' (3). The representation of women specifically in cultural artifacts can either improve the conditions of women or perpetuate existing norms through 'discrimination on the basis of sex or gender.

Indeed, popular culture is where much of the conversation about sex and gender takes place, or at least the conversation that has social, political, and economic consequences' (Crasnow and Waugh, 2012:9). As Newton (2019) argues 'it's naive to assume that folk music rises above the general inequalities women face day-to-day' (5). The same argument can be made about Ukokpan's form of folk or 'cultural' music.

Looking through feminist lens: Theoretical and methodological framework

A gender-based assessment of Ukokpanism compels the adoption of a critical feminist qualitative approach both as a methodology and as an analytical tool. This approach achieves three interrelated goals. First, it illuminates the relationships between men and women in society and the different roles and expectations assigned to them (Tyson 2006), as well as how culture may unwittingly or knowingly 'embody patriarchal attitudes or undercut them, sometimes both happening within the same work' (Napikoski, 2021:2). Second, it highlights how 'literature (and other cultural productions) reinforce or undermine the economic, political, social, and psychological oppression of women' (Tyson, 2006:83). And third, it advances an understanding of how aspects of culture are either inherently patriarchal or challenge explicit or implicit negative concepts about the place of women.

The research method that aligns with this approach is the content analysis of the totality of cultural artifacts and symbols (song lyrics, choreography, costume and instrumentation) in the representation of girls and women in Ukokpan's body of work. Accordingly, ten hours of Ukokpan's recorded performances were examined for mentions, images and the presence of girls and women and the contexts in which they occur. The physical locations and positioning of women on the performing sets or arenas are also assessed. One acknowledges the limitation of the sample size as a holistic representation of the totality of Ukokpan's performances. For one thing, not many were recorded or are available in digital forms. Of those in digital forms, few are accessible online. Indeed, as Ukokpan himself stated during an interview, he recorded hundreds of albums starting when the media of music storage and dissemination were *uchan ikwo* (vinyl records). Ten hours of immersion in Ukokpanism is admittedly a scintilla of a body of work spanning over seven decades. However, the evaluated content covers a variety of topics from the Nigerian Civil War of the 1960s to more contemporary issues such as divisiveness in Nigerian politics and dictatorial regimes. It is therefore a sufficient representative sample for the present purpose. The analysis is organized into two categories: the songs and lyrics, and the choreography and costume. The instrumentation is an aspect of interest but it does not rise to the level of a separate section in this discussion given that the instruments are played predominantly by male members of the group with an insignificant number of female instrumentalists.

Review of selected songs/lyrics, choreography and costumes

Ukokpan was male and it was inevitable that his craft would project a gendered standpoint on socio-cultural and political issues. As his craft evolved and his public

legitimation increased, he was no longer just an entertainer but a public figure and a cultural icon with a credible platform from which he challenged political and religious authority and advocated social and political reforms. Part of the issues of his time included the condition of women in Anaaň society, especially given that his ascendance as a popular artiste occurred in an era when the education of girls was not a priority. When parents with limited resources had to choose between sending a son or daughter to school, they often favored the son.[3] Was the condition of women ever an issue of concern in Ukokpanism? Also, as women were an important component of Ukokpanism in their role as dancers, did the context in which they appeared support their aspirations as members of the larger community? It is expected that a review of selected songs/lyrics[4], choreography and costume in Ukokpan's recorded performances (available online) will provide some answers to these questions as a scaffold to addressing the two major questions that frame this research.

Songs/Lyrics[5]:

Ufök Awasi Adede? ('Is that church?') is a song about the hypocrisy of Christians, especially church leaders. It includes a commentary on boys and girls who frequent *ufök akam* (prayer houses) for the sole purpose of finding sex partners.

Girls are advised to avoid unwanted pregnancies from indiscriminate sex while boys should avoid being infected with *udöňö (*sexually transmitted diseases, STD) by having sex with girls. On the surface, this is constructive advice because unexpected pregnancy is rarely a thing of joy for a young girl or woman, especially if unmarried; STDs are not welcome by anyone – male or female. However, beyond this paternalistic advice is a sub-textual commentary on morality. The song assigns an equal indictment of hypocrisy to boys and girls who go to church for less-than-spiritual reasons, but the gender specificity of the consequences resonates with perceptions of women as prostitutes. Indeed, this labeling

is so pervasive that some women, tired of explaining themselves, shrug off with *akpara ade anyiň uduök mmöň iban* ('prostitute' is a woman's baptismal name). The reference to STDs as consequences for young men who pick up sexual partners underscores the idea of women as carriers and transmitters of diseases and those who lure innocent men to their destruction. It ignores the fact that men who have non-monogamous and unprotected sex can also spread STDs or that perhaps the girls and women were infected by their male partners in the first place. The perception of women as irresponsible and sexualized objects is echoed in another song*, Mmekoro nsipe (*'I have sweated'), which extols the value of hard work. A passage[6] in the Bible about how those who do not work should not eat is cited as God-approved evidence. The song begins by calling both men and women to *koro sipe* (sweat) if they want to eat, but then, assigns gender-specific tasks.

Traditionally, men performed *ntem* (the process of clear-cutting a piece of farmland and getting rid of wild plants and trees to prepare the land for a new planting season). When the cuttings have dried sufficiently, the land is set on fire to burn them and any remaining flora. The next task is performed by women who finalize the preparation process by clearing out the charred remnants and would typically be covered in *nkaň atuk* (charcoal). The actual planting is also gendered: some crops such as yams are planted by men while women are responsible for vegetables and other less valuable crops. Between planting and harvest, the farm needs weeding, a back-breaking task traditionally assigned to women. Indeed, in traditional Anaaň culture, a man may be public-shamed if he is found weeding; while women who clear-cut (*tem ntem)* may be derided for being *ejiara* (a male animal). This is the context in which *nkaň atuk* and *mbieere* (weeding) appear in *Mme koro nsipe;* The gendered connotations are recognized by anyone familiar with the Anaaň farming culture.

Any doubt that *Mmekoro nsipe* reinforces gendered roles even when the value of hard work is a universal attribute is dispelled when the totality of the song is examined. For instance, it speaks in perjorative terms about girls who, rather than work, adorn themselves (with make-up and nail polish) and roam the streets. The song also uses the phrase *aröbö itöň ubök akana iruň* to describe hand gestures ascribed to an idle person. The phrase is also evocative of femininity and people (both men and women) who have delicate or amble wrists and stroll aimlessly around the community. The image contrasts with that of the industrious Anaaň woman who is covered in *nkaň atuk* (charcoal) and does not forget when it is *mbieere* (weeding) season. The song also calls on girls to settle down (get married, for instance) early because *utöt ade amanyöngö, mkparawa edaka ukpöň*

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[3] The reasoning was two-fold. First, sons carry on the family heritage and name, girls do not. Second, it was considered a 'waste of money' to educate girls because the rewards of such education accrued to the husband's family. Attitudes have changed over the years and education for girls is now taken for granted. However, families with limited financial resources still prefer to send their sons to school while encouraging the daughters to get married as soon as possible.

[4] Ukokpan songs were written and performed in the Anaaň language. References to them are therefore in the original language with English translations in parenthesis.

[5] Other songs/performances evaluated for this analysis albeit not directly referenced include: *Mwon Onyong* (Water from the sky, or Rain), *Nse Agwo Anam Ari Duku Ifun* ('All endeavors require sacrifices'), *Anyie Agwo Eku Abogho* ('Who has lost out on a windfall?'), *Mkpa Asong Anyen Abogho* ('Death is very disrespectful;' can also be translated as 'Death does not discriminate'), and *Naira Udorji* (reference to a bonus pay package to Nigerian federal civil servants as a consequence of the oil boom of the 1970s).

[6] 2 Thess. 3:10. For even when we were with you, we gave you this rule: 'If a man will not work, he shall not eat.' (NIV)

('when the buttocks lose their firmness, young men will abandon you'). Reference to the firmness of the buttocks is probably a metaphor for youthfulness. But given the social context of the song, it also perpetuates a prevailing assumption that women's achievements are derivative of their physical features (and buttocks that have not yet succumbed to gravity and age are positive attributes). This aspersion of accomplished women is somewhat universal but takes an added dimension in the Nigerian context where notions of 'bottom power[7]' are pervasive and invariably reduce women's professional and corporate achievements to functions of their sexual relationships with men. The song reinforces the idea that only beautiful women succeed (in education, career or business enterprise) because men in positions of authority (now described as 'destiny makers' and 'mentors' in Nigeria) favor them but ignore 'ugly' women.

This notion that only beautiful women (with firm buttocks) succeed in marriage and careers somewhat contradicts the high value assigned to the hard-working charcoal-covered Anaaň woman. Can it be assumed that these women failed to leverage their youthfully firm buttocks before gravity rendered them 'unattractive' and had no other option but to work on the farm? Or, perhaps, the industrious farm worker is the ideal Anaaň woman?[8] If so, this raises questions about the career trajectory of the girls with painted nails, faces and delicate wrists who, according to the song, do nothing but stroll idly through the streets in a presumed attempt to leverage their firm buttocks for personal and economic advancement.

In its video, *Nse ajen[9] ijaya ntom* ('What a beautiful girl!') begins with a young woman dancing happily on a table. The mood is carefree and celebratory. Below her is a group of women dancing in a circle and looking up at her admiringly. Their gesture is a response to the song's prompt for the community to behold the woman's beauty. In the middle of the celebration, part of the woman's clothing (a wrapper) rolls off her body and drops on the ground below her. She looks desperately for someone to pick up the wrap and cover her assumed nudity.[10] No one picks up the wrapper and her dancing turns from joy to desperation. The song too changes from the celebration

of a woman's beauty to lamentation of her aloneness and the tragedy of having no one to cover her nakedness. In *Mmekoro nsipe* ('I have sweated'), it was implied that youthfulness and beauty are critical to a woman's success. Here, it appears that *ujai* (beauty) by itself is not a sufficient condition for a woman's success if she is alone.

This song could also have been about a man who has no family. Indeed, the theme of family transfuses Ukokpanism. The artiste often sang about how being *ajen nnana (*an orphan) is a major tragedy. For instance, in *Edemme Ema Agwo Inogho Uko'kpan,* he sings about he was denied material resources because as an orphan, he lacked people who could advocate for him. The message about the importance of family would still be powerful if it was a man whose loincloth dropped while he was dancing. Perhaps for the point to be made about women's dependence and powerlessness, the subject of the song and the video performance had to be female.

The gendering of aloneness in this song not only signals the emotional and economic cost of being an unmarried woman in Anaaň culture but also highlights the gendered attitudes toward nudity. As Weinberg and Williams (2010) note, female nudity has strong sexual connotations not usually associated with the male body. The sexualization of female nudity may also underscore the pervasiveness of unclothed or half-clothed female bodies in popular cultures such as movies and fashion shows in greater degrees than male bodies. Even in hyper-erotic movies, the female body is often displayed in full while the male body is not. Marwaha (2019) concludes a four-part report of a study of men and women at a nude beach in Barcelona this way: 'Well, male bodies are just bodies while women's bodies are sex. This explains a lot about sexual violence and messed-up concepts of consent.' This conclusion captures some of the cultural attitudes toward male nudity as being less 'abominable' than female nudity. On the one hand, the female body is venerated for being the site of reproduction and life. On the other hand, it is seen as an object for male emotional satisfaction which must be controlled and protected like other types of male possessions. This is why female nudity attracts a greater reputational cost in the community generally but especially among the Anaaň people.

The gendering of nudity and aloneness in *Nse ajen ijaya ntom* can also be explained by the larger cultural and family structure in Anaaň culture. The orphaned male does not receive as much attention as the orphaned female because of the assumption that men are stronger, more independent and capable of survival in the absence of a family. A common saying among the Anaaň people acknowledges the presumed independence of the male child. Loosely translated it goes like this: when an *akpan (*the first son) goes to his mother's *ufök ubom,* it means he is in serious trouble. *Ufök ubom* refers to the kitchen but also includes the area of the household occupied by women and young children. It is traditionally located

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[7] 'Bottom' is slang for buttocks in Nigeria. 'Bottom power' is often used as pejorative for a woman whose achievements are assumed to be a product of her ability to sleep her way to success.

[8] This may not be a far-fetched speculation because not too long ago in Anaaňland, one of the metrics for determining if a girl was marriageable was her ability to work on the farm. This was particularly important for prospective mothers-in-law who wanted their potential daughter-in-law to be an asset to the family. The perfect wife material was therefore a woman who was not only capable of working on the farm but also one who would do it willingly, tirelessly and without complaining This contrasted with the *ifö* (lazy girl) who could not or was unwilling to do farm work or *mkpö isoň ufök (*domestic chores).

[9] A*jen* can also refer to a male child.

[10] In the video, the dancer wears a long dress under the wrapper. In the traditional attire of the Anaaň woman, there would have been no dress under the wrapper and the audience understands that the loss of the wrapper would have exposed the woman's nudity.

behind the main house. In other words, a son does not need his mother – or father, for that matter – except in extreme situations since he can, ordinarily, take care of himself. Even in this hypothetical scenario, the son exercises agency in his choice to go to his mother's *ufök ubom* probably for emotional support and care. Girls and women, on the other hand, need the protection of the family to actualize their sense of belonging and identity. The song then serves as a cautionary tale to the beautiful and happy young woman about over-confidence in her physical attributes as they would not be sufficient for her actualization if she does not have the protection of a family, namely a husband. The wrapper covers the body and its absence symbolizes physical, economic and social vulnerability.

Se ukpono se ajen akpono ete ('See the honor that a child gives to his/her father') is about children who neglect their parents while they are alive but put on an elaborate and expensive funeral when they die. The song also rebukes children who failed to provide medical care for their sick parents by taking them to the hospital but are ready to spend tons of money for extended embalmment in the mortuary as they prepare for an elaborate funeral. This song is about *ajen (*child) and 'mother' is mentioned as part of 'parents' but the totality of the lyrics is masculine (father and son) in its context and title. Culturally, the responsibility to bury a parent falls on the son but the song goes beyond this filial duty to stress the need for the son to take care of his parents while they are alive rather than impress the community with an extravagant funeral ceremony. One argues that a message that asks adult children to support their elderly parents applies to both sons and daughters. The gendered nuances were unnecessary and only served to accentuate the invisibility of the female child.

Choreography, costumes and instrumentation

As with the lyrics, the choreography, costumes, instrumentation, and the spaces occupied by the dancers have gendered undertones in Ukokpanism. This is most visible in the specific style of dancing associated with the genre. Generally referred to as *Unek itak isin* ('waist dance' because of the distinctive gyration of the waist), Ukokpan's dance is energetic and physically exacting.

The active utilization of the waist and lower abdominal areas of the body distinguishes it from dance forms commonly associated with women (examples include *abang, mbobo* and *asian akan anwan)*. Until recent years, the dance was performed exclusively by male dancers. In contrast to *unek itak isin,* the choreography of the female dancers is very gentle, often involving the swaying of the arms in an undulating manner.

Their costumes also align with their dance styles without deviating from the traditional everyday dressing style of the Anaañ woman. This consists of a blouse (often with flared sleeves), two wrappers tied on top of

each other (*eka eka iba)* and *bokit (*headscarves). This dressing style was traditionally associated with married women in Anaañland and other parts of Southeastern Nigeria. Indeed, in the Anaañ culture, the *eka eka iba* and *bokit* combo on a woman was the equivalent of a gold band on a woman's ring finger signaling her marital status.

The costume presented female dancers as married women or widows and more likely to perform as backup dancers in male-dominated cultural groups. This shielded the woman in two ways. First, they were less likely to be propositioned by their male colleagues or fans who would see them as unavailable or too old for sexual adventures. Secondly, in presenting the women as married or widowed, the few younger and unmarried dancers were not exposed to the public derision that might circumscribe their marriage prospects. The perception was having multiple sex partners was associated with their performance and public exposure. In other words 'good girls did not perform in public.' Viewed from this perspective, one may conclude that in recruiting married or older women or at least presenting the female dancers as such through a costume that aligned with the traditional style of dressing of married women, Ukokpan actively sought to protect the reputation of his dancers.

The male performers in the Ukokpan Cultural Group, on the other hand, are costumed differently and festively. Theirs is not an everyday outfit but a traditional costume for male dancers. They consist of a colourfully decorated t-shirt, a red and white knitted beanie hat, a kilt-like skirt made mostly of colourful strips of fabric. Around the waist is *njoho* (a fluffy belt made of ropes from the bark of the palm wine tree, ubiquitous in Anaañland). Draped around the neck, waist and arms are colourful long beads and tiny bells and rattles made from cowries and other shells. The costume is distinctive and the appearance of a man thus attired creates immediate anticipation of Ukokpan even before the ever-present whistle signaling the artiste's entry is heard. While the female costume is indistinguishable from routine women's attire the male costume is vibrant, loudly cheerful, celebratory, and captures the attention of the audience thus overshadowing the presence of the female performers.

The physical spaces that Ukokpan dancers occupy during public performances are as gendered as the costumes. Male dancers are located centerstage during public performances while female dancers are placed in the margins. The latter are often seen/shown dancing and waving handkerchiefs in the background as their movements rise and fall in synchrony with the tempo of the music. They cast images reminiscent of trees at the edge of the village square, far from the center of community life, their branches swaying to the wind like a supporting cast of silent observers. These images mirror the physical spaces occupied by women in Anaañ society.

Traditionally, Anaañ women were consigned to the margins of community life and female-specific spaces

such as the domestic sphere. The households, especially in polygamous families, were organized around gender. For instance, women were assigned separate living quarters behind the main house. Children were part of the mother's living area until the sons came of age, usually in adolescence, when they graduated to the 'main house.' The 'main house' was also the center of family life and public space where the father/husband presided over family issues and received guests. Husbands rarely went to the wife or wives' *ufök ubom (*living quarters) except for conjugal purposes but often it was the wife who 'visited' the husband in the main house when her company was required. The 'main house' was bigger and had the luxuries absent in *ufök ubom,* thus more convenient for the husband if the wife attended to him there. This arrangement (location of women in *ufök ubom*) is replicated in Ukokpanism as male dancers occupy the center stage while women remain in the background to provide support – visible but not intrusive.

Incidentally, this gender-specific household arrangement parallels the place of Ukokpanism in the Nigerian popular music landscape. For a long time, it occupied a narrow terrain of 'cultural music' but it has since evolved over the years from the margins of 'culture' as a performance genre into contemporary and 'modern' artistry diffusing to other parts of Nigeria. The choreography has subsequently become a prominent feature in the music videos of younger artists of all genres in the country. In these music videos, female dancers are shown performing *Unek itak isin* and displaying the same stamina and gyration style for which Ukokpan and his male dancers are famous. Recent Ukokpan performances have also featured female dancers performing *Unek itak isin.* Indeed, when a female dancer emerged on the screen as an opening act in *Afo akpono Obong Abasi* ('Are you worshiping God?'), one had to look more closely to confirm that the dancer was female. In *Utom obong asok adede*? ('Is that still God's work?'), female dancers occupy the center of the set. One of them is dressed in the traditional *mbobo* (maiden) costume instead of the double-wrappers of the older women. Rather than the feminine *mbobo* dance, she performs U*nek itak isin.*

Also, a 67-min 2015 production of various songs and performances features several female dancers dressed in similar costumes to those of the male dancers and dance alongside their male counterparts. In another performance, some male dancers are placed at the margins of the performance set, seemingly providing backup support for some 'double-wrapped' women at the centre. The camera focuses on the women for a longer time than was often the case in the past. The hybridization and genderization of costume, choreography and performance highlight the evolution of Ukokpanism, perhaps in response to the contemporary imperatives of the larger Nigerian entertainment landscape and the participation of female performers in various genres.

Despite the emerging mainstreaming in choreography, costume and physical positioning, instrumentation remains exclusively male. This seems to be a universal phenomenon in folk music. For instance, Newton (2019) notes the absence of female instrumentalists in Scottish folk music: 'Why do we still so often feel the need to categorize women as singers and men as instrumentalists?' (3). She argues that the active and successful participation of female instrumentalists in summer schools and university courses demonstrates superior playing skills and wonders why these are not showcased in real-life performances. Any girl or woman who has attended an all-girls school in Nigeria would agree with this as girls constitute 100% of school dance groups: they dance, sing, and play instruments such as the drums that feature in Ukokpanism. Those skills are not lost when girls become women. It is expected that the gender mainstreaming that has already begun in other areas of Ukokpanism will continue and be more inclusive of women as instrumentalists.

In the singing department, there is also a conspicuous absence of female voices – both literally and metaphorically. The major singer in the samples reviewed for this article is Ukokpan himself with his ubiquitous *akwa ikwö* (lead back-up vocalist). Personal interviews with people familiar with Ukokpan indicated that the man composed many of the songs, often on the spot during live performances. This author observed during a live performance how Ukokpan 'customized' a song to coax a grieving daughter to stop crying at her father's funeral and join him in a dance. Instantly, the funereal atmosphere was transformed into a festive celebration of songs and *unek itak isin.* The ability to compose songs on the spot contributed significantly to Ukokpan's popularity in Anaaň. It also reduced the opportunities for other members of the group, especially women, to co-create content or contribute in any significant manner.

Portrait of the Anaaň woman in folk music: Discussion

The presence of female members in cultural music groups generally, and Ukokpanism specifically, is indicative of their role as active agents. Through their performances, they seemingly leverage their physical attributes and talents (as dancers and backup vocalists) to achieve their personal goals (such as income-earning). On the other hand, female performers in folk music groups operate within entrenched social norms. The external evidence is in their costume and the supporting, often marginal, roles assigned to them. In this sense, female artists are at once empowered through their decisions to belong to these groups but those decisions are also subordinated to gendered structures and hierarchies. In so doing, they remain within gendered socio-cultural boundaries without threatening or

destabilizing entrenched patriarchal institutions. While Ukokpanism is not representative of the varieties of folk music groups in Nigeria or even the south-eastern region, its ethos and structures mirror what occurs in other cultural music groups. This is particularly so because, after seven decades in the industry, Ukokpan was considered a trailblazer of the genre and newer/younger groups adopted his style, especially in the choreography and the themes/issues that frame the songs.

As this research demonstrates, Ukokpanism presents a specific narrative about women through lyrics, choreography, costumes and instrumentation. While the gendered depictions are muted in the last three categories, most of the lyrics are overtly gendered and portray women and girls in a less-than-salutary light. There is a conspicuous absence of positive and empowering references to women and silence on contemporary practices that affect women negatively such as the treatment of widows and continued preference for sons over daughters. The presence of women as female performers in the group contrasts with female references in Ukokpan's songs. Often, when women show up in the songs, they are depicted as idle, purposeless and sexually promiscuous. These themes are elaborated in this section, albeit with a caveat: the analysis and conclusions are based on the materials reviewed for this article rather than on the totality of Ukokpanism or judgment about Ukokpan, the man.[11]

First, most of the songs in Ukokpan's repertoire are generic enough to apply to both men and women, particularly those in positions of authority; however, mentions and references to women routinely resonate with sociocultural stereotypes that portray women negatively. Even a song that compliments a woman's beauty echo social ethos about women as objects of beauty for male admiration and gaze. Another song cast the female body as a commodity that must be leveraged before it loses its market value. Painted faces and nails (cosmetics makeup) are contrasted with bodies covered in charcoal with the first symbolizing laziness and the latter hard work. It seems unimaginable that women who wear make-up can also be industrious and that hard work can occur outside the context of the farm or without physical sweat. Though cosmetics are generally accepted in Anaaň communities, girls and women with 'painted faces' still get overt or implicit rebuke (the 'side-eye') by older people especially those in the rural areas where the primary and most consistent consumers of Ukokpanism are likely to be in the majority.

Second, for many decades, female dancers were excluded from the signature dance styles of Ukokpanism. The message was that women lacked the energy and

stamina to attempt and sustain *Unek itak isin*. This also resonates with the deliberate assignment of certain tasks to women either because they require physical strength that women presumably lack (*ntem*) or the tasks themselves are too demeaning for men to perform (*mbieere).* The choreography of Ukokpanism reflected this gendered division of labor.

Third, the differences in the dance costumes reinforced Anaaň fashion. Indeed, an adolescent girl might be described as *ajöhö akuno aföng agwo-nwan* ('she is old enough to tie a wrapper') to another person in place of the girl's actual age. It also signifies the importance of the traditional wrapper in the rites of womanhood for the Anaaň woman. This remained unchanged for much of the Ukokpan years as the costume of the female backup dancers portrayed the traditional attire of the Anaaň woman. In more recent years, the inclusion of female dancers in the *Unek itak isin* section of the ensemble compelled a gradual change in costume such that some female dancers were allowed to wear the same costume as the male dancers. Both the physical location of the performers and costumes have also ceased to be the distinguishing features between male and female dancers. Nevertheless, the general choreography and costume of the backup female dancers remain unaltered even when they occasionally now perform centre stage.

In general, the sample materials used for this analysis demonstrate how Ukokpanism portrays women in ways that (intentionally or not) reinforce gendered constructs and stereotypes. Perhaps, this was inevitable given the nature of folk music which typically reflects the customs and traditions of the people. Known in the Nigerian music and performance industry as 'culture,' the genre was hitherto relegated to the realm of village artistes many of whom did not have formal Western education or training. They used their natural talents of composing, singing, dancing and skills at playing local instruments (such as xylophones, drums, rattles, gongs, etc.) to perform at funerals, weddings and other community events. The songs are usually in the local languages and dialects of the artiste's communities and echo local customs and practices. Ukokpan and his cultural group were prominent in this genre of performing arts. Their work generated recognition and acceptance beyond the cultural borders of Anaaňland and was universally recognised as ambassadors of Anaaň culture. It was therefore inevitable that the culture that Ukokpanism presented to the world was unabashedly patriarchal and unencumbered with any conscious interrogation of gender. It was not in the interest of a 'culture artiste' such as Ukokpan to upset the cultural order that propelled him to international prominence even when that order was imbued with assertions of female inferiority.

However, the nature of the art form does not absolve Ukokpanism from the lack of awareness of gender issues and/or a conscious effort to deconstruct stereotypical notions about women. Indeed, the paradox is that though Ukokpanism did not consciously alter social perceptions

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[11] The materials reviewed for this analysis were randomly selected and covered many years and issue areas. Since it is impossible to review the totality of Ukokpanism, these materials serve as a good sample from which to make some inferences about Ukokpanism and its portrayal of women.

about women, there was no such reticence when it came to other social and political issues such as the hypocrisy and contradictions exhibited by institutions and authorities. For instance, in a song about teachers, Ukokpan reminds his audience that without teachers, there would be no doctors, engineers or politicians and it was therefore unfair that teachers were so poorly paid. Since he commented on injustice and inequities in various areas of life, his silence about how these issues affected women in uniquely gendered ways cannot be dismissed based on the genre of his work. In keeping silent about gender issues, the artiste reinforced patriarchal conceptualizations of women even if that was not his intention.

There is no argument about how women have been portrayed in Ukokpanism. On the other hand, to its credit, it provided a platform for visibility and a source of livelihood for female entertainers even if all they did was serve as props on the margins of performance sets. Also, as part of the traveling troupe, the female dancers were exposed to places outside their immediate communities. Admittedly, the presence of women as dancers in a musical group adds a unique entertainment value to its performances and this possibly explains why women have always been part of the Uko Akpan Cultural Group.

Conclusion

The article began with an anecdote of an event that did or did not happen but reveals something about the man behind Ukokpanism, a side of him that may be lost in his public performances and songs. That is, he empowered women by including them in his public performances even as other aspects of his work perpetuated women's subservient role in Anaaň society. This conflict (between intentions and actions) shows the complexity of the effort to evaluate a cultural artiste whose life and work spanned more than seven decades and through various changes in society. Nevertheless, the analysis of the work of Ukokpan demonstrates that folk music generally and his genre in particular intersects with cultural narratives about women in ways that are simultaneously empowering and marginalizing. It empowers by providing a platform for women to participate in the public space to showcase their talents as artists and as a source of livelihood. At the same time, folk lyrics and performances continue to be superimposed on entrenched cultural ethos and systems that, deliberately or unwittingly, assign subordinate roles to women. The gradual gender mainstreaming in Ukokpanism might have been indicative of the awareness of this perpetuation of gender stereotypes and the changing societal trend toward gender equity even in folk cultures.

In his way, therefore, Ukokpan was an advocate for Anaaň women by providing them (at least his dancers) a platform to perform even though his lyrics continued to cast him as a stalwart of patriarchy. In the end, he stayed true to himself as an Anaaň man and a product of his time and place. His 70-year career began as a 15-year-old boy with no formal education. When he passed away in 2020, he had created a niche for himself as a cultural icon who reinforced and challenged traditional values, demonstrating the capacity of folk music as a viable vehicle to transform society – if properly directed.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Full Length Research Paper

Kurdish migration in Hakkâri in 1915 within the context of constructivism theory[1]

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The aim of the article is to analyze the Kurdish migration that took place in Hakkâri during the First
World War in the context of constructivism. The main question of the study is: "What is the place of the
Kurdish migration in Hakkâri that took place in 1915 in the memory of those who witnessed that
period?" The study data were obtained through semi-structured interviews conducted in Hakkâri and its
districts, and in the Kurdish Region of Northern Iraq within the framework of this basic question. The
data obtained in the study were collected from the stories that the interviewers heard from their
ancestors. The stories have been transferred from one generation to another and they have reached the
present day. Since this migration includes aspects such as structure-actor, identity, discourse, and
social reality, the analysis of the research data was conducted through constructivism or social
construction theory. As a result of the Nestorian and Kurdish conflicts that took place in Hakkâri in
1915, both groups of people had to say goodbye to their homes and old habits and to migrate.
Especially Russians, who began to occupy the regions such as Van province, caused the Kurds in
Hakkâri to migrate to Iraqi lands. In the study, it was found that the Kurdish migration that took place in
Hakkâri in 1915 caused negative situations such as hunger and misery, and Kurds who could return to
Hakkâri since 1917 tried to hold on to life. As a result, as in every forced migration, social traumas have
been experienced during the migration, which is the subject of this study.

Key words: Hakkâri, World War I, Kurdish, Immigration, Testimony.

INTRODUCTION

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The First World War is a historical turning point in which three great empires collapsed and new states were formed. In addition to the great human losses caused by the war, there were also forced migrations in which human tragedies occurred. Before the war, people with different ethnic and religious affiliations had lived together under the rule of the Ottoman Empire. However, non-Muslim subjects who were influenced by the imperial policies of different states during the First World War came into conflict with Muslims. As a result of these conflicts, Muslims, as well as non-Muslims, were forced to migrate (Tekir, 2016: 43 to 63; Turan, 2012: 80 to 120). The Nestorians and Kurds in Hakkâri clashed with each other and both had to emigrate from the region. The Kurds, who are one of the ancient peoples of Hakkâri, lived together with the Nasturi/Assyrian people in the Hakkâri mountains until 1915. These two peoples had lived together for centuries in friendly and good neighborly relations. In the 19th century, the missionaries sent to the region by the states such as England, America, France and Russia (Verheij, 2016: 79), caused religious, linguistic and ethnic divisions between the neighboring peoples (Bar Mattay, 1996: 14 to 15). At the beginning of the 20th century, the Nestorian Patriarch was in constant contact with the Russians, and this relationship paved the way for the transition of a large number of Nestorians to the Russian Orthodox Community (Yonan, 1999: 36 to 37). On the other hand, English Anglican missionaries such as William Browne stayed in Hakkâri for a long time and kept reports on the demographic, political and geographical structure of the region and sent them to their state (Verheij, 2016: 82 to 87). As a result, the Nestorians considered the representatives of the foreign states as a guarantee of their security, and severed their relations with the Ottoman State and their neighbors, the Kurds. Nevertheless, in order not to lose the ancient relations with the Nestorians, as well as with all minorities of the Ottoman Empire, the Governor of Van, the local representative of the state, invited the Patriarch of Nasturi to the province of Van and tried to understand his relations with foreign states. During the negotiations, the governor stated that the Patriarch's demands would be met, but he wanted his relations with foreign states to be cut off (Stafford, 1935: 18-20; Surma, 2015: 82 to 83). It is clear from the archival documents that the Ottoman Empire ordered its representatives in the region to resolve the Nasturi and Kurdish conflicts with constant reconciliation, which arose intervally during the period from the end of the 19th century until 1915 in order to ensure peace in the region (BEO.223/16719-001, June 7, 1309; BEO.227/16960-001; A.MKT.MHM.670/13-002, June, 3 1313). When the First World War began in 1914, the British advance through Iraq and the Russian movement through Northeastern Anatolia caused panic in Hakkâri. As a result of these movements, the Nestorian Patriarch and his family left the village of Kochanis

(Mansion), which was the center of the Patriarchate, in March 1915, and settled in the Nasturi Dêz tribe (Surma, 2015: 81 to 89). In the face of the Russian invasion that started towards Van, the Hakkâri Kurdish tribal leaders held a meeting with the Nasturi Patriarch, who was in the village of Dêz, to reach an agreement and develop a common strategy. During the meeting, Kurdish leaders made statements such as "Nasturi and Kurds have a common history based on friendship, it would be harmful for both communities to act together with the Russians ..." (Kaplan, 2020: 274; Xet Nezan, the interview dated 17.04.2019). But the Patriarch and the Nestorians did not step back despite all the efforts of the Kurds, saying that they would act together with the Russians in the war, and, indeed, Hakkâri would remain under Russian rule and the Nestorians would also be granted status (Korkmaz, 2021: 151 to 152). In addition, the Patriarch's relative Nemrut Efendi also told the Patriarch that, if the Nestorians acted together with the Russians and the British, they would lose everything, especially their lives (Parhad, 2009: 31). Starting from the spring of 1915, Nasturi and Kurdish tribes clashed in the region. Therefore, when the news of the Russian advance into the region reached Hakkâri, the Kurds in Hakkâri began to migrate towards Iraq in the spring of 1915. Bahdinan Kurdish tribes living in Iraq, together with the emigrating Hakkâri tribes and the military units under the command of the Governor of Mosul, Heydar Bey, after heading to Hakkâri in June 1915, forced the Nestorians to migrate to the Iranian territory by breaking the Nestorian blockade in September 1915 (Korkmaz, 2021: 155 to 156). Since there is no information in the literature about the Kurdish migration, the data were collected entirely based on field research-related testimonies and Ottoman archival documents. Both Nasturi and Kurds emigrated during the events that took place in Hakkâri in 1915. Although there is certain literature about the Nasturi migrations, there has not been any text written on the Kurdish migrations. In this respect, a field study was conducted in Hakkâri and Northern Iraq to determine the causes and consequences of the Kurdish migration that took place one hundred and seven years ago. In addition to the field research, the study was supported by several documents that could be found in the Archives of the Ottoman Empire. This article, consisting mostly of data obtained as a result of field work, is the first study conducted in the field of Kurdish migration in Hakkâri in 1915. Therefore, despite the difficulties of collecting data, an original study has been conducted and made public.

LITERATURE REVIEW

The study is about Kurdish migration that started as a result of Russian occupation of Hakkâri in 1915. Kurds, who are the ancient people of Hakkâri, lived together with Nestorians in friendship and good neighborly relations for

centuries. Missionaries sent to the region by states such as England, America, France and Russia in the 19th century (Verheij, 2016: 79) created religious, linguistic and ethnic distinctions between neighboring peoples (Bar Mattay, 1996: 14-15). Especially for the Nestorians, the Assyrian identity defined by the British Archaeologist Henry Layard has been influential in these distinctions. With Layard's excavations in the Mesopotamian region, it has been claimed that the Nestorians living in the Hakkâri region are ethnically descendants of the Assyrian Empire (Verheij, 2016: 82-87). This identification was accepted by the Nestorians. However, Kurds and Nestorians living in Hakkâri lands did not question each other's ethnic bases. In fact, Nestorians living in Hakkâri and its environs lived under the Ottoman Empire's millet systems, depending on the Armenian community living in Van and its environs. Since this system is based on religion, ethnic bases were not important. In addition, in daily life, Kurds and Nestorians de facto considered themselves to belong to the same nation. Despite the situation described above, at the end of the 19th century, Nestorians and Kurds entered into tribal conflicts. At the beginning of the 20th century, the Nestorian Patriarch was in constant communication with the Russians. In this sense, many Nestorians passed to the Russian Orthodox Community (Yonan, 1999: 36-37). On the other hand, British Anglican missionaries, such as William Browne, stayed in Hakkâri for a long time and made reports about the demographic, political and geographical structure of the region and sent them to their state (Verheij, 2016: 82-87). English and American missionaries have caused the deterioration of Kurdish and Nestorian relations and the unraveling of their historical ties (Bruinessen, 2003:343). In particular, the Nestorian Tiyar tribe, under the influence of missionaries, not only refused to recognize the authority of the Ottoman State, but also constantly attacked the Muslims around them (Deniz, 2021:174). According to Ely B. Soane, American, French and English missionaries who came to the region of Hakkari where Nestorians lived, caused the deterioration of the relationships between Nestorians and Kurds (Soane, 2007:178-181). As a result of all these developments, the Nestorians cut off their relations with the Ottoman State and its neighbors Kurds because they saw the representatives of foreign states as the guarantee of their security. Despite this, the Governor of Van, as the local representative of the Ottoman State, invited the Nestorian Patriarch to the province of Van and asked about his relations with foreign states. The governor told the Patriarch that his demands would be met on condition that they cut off relations with foreign states (Stafford, 1935: 18-20; Surma, 2015: 82-83). However, the archive documents show that the Ottoman Empire tried hard to solve Kurdish and Nestorians conflicts by reaching a consensus (BEO.223/16719-001, June 7, 1309). When the First World War started in 1914, Russia and Britain's appearance in Northeast Anatolia and Iraq caused panic

in Hakkâri. In the face of the Russian invasion towards Van, the Kurdish tribal leaders from Hakkâri held a meeting with the Nestorian Patriarch in the village of Dez. In this meeting, the Kurdish leaders made statements: "Nestorians and Kurds have a historical background based on friendship, if they act together with the Russians, it would be harmful for both communities …" (Xet Nezan, interview dated 17.04.2019). However, despite all the efforts of the Kurds, the Patriarch and the Nestorians did not take a step back; they wanted to act together with the Russians in the war and that Hakkâri and its surroundings would now remain under Russian domination (Korkmaz, 2021: 151-152). In addition, Nemrut Efendi, the relative of the Patriarch, told the Patriarch that, if the Nestorians acted together with the Russians and the British, they would lose everything, especially their lives (Parhad, 2009: 31). Nestorian and Kurdish tribes clashed in the region after the spring of 1915. Therefore, when the news of about Russians reached Hakkâri, the Kurds in Hakkâri started to migrate to Iraq in May 1915. After that migration, Bahdinan Kurdish tribes living in Iraq, along with the migrated Hakkâri tribes and military units under the command of Mosul Governor Haydar Bey, headed to Hakkâri in June 1915, breaking the Nestorian blockade and forcing them to migrate to Iranian lands in September 1915 (Korkmaz, 2021: 155 to 156).Since there is no information in the literature about the Kurdish migration in Hakkari that took place in 1915, which is the subject of this study, the data were collected entirely through field research-based testimonies. Because this migration includes aspects such as structure-actor, identity, discourse, and social reality, the analysis of the research data was analyzed with constructivism or social construction theory. In the research, it was found that the immigrants suffered great losses as a result of hunger and diseases. In this sense, the Kurdish migrations have been preserved in the memory of the Kurds of Hakkâri for many years. It is important that the findings related to these migrations are collected and are subject of scientific analyses.

METHODOLOGY AND THEORETICAL FRAMEWORK OF THE RESEARCH (CONSTRUCTIVISM)

Nestorian people recorded their experiences on the migration routes after they migrated from Hakkâri. However, Hakkâri Kurds could not write about the migrations they made in the First World War, the tragedies they experienced, or different events. When the field research was initiated, the people who had the knowledge about the Hakkâri migration of 1915 were carefully selected. Given the fact that one of the researchers in the study was born and grew up in the region that is researched, he is not a stranger to the subject and he learned about the immigration from his relatives. Therefore, the fact that the researcher is an insider has made a great contribution to the in-depth study of the research field. However, there have also been times when this situation has affected the researcher's assessment of events with a less objective eye by including his own feelings in the work. At such moments, questions and comments posed by the other researcher,

who is an outsider without knowing the subject at all and without any emotional involvement, played an important role in bringing the events back into the academic perspective. For example, a group of people who are close relatives of the field researcher immigrated to Iraq in 1915 and still reside there. These people have provided important information about the period of the study (Appendix-2). The answers to the questions asked in the interviews were usually in the style of a story, as they tried to illuminate the events of one hundred and seven years ago. Before starting the interview, the interviewee was informed about the research and permission was requested to record the interview. In order for the interviewed people to remember the events related to the study period, the interview was started by drawing up a historical framework about the period. Interviews were conducted individually and detailed interviews were also conducted with people who are experts in the subject. The total number of 17 Kurdish interviewees who were found to have knowledge about the subject were interviewed (Appendix Table 1). The interviews lasted between half an hour to an hour. The interviewees' age varied from 50 to 100. The reason for selecting this age group is because the interviewees have heard about these events from their ancestors, that is, their grandparents and great-grandparents. According to the interviewees, they learned about the 1915 migration from their elders, and these information are still passed down today. Indeed, historical events in Kurdish geography are passed down from generation to generation, preventing them from being forgotten. On the other hand, there is no document available on the research topic.

Kurdish language was used in the interviews and the interviews were translated into Turkish language during the deciphering process. As the audio recordings were kept, the names of the participants in the interview were coded, whereby the scientific ethics was respected. Although the migration did not occur long ago from the historical perspective, the number of people who have knowledge about the period is very limited. The research questions were prepared in accordance with the purpose and problematic of the study, and everything was done to ensure the validity of the questions. In the interviews, audio recordings were taken without interfering with the participants' narratives and these recordings were analyzed after being written down. The interview texts that were deciphered for the analysis process passed through three stages of reading. In the first reading, all the texts were just read without any classification and intervention, in order for the researchers to understand the events in the spirit of the specific time and from a holistic point of view. In the second reading, the common topics in the interviews were identified and the texts related to the common topics were collected in a single file. In the third reading, texts classified according to the topics were read and the researchers tried to decipher the relationship between the events and the meanings which were hidden between the lines. The findings of the field research were analyzed with the help of the aforementioned method by blending them with the principles of constructivism. Constructivism was applied as the research model of the study to test whether the findings obtained in the study are consistent. Historically speaking, the relationship between Kurds and Nestorians has developed in a social context. However, with the events of World War I, these relationships came to the forefront in a political aspect. In this regard, constructivism theory allows for events to be structured and evaluated from a socio-political perspective by focusing on identity, interests, and sociological construction. Additionally, constructivism prioritizes the interpretive and explanatory aspect of sociology. Therefore, constructivism was considered appropriate for the analysis of this research.The best way to understand the accuracy of a narrative is to provide detailed information about the event from the narrator. If there are no contradictions in these details, this is an important clue of the reliability of what has been described. However, the data obtained due to the disclosure of people's traumas in this study, which

examined the forced migration event of a certain period, also could not stay away from the neuro-psychological effects. Nonetheless, since the study data showed consistency in terms of consistency of location and time, it was evaluated that they had a high accuracy rate. According to Medved and Brockmeier (2010), it is not important whether a narrative is true or not, but that it is consistent in terms of time and space. The consistency of the stories depends on the fact that they are well structured. In this direction, if a narrative can get a context by organizing the dramatic complexity in an understandable way, this narrative is considered a good story (Medved and Brockmeier, 2010: 19).

After the Cold War, the rational approaches of mainstream international relations (IR) theories (such as realism, liberalism) began to be questioned. Attempts were made to state that international politics cannot be conducted only through power, interests, economy, and security. Different conflicts of thought have arisen on this issue, and the theory that draws the general framework of these conflicts of thought has become constructivism. This theory has started a new debate by claiming that the concepts such as discourse, culture, identity and ideas are also effective in IR beyond the concepts such as power, interest or anarchy. Thus, constructivism has emerged as an alternative to realism (Akdemir, 2012: 18; Walt, 1998). Constructivism has been referred to as the "middle ground" between positivism and post-positivism or as the "third debate". The most important founders of the theory are Nicholas Onuf, Stephen Walt and Alexander Wendt (Emeklier, 2011: 141). The history of constructivism can be dated back to Kant, Vico and Hegel in the 18th century. These thinkers said that knowledge is built socially. Accordingly, knowledge emerges not theoretically and philosophically, but ontologically. In this ontology, meaning is based on phenomena such as norm, structure, idea, identity (Büyüktanır, 2015). The main originating point of constructivism is that it determines an approach that rises above the previous approaches and draws them into a different field. In his book "Social Theory of International Politics", Alexander Went emphasizes the importance of the concepts of "power", "interest" and "identity" and puts forth that these concepts have an important place in the processes of social construction (Wendt, 1999: 92 to120). All constructivists have made the following three main statements about social life. The first is that structures shape the behaviors of social and political actors (individuals and states). In addition, while neo-realists emphasize material elements such as the balance of military power, and Marxists emphasize the structure of the capitalist world economy, constructivists argue that the system consisting of shared ideas, beliefs and values is in structured form and these qualities affect political and social action. Accordingly, material elements can have an effect on human action only through the structure formed by shared knowledge (Reus-Smit, 2013: 294). Secondly, constructivists have recognized that discourse, ideas and meanings have an important mission in explaining the identities of societies and, moreover, that these identities constitute interests. Thirdly, the structure and the actor build each other bilaterally. As a result, subjective and intellectual structures determine the identities and interests of those who make them through three basic mechanisms such as imagination, limitation and communication (Arı, 2013: 507).

The theory of constructivism is built on social structuring, social interaction, social reality and common ideas. In addition, concepts such as structure-actor, identity, power-interest have also entered the research field of constructivism. Since these concepts will be used in the analysis of the study, it is important to briefly explain them. In order to reach social reality, it is necessary to focus on the social processes that reveal reality. According to Berger and Luckmann, social life has emerged as a subjective reality, in which the world is interpreted subjectively by people (Berger and Luckmann, 1991: 33). Social interaction is the transfer of information, culture, etc. to each other, as well as the mutual influence of individuals and societies. In the same way, this

interaction is important in the emergence and change of human behavior. Human behavior has also largely been shaped by taking others as an example and being influenced by them (Bandura, 1977: 197). The common idea refers to thoughts on which a large number of people have a consensus in a certain time and space. According to Henry Mendras, if all members of a social group agree on something, it can be said that it is a common idea, since it has been shared by all the members of the group (Mendras, 2014: 83 to 85). Being a member of a particular group can be measured in the same way by adherence to the common ideas and values determined by that group (Smolicz, 1981: 75).

Wendt emphasizes in the structuring approach that both structures and the doers (actors) cause mutual dependence on each other. Structures include material elements as well as intellectual factors. In this way, Wendt does not reject the ties of material forces which are independent of ideas; he only assumes that these material forces are less important than the meaning imposed on them (Ekici, 2018: 35). Identity can be defined as the person's answers to the questions such as "who am I?" and "who are we?" and as a "collective identity" as a plural sign of social belonging (Alpman, 2018). According to the constructivist understanding, the international community affects the identities of states in different ways. In particular, membership in well-known international organizations leads to the acquisition of certain identities, as well as providing legitimacy to states. This gives information about the direction in which the states will act (Arı, 2013: 501).

Constructivism clarifies the asymmetries of power between states through the balance of power concept. The balance of power can be explained by two methods. According to the first method, when one state accumulates more power than others and begins to dominate IR, other states accept this power as a threat to them and act together to unite against this threat and they try to eliminate it. According to the second method, the state or states prefer to achieve the balance of power by increasing their military forces in the face of a threat (Urkan, 2016: 58).

THE KURDISH MIGRATION IN HAKKÂRI IN 1915 AND ITS CONSEQUENCES

Developments forcing Kurds to migrate

At the beginning of 1915, when the sound of war began to reach the Hakkâri mountains, a delegation of twelve people consisting of Hakkâri Kurdish tribal leaders and the aforementioned people held a number of meetings with the Nasturi Patriarch Mar Shimun Beyamin, but the Patriarch did not give them a positive return. On the other hand, the Russians occupied the region in May 1915 (Günay and Çaykiran, 2020: 137) and began to come towards Hakkâri. Realizing that their lives would be endangered by the Russians advancing towards Hakkâri, in contact with the Nasturi leaders, the Kurds began migrating towards Iraq in May of the same year. Detailed narratives about this migration are given below. Because the Kurdish migrations in Hakkâri and its districts occurred at different times and routes, these migrations have been explained under different headings. The Kurds in Hakkâri city center, Yuksekova and Semdinli migrated to Iraq in 1915. The Cukurca Kurds, on the other hand, had to emigrate in 1916.

Migration in Hakkâri City Center

The findings about the migration of the Kurds in Hakkâri to Iraq in 1915 were obtained from the interviewed people who heard about it from their grandmothers and grandfathers. In May 1915, the Kurds both in the villages and the city center in Hakkâri, set out towards Kurdish Region of Northern Iraq by following the route of Durankaya, Gecitli and Kavakli. The route set for the migration towards the area in Iraq was meandering; and, since there were Tiyar and Tuhup tribes of the Nesturi in the Zap valley, which was closer to the destination, it was dangerous for Kurds to advance from Zap Valley (Çölemerikli, 2006: 372 to 375). According to the narrating from Xet Nezan, the migration process was difficult because there was a lot of hunger and diseases on the migration route. On the other hand, there was also a Russian danger in the Farashin plateau located on the migration route. During the war, the District Governor of Hakkâri and few soldiers in the neighborhood withdrew from Hakkâri (Xet Nezan, interview dated 17.04.2019). As a result, the Kurds who migrated from Hakkâri reached Iraq in the summer of 1915 after various difficulties. Negative stories about the migration were recorded in interviews with different people. According to a narration from Hatem, who lived in the Feqiran neighborhood and was nicknamed Kurdish Seyda:

"When the Kurds migrated to Iraq, they became miserable both on their routes and in the destinations, and they were not even able to meet their basic needs such as food, water, etc. And this situation continued for months. Apart from hunger and misery, diseases and climate change also negatively affected their lives. Many people lost their lives in Iraq and some even got lost there. As a result, two-thirds of the population lost their lives. My grandfather's relatives and sons of our uncle died in Iraq. When the Bolshevik Revolution broke out in Russia, our people gradually began to return to Hakkâri" (Seyda, the interview dated 27.06.2019).

Prof. Hoger Tahir from Zaho University also conveyed the migration narrative of the Kurds from Hakkâri in 1915 as follows:

"According to what I have heard from our ancestors, Dr. Istirciyan of Armenian in Zaho said that the situation of Kurds who migrated to Iraq was very bad at the time of migration, that a starving mother would eat the body of her dead baby. In 1920, according to the Governor of Mosul, Abdulaziz-al-Kasap, the funerals of Kurds coming from Van and Hakkâri were held in the area the surviving Kurds were also in significant financial difficulties [2]" (Prof. Hoger Tahir, the interview dated 20.09.2019).

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[2] Dr. Hoger Tahir told us that he got this information from the page 152 of the book "The Memoirs of Abdulaziz Kasap", compiled by Abdulaziz Kasap's son Xalit Abdulaziz in 2007.

The following data were obtained in an interview with the Kurd Haci Colemergi:

"Missionaries from other countries spoiled the relationship between the Nestorians and the Kurds. The main purpose of the missionaries was to bring together the Armenians living in Van and the Nestorians in Hakkâri under their domination and to make the Kurds migrate from these places. My father was two years old during the war and was taken to Iraq on his father's lap. My father and his family settled in the Iraqi town of Bamernê. According to my father's determination, the Kurds suffered great losses due to the migration that took place in 1915, because the Russian state protected the Nestorians and the Nestorians did not remain unprotected wherever they went. But the Kurds from Hakkâri also remained unprotected and miserable in Iraq, in addition to the difficulties on the migration route" (Hacı Colemergi, the interview dated 04.09.2019).

Yuksekova and Şemdinli migration

The majority of Kurdish migrations in Hakkâri took place in 1915, but the people of Hakkâri city center, Yuksekova and Semdinli did not migrate via the same route. Some of the people in Yuksekova migrated to Iraq and some to Iran. The people of Semdinli, on the other hand, usually migrated to Iraq. Each region or village migrated to the nearest place to them. Hacı Mehmet Diri described the migration of 1915 as follows:

"Kurds in Yuksekova migrated to Iraq and Iran through Dağlıca as a result of Russian attacks in 1915. However, there was no conflict between the Nestorians and Kurds in the center of Yuksekova, because the Nestorians in Yuksekova left the region without fighting with the Kurds since they were raiyat[3]. The most important reason for the migration was that the Kurds were afraid of the Russians and the Nestorians were afraid of the danger that might come from the Ottoman Empire. Big states bred bad blood between both groups of people for the sake of their interests. But before the war, both groups were in mutually friendly relations" (Hacı Mehmet Diri, the interview dated 29.06.2019).

Haji Hasan Oramari also described the migration of 1915 as follows:

"The Nestorians in the Daglica region (Serpêl and Ştazin villages) left their villages without a fight; however, the Cilo tribe living in the mountainous region had violent clashes with the Kurds and migrated from their areas. When the Nestorians emigrated, the rumors that the landlord of Daglica called Süto or Star massacred them are baseless. I heard all this information from my

ancestors" (Hacı Hasan Oramari, the interview dated 29.06.2019).

Esfendiyar Diri, who was interviewed in Yüksekova, said that during the war period, the Nestorians killed many people from the Diri tribe living in Yüksekova. However, the Diri tribe helped the Nestorians reach Urmia comfortably during the migration period (Esfendiyar Diri, the interview dated 29.06.2019). This section may seem conflicting, but according to Esfendiyar Bey's narratives, there has been an understanding of a longstanding history between the two groups. As a result, even in times of war, the understanding between the groups has not been entirely lost. For instance, the Nestorian Tuhubilers' capture of Çukurca Kurds in 1917, without committing any harm and subsequently releasing them, can be seen as a reflection of this longstanding understanding. According to Surma Hanım, the Russians took Assyrian /Nestorian men to armed training in Iran in 1916 and sent them to fight with the Kurds in Şemdinli in the summer of 1917. The Kurds were expelled from there, but when rumors of the Russian Revolution emerged, the Russians withdrew from Iran (Surma, 2015: 91). Muzaffer Ilhan Erdost conveys from Semdinli people that they completely evacuated this place in 1916 and migrated to Iraq. The Russians stayed in Semdinli (Navsar, Nehir and Diman) for about two years. The Zerza, Humaro and Gerdi tribes, who resided in the places under the Russian occupation, also had to immigrate to Iraq later. There were clashes between the Nestorians and the Kurds supported by the Russians on the Semdinli border, but the armed forces of the Kurds were insufficient against the Nestorian and Russian armed forces. The weapons in the hands of the Kurds were the old single-shot mauser guns, whereas the Nestorians had modern weapons such as Russian cannon, etc. In addition, the Russians also provided soldier support to the Nestorians. This military support consisted of four battalions, eleven cavalry troops, six artilleries (Erdost, 2016: 70). According to Mehmet Zerza, who conveyed from Hacı Ibrahim Kelêti[4], a member of the Gerdi tribe, there was a Kurdish military force of three hundred thousand people in Şemdinli against a military force of about a few thousand people consisting of Russians, Armenians and Nestorians, and this military force of Kurds made it possible for the Kurds to emigrate to Iraq. Apart from the villages of Kelat, Herki and Bêdav, which were not noticed by the Russians, a large part of Semdinli migrated to Iraq. The people in Semdinli stayed in Iraq for about two years (Mehmet Zerza, the interview dated 28.11.2019). According to the narratives collected in the Semdinli region, military forces consisting of Russians, Armenians and Nestorians attacked the Kurds and forced them to migrate to the Acre region of Iraq.

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[3] Nestorians are not affiliated with any tribe.

[4] Hacı Ibrahim Kelêti, who was a resident of Semdinli, lost his life at the age of 120 and fought against the Nestorian-Russian troops in the First World War (Şükrü Nurçin, the interview dated 07.09.2020.).

Kurdish fighters were few in the face of these attacks and a large number of Kurds lost their lives in asymmetric events (Mehmet Zerza, the interview dated 28.11.2019).

Cukurca migration

Unlike the Nestorian-Kurdish migrations in Hakkâri city center, Yuksekova and Semdinli, the Kurdish migration in Cukurca started in 1916. The Kurdish migration in Çukurca took place in 1916 as a result of the return of warrior Nestorians to the region, and hunger and misery that arose due to the difficult conditions of the war. However, the people of Cukurca (Nesturi and Kurdish) had cooperated to protect themselves before the war. For example, the Kurds in the villages of Bêlat, Bê and Bêrewil in Cukurca and the Nestorians in Guzeres (Cevizli) exchanged their villages in June 1915[5] (Hacı Akın and Seyfullah Güzereşi, the interview dated 13.11.2019). The main reason for the migration in Cevizli village and its surroundings in Cukurca in 1916 was the lack of agricultural products as a result of the locust invasion in the same year (Hacı Marufi, the interview dated 21.12.2019). The Nestorians returned to Hakkâri in 1917 with a large military force. When the Tuhup and Tiyar Nestorian tribes returned, they plundered and destroyed everything. In addition, the Nestorians caused great losses to the Kurds in Hakkâri, in Urmia and Selmas in Iran, in Zibar, Nêrve and Rikan regions in Iraq (Wigram, 2004: 490 to 491). Apart from this destruction, when the Nestorians came to the Cukurca region in September 1917, they burned the Çukurca castles and captured an estimated two hundred people consisting of the elderly and children and took them to Urmia. The routes of the transfer of the prisoners were as follows: The village of Mezri in Tuhup region, Baz, Deriye Cehver, Dêz, Xirwate and Urmia (Seyfullah Güzereşi, the interview dated 12.02.2020). Hacı Ahmet Agha was also among prisoners (this person is the father of Macit Pirozbeyoglu, who was prominent in the Pinyanisis of Cukurca in recent history). Hacı Güzeresi and others narrated the experiences of Kurdish captives on the way as follows:

"According to the narratives of the captives, they were taken to Iran, but they were not mistreated by the Nestorians on the way. The Nestorians repeatedly stated that they had a long history with the ancestors of captive Cukurca People. Ahmet Agha, mentioned above, was

released by a Nestorian named Cecikê Tiyari. Mewcê[6] from the Tuhup tribe met with Aga Petrus, one of the Nestorian chieftains, to free the captured Kurds, and Aga Petrus released the captives and sent them back to their homes. However, the captives suffered many casualties due to the cold weather conditions on the way back." (This information was obtained in interviews conducted with people such as Xet Nezan, Hac Dec Abdurrahman, Haci Tuhubi, Abdullah Route, Seyfullah Guzeresi, Haci Guzeresi, Mehmet Zerza on different dates between 2019-2021).

Hacı Abdurrahman narrated Cukurca migration as follows (the interview dated 28.01.2020):

"The vast majority of animals in the Cukurca district of Hakkâri perished due to war conditions in 1916. In the same way, agriculture could not be done. Accordingly, the people living in Çukurca had to migrate to the villages of Spindar and Bêtkar in Iraq due to hunger and misery. But economic and social conditions in Iraq became even worse during the same period. It became difficult for our people to continue their lives in Iraq under these bad circumstances".

The narration implies that the people of Çukurca stayed in Iraq for more than a year.

The situation of the migrating Kurds

Deaths due to poverty also increased significantly in Iraq in 1916. The Iraqi people themselves were also affected by the migration in all respects. According to Ihsan Colemerikli, the Kurds who migrated from Hakkâri took food supplies with them to last for only a few days. After the journey with many troubles, the people of Hakkâri were not provided any help by people in Behdinan region when they arrived there, and many people lost their lives due to diseases similar to the plague. Thus, only two people out of ten in a family were able to survive during the migration (Çölemerikli, 2006: 375). According to Mehmet Zerza, only two women and eight men out of 60 people from his own family, who migrated from Semdinli to the Accra region of Iraq, were able to survive. The rest of them lost their lives due to plague and hunger (Mehmet Zerza and Şükrü Nurçin, the interview dated 07.09.2020). According to the narration of the interviewed people, two thirds of the total emigrating population lost their lives due to the poor living conditions. On the other hand, sheep flocks, which were the main source of livelihood, perished in Iraq due to thirst and hot climate.

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[5] The reason of the exchange is that the Kurds wanted to take precautions against the Russian invasion and the Nestorians wanted to take precautions against the possibility of an attack from the Ottoman Empire. As a result of this exchange, both communities mutually left their crops to each other. The main message of this paragraph is that even during the war period, the Nestorians and the Kurds did not lose hope for each other and expected that historical friendship and neighborly relations would continue as before.

[6] Mewcê's family migrated to northern Syria from the Slemun neighborhood of the Gundik village in Guzeres region. Mewcê himself referred the incident described above to writer Vasfi Ak from Hakkari in 2010.

The return of the Kurds to Hakkâri after the war

Kurds of Hakkâri, who stayed in Iraqi cities between 1915 and 1917, began to return slowly with the outbreak of the Bolshevik Revolution in Russia in 1917. According to Xet Nezan, only residents of ten houses out of a hundred were able to return. When the Kurds returned to Hakkâri in 1917, they tried to live in the ruins of their houses, which the Nestorians burned down and destroyed. After some time following the return, the Kurds tried to improve their deteriorating economic situation with the crops such as corn, barley and wheat seeds that they brought from Iraq and planted them in the ground (Vasfi Ak, the interview dated 20.11.2019). The Kurds who returned settled in a place called Biçer Neighborhood in the center of Hakkâri. The Kurds tried to live in the ruins of their homes and under poor conditions.

It is written in a document belonging to the 1st Branch of the General Directorate of Security that a total of 390 Kurdish immigrants from Hakkâri, including 196 men and 194 women, from one hundred and four houses who migrated from Hakkâri to Mosul in the First World War and then returned, began to rebuild their homes (BCA.TİGM, 272/45-76-8, August 8, 1341, August 8, 1925). As it is understood from this document, the number of people who came to Hakkâri from Mosul province was 390. However, the number of people who migrated to Zaho, Duhok and Baghdad and lost their lives there remains unclear.

According to a document taken from the Internal Coding Secretary of the Ottoman Archive of the Prime Ministry, while the refugees of Gevar (Yüksekova) consisted of five hundred people while migrating, three hundred of them died due to hunger on the roads, the rest was able to survive despite hunger and being unclothed and no one helped them. It was also mentioned that the refugees were treated very badly by the Erbil Refugee Commission (DH. ŞFR. 67/26.001, 16.10.1334, August 16, 1916). There are no Ottoman archive documents that provide statistics on how many Kurds migrated from Hakkâri to Iraq and Iran.

ANALYSIS OF KURDISH MIGRATION IN THE CONTEXT OF CONSTRUCTIVISM

The Nestorians and the Kurds are two peoples who had lived together in Hakkâri mountains for centuries, and only their religions were different from each other. Until the 19th century, there were no significant conflicts between these two peoples, except for petty crimes such as theft and pillage of sheep, which sometimes occurred in villages. Since the middle of the 19th century, the Nestorian leaders fell into a number of negative events with the incitements of external states, which resulted in conflicts with the Kurds, and this situation continued until the First World War. Thus, both peoples had to emigrate from Hakkâri with the war. Migration can have negative consequences due to its nature. When Kurdish migration in 1915 were evaluated with its causes and results, Russia and England mobilized peoples living under the rule of other states by exploiting the characteristics such as religion and ethnic structure, and this migration emerged as a result of the collapse and restructuring of the existing social structure. The social structure of Nestorians and Kurds in Hakkâri had been in tribal forms, and the social structure sometimes was built in disjoining, and sometimes in reconciled dimensions. But the structure did not reach a level that brought breakaways. During the First World War, the existing structure deteriorated with activities of the states intervening in the region in order to occupy more space and spread their political power over a wide area. As a result of these activities, the cultural, historical and social structure accumulated by the Nestorians and Kurds for centuries began to unravel, and social reality was ignored. When the common past, on which social reality is built, disappears in a moment, people become alienated from each other and enter into a position of conflict. In this case, the structure is transformed by an actor in the direction of certain interests. Political and social structures change in accordance with the preferences of the actor. In the same way, social institutions are organized according to the interests of the actor, and, thus, a close relationship is formed between the actor and the structure. The main object that connects the actor and the structure are the rules; when these rules disappear, the structural link between societies decays. The conflicts and migration began when the historically established structure and *de facto* rules between the Kurds and the Nestorians disappeared with the influence of the external states or actors.

When societies live on the same land for a long time, they interact and unite as a result. As a result of this interaction, social and emotional bonds are strengthened. When these values are eliminated by actors who are alien to these social ties and values, the social structure disappears. Nestorians and Kurds developed very similar cultural structures based on common values described above. The reason why the Nestorians entered into the war on the side of Russia in the First World War and why the migration tragedies occurred in both peoples in the subsequent period is that the old structure was changed by the missionaries and a new structure was built. While the previous structure was in the form of historical and social unity between the two peoples, the new structure was based on making the two peoples hostile to each other by mobilizing them in the direction of the goals of missionaries since the 19th century. The activities carried out by the missionaries towards the Nestorians caused the traditional ways of life that they had formed with the Kurds for centuries to change. In this context, the Nestorian-Kurdish relations based on friendship and neighborliness were replaced by new searches and separations of religion and ethnic identity due to the

influence of the actor on the structure. Of course, it should also be emphasized here that the Kurds' old perceptions of the Nestorian people with religion changed with the arrival of Russia to the region. According to constructivist view, no matter how strong the social ties are, because they are socially constructed in the context of religion, culture, identity and interests, they possess a variable structure. For centuries, the Nestorian and Kurdish tribes had developed a common idea by acting together due to the proximity of their living areas. In this regard, it turns out that other elements besides religion are also effective in social unity in Hakkâri. The power struggles of states can also destroy common ideas and thoughts by disrupting social unities. While Russia was planning to radically change the social structure in the region through religion by taking the Nestorians on its side, the Kurds from Hakkâri found a way to emigrate in order not to be a party to this structure. From the beginning of migration in Hakkâri in May 1915 until the end of returns in 1917, the Kurds lost a large part of their population on both the migration routes and in Iraq. In the same way, the Nestorians suffered a large number of losses both in the war and during and after the migration.

The fact that these two communities had lived together in peace for centuries, formed an environment for cultural richness. Although Nestorians and Kurds have their own language, their own way of life and beliefs, the Hekariyan identity formed by the social life in Hakkâri became more prominent in the life of both peoples. In addition to the common belonging of the two peoples, aspects such as their aspirations, utopias, imagining themselves, and establishing a relationship with life became determinative of Hekariyan identity. However, this identity underwent a change with the forced migration in 1915. The main factor behind the loss of identity was that the actor or actors changed the social structure in Hakkâri. However, since this identity is based on a long historical past, it still maintains its vitality in the context of coexistence practices in the Kurdish region of Northern Iraq today. Although both peoples in Hakkâri were forced to emigrate due to clashes brought by differences such as religion, nationality and language before 1915, the unity in the historical genes of both peoples has blossomed again in Iraq. In this sense, even if the concepts of structure-actor referenced from constructivism cause social divisions, concepts such as identity, culture, idea, value ensure the continuation of social reconciliation. Therefore, although the Kurds suffered great pain and losses as a result of the Kurdish migration, the conditions for meeting Kurds and Nestorians or ethnically Assyrian people on a ground from the constructivist point of view still existed. Constructivism's view on identity implies that identity changes direction according to interests, but this rule was valid only during the war period in Hakkâri. After the migration, the above-mentioned Hekariyan identity of the Nestorians and Kurds revived again. For example, even today, the Nestorians living in Northern Iraq refer to

themselves by the name of villages such as Tiyar, Baz, Tuhup in Hakkâri. This situation is a proof that both space and past belongings have an unchangeable effect on identity. The main point in identity is that whichever of the belongings such as religion, language or culture that the societies belong to is in danger; identity becomes the main actor against the dangers. With this perspective, religious identity was at the forefront in Hakkâri during the First World War, whereas culture, coexistence and historical background were the elements of the identity during the pre-war period. All of these explanations emphasize the variable nature of identity in constructivism.

One of the areas where identity has an impact on migration is the direction of migration. The Kurdish migration that started in Hakkâri in 1915 was in the direction of the Northern Iraq. The main reason was the high density of people living in that region that adhere to the Kurdish ethnic identity, and the expectation that the Kurds who migrated from Hakkâri would receive economic support and be safe there. From a constructivist point of view, the migration of Kurds to Iraq was correct, but due to the conditions during the war, the Kurds living in Northern Iraq did not provide significant aid to the migrant Kurds, either economically or in terms of security. Safety is one of the main factors of forced migration. Although Kurds also migrated from Hakkâri because of insecurity, they were not able to find secure environment due to the housing and nutrition problems and diseases in the places where they migrated. On the other hand, the Nestorians who migrated from Hakkâri also migrated first to the Iranian lands dominated by Russia with the influence of religious identity. When the revolution broke out in Russia, the Nestorians migrated to the Iraqi lands dominated by the British. The direction of this migration is also evaluated as the feeling of security related to identity. However, both migrations to safe areas resulted in negative consequences.

Power, in the political sense, is the ability of other people to influence people in a different direction from their own preferences, that is to say, to have influence over the other. Physical or mechanical power is the ability to carry out one's own ideas and actions through someone else. When the issue of migration is evaluated in this context, it can be concluded that the migration that took place in Hakkâri in 1915 was aimed at causing conflicts between and separating the neighboring peoples in order to achieve a certain goal. Therefore, the external influences on the Nestorian people were realized in accordance with the power policies of the states that wanted to establish dominance in the region through them. Russia, whose main policy in the region was to expand the territories into the warm seas, pursued a policy of pulling the Christian peoples living in the Ottoman Empire to its side.

However, Russia started to occupy Eastern Anatolia by claiming that "these people were massacred, the

Ottoman State did not give them their rights, and the future of the Nestorian people was under its own protection. As soon as the Kurds heard that the invasion had started, they emigrated to save themselves. During this period, the majority of the Ottoman soldiers fought on fronts such as Çanakkale, Gallipoli, Sarıkamış and Syria, so there were no soldiers in places such as Hakkâri. Therefore, the Kurds of Hakkâri had to defend themselves when the First World War began. However, since they could not cope with the large tribes of the Nestorians (Tiyar, Tuhup), migration was considered the most reasonable solution. In addition, the Kurds of Hakkâri realized that it was not possible to resist Russia, which had the powerful armies of the time. Asymmetric elements of war such as power, interest and structure-actor relations became dominant over the constructivist concepts such as idea, identity and culture.

CONCLUSION

There are different theories that evaluate the concept of migration both from the point of view of international relations and political science. Some of these theories approach migration from a state-centered perspective of war, conflict and power; while others present a normative perspective with concepts such as identity, culture and social reality. In this study, a reading of the Kurdish migration that occurred in Hakkâri in 1915 was made with constructivism or social constructionist direction. Although there are many studies on the migration of Nestorians, the issue of Kurdish migration was discussed for the first time in this study. In particular, there have been many complementary narratives about the Kurdish migration in Hakkâri that have not been the subject of written texts. It has been found in these narratives that many negative situations happened during the migration process. The loss of lives experienced during the migration and the situations they encountered when they returned still remain vivid in people's memory. The narratives obtained about the Kurdish migration in Hakkâri through field research have been transformed into a scientific study. The migration stories of isolated societies can be brought to light through narratives or testimonies. Especially in the periods when there was no press or publication, the witnesses of events people experienced are the people themselves. Therefore, a researcher needs to interview the people themselves or the generation after them who are faced with events such as war or migration. Otherwise, as time progresses, narratives can be forgotten. Although the Hakkâri migration took place one hundred and seven years ago, there are many narratives about the migration. Nevertheless, these narratives are remembered only by the pre-1980 generation. The next generation has remained indifferent to these narratives. Therefore, there has also been a significant decrease in the number of people who remember the migration event.

In the study, it was found that Hakkâri migration remains in the minds of some people who are still living in the neighborhood. The basic perception of people about migration in their minds has been that the old experiences have been disrupted by external influences. In addition, in the study, it was observed that the unity of neighboring peoples on common cultures and ideas was disrupted due to religious and ethnic differences. As stated in the question of the study, the researchers tried to determine people's perceptions of the past through their narratives. The research has revealed negative aspects of the Kurdish migration of 1915. As a result, it is understood that historical and social dynamics are important in the unity of people, and social collapse and migration arise after the destruction of these dynamics.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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APPENDIX

Appendix Table 1. List of Interviewees.

Name or Nickname of the Interviewee	Where he/she lives	Age	Job
Dr. Odisho Melko Georgis	City of Dohuk, Northern Iraq	60	The Member of the Assyrian Writers Association
Vasfi Ak	Hakkâri		Writer
Kurdish Tiyari	Van	75	Retired Employee
Hasan Oramari	Yuksekova	80	Freelancer
Hacı Marufi	Guzeres Village, Hakkâri	80	Freelancer
Xet Nezan	Hakkâri	81	Writer
Abdullah Güzereşi	Hakkâri	80	Artisan
Seyda	Hakkâri	65	Retired Imam
Hoger Tahir	Duhok	50	Academician
Hacı Colemergi	Hakkâri	52	Civil Servant
Hacı Hasan Oramari	Yuksekova	75	Freelancer
Esfendiyar Diri	Yuksekova	65	Opinion Leader
Mehmet Zerza	Semdinli	55	Researcher
Abdullah Güzereşi	Hakkâri	70	Artisan
Seyfullah Güzereşi	Hakkâri	55	Employee
Hacı Abdurrahman	Hakkâri	80	Freelancer
Vasfi AK	Hakkâri	55	Researcher

Source: Authors

Appendix-2: Interview Questions

The questions to the interviewees were as follows according to the flow of the subject.

- In your opinion, what were the reasons for the migration that took place in Hakkâri in 1915?
- What was the direction and intensity of the Kurdish migration?
- As far as you have heard, what problems did emigrants encounter?
- How was the attitude of the local people towards the immigrants?
- How many years did they stay at the migration destination?
- If there were casualties in the migrating place, what were the reasons?
- How many of the people who emigrated were able to come back?
- What did the emigrants encounter with when they returned to their homeland?

International Journal of Sociology and Anthropology

Full Length Research Paper

A model of cultural intelligence to reduce deficit talent: A comparative study between Taiwan and Vietnam

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This paper raises the discussion on the importance of finding a balance between knowledge and experience by developing the Cultural Intelligence – (CI) of Taiwanese students, the victims of brain drain. In order to explain the impact of CI on Knowledge Management (KM) and Organizational Intelligence (OI), this work explores the development of a CI model based on KM and OI (CKI model) and changes the "culture of student's dependence" and therefore reduces the talent deficit in Taiwan. The CKI model is constructed based on the results of 35 interviews in 4 Taiwanese and 2 Vietnamese Universities and empirically tests 3 hypotheses through structural equation modeling (SEM). The main finding is that intelligence is more important than knowledge to foster development. Germany is a good example, given the highest level of cultural intelligence developed after the Second World War to reconstruct the country.

Key words: Brain drain, cultural intelligence, Industry 4.0, knowledge management (D80), national culture, organizational intelligence.

INTRODUCTION

In line with the ex-chancellor of Germany, Angela Merkel, this work found that the multiculturalism, along with some innovations of Industry 4.0, leads to economic growth.

However, even though Taiwanese President refuses to accept Beijing's policy that the island is part of 'One China', Taiwan has one of the biggest talent deficits in the world, opening more doors for the communism in the era of smartphones, social networks, COVID, and isolated wars.

Ku (1999) found that since the early 1990s, both sides, Taiwan and Vietnam have improved their political and economic relations. Economists contend that Taiwan's expanding investments in Vietnam play a key role behind this change. Authors argue that Taiwan authorities are using the island's economic resources in exchange for political gains from Vietnam.

The brain drain in Taiwan is bringing additional problems and is motivating the parents and professors to change the culture and perhaps let the genius students be intelligent (application of knowledge) by dealing with complexity of knowing other cultures through academic exchange programs.

Given the fact that the only way of young people from Taiwan to see through attempts of China to politically manipulate them is by the development of cultural intelligence, this study demonstrates that the perception

of parents and professors from Taiwan, who consider the super protection of the students as a solution to the pressure for unification from China, is not the most reasonable one and it is the main reason for the ongoing threats from China (Diaspora).

According to the International Institute for Management Development (IMD), Taiwan faces various challenges, including enhancing its international cooperation as well as needs to cultivate, retain and recruit digital talent. It also needs to foster social cohesion and social inclusion.

In the 2023 edition of the QS World University Rankings, it is possible to observe in the list of 100 best universities of some institutions from Asia: National University of Singapore (NUS) in position 11°; Peking University, China, in 12°; followed by Tsinghua University (China) in position 14°. The National Taiwan University (NTU) is in the 77th position.

The metrics taken into consideration in the QS ranking are the following: internationalization; International Faculty Ratio; International Student Ratio; Inbound Exchange Students; and Outbound Exchange Students.

As a consequence, striving for collaborative entrepreneurship education is more than a material endeavor for universities and industries in Taiwan. It represents the integration and deep alignment of different capacities: technical, managerial, intellectual and emotional. In particular, qualities such as patience, self-awareness, emotional resilience, motivation, enthusiasm, and sensitivity to others are paramount to developing a collaborative entrepreneurship program between university and industry using, at the University level, Knowledge Management (KM) practices, in particular mentoring, best practices and lessons learned.

This program encompasses, at the industry level, the advantages of Industry 4.0, based on high-quality education with high digital literacy, in changing how human beings work, live, communicate, thrive, and survive. In other words, Industry 4.0 disrupts societies.

Improvements in environmental sustainability, profit margin, higher innovation capacity, higher production control, labor productivity, reduced time-to-market for products, reduced waste, improved energy consumption, and avoiding harmful emissions are examples of benefits under the Industry 4.0 label (Oztemel and Gursev, 2020; Zheng et al., 2021).

The challenge is in preparing people for the era of Industry 4.0 and, therefore, the level of maturity of the students plays a very important role.

In this regard, it is paramount to change the relationships in Taiwan: students-students, students-parents, students-professors, and universities-government.

According to Ito et al. (1998), the ability to sense what other people are feeling is an important factor in allowing us to connect or communicate effectively with others and depends to a great extent on the establishment of a spontaneous entrainment between individuals.

Entrainment is considered as one of the fundamental processes providing an intimate connection between individuals, others, and their environment (Childre and Martin, 1999).

Awad and Chaziri (2004) have found that knowledge is human understanding of a specialized field of interest that has been acquired through study and experience.

The difficulty of Taiwanese industries in accessing the academic knowledge and the lack of practical experience of Taiwanese students shows the importance of a student exchange program with other countries with more experience, such as Vietnam and Germany. Cultural intelligence impacts Knowledge Management and Organizational Intelligence by encouraging knowledge to be created, shared, learned, enhanced, organized, and applied for the benefit of both, universities and industries.

As Taiwanese students are not likely to share knowledge without a strong personal motivation, which comes from the opportunity to understand the world (cultural intelligence), the goal of this study is to show the importance of the balance between knowledge (Taiwan) and experience (Vietnam) to facilitate the process of creation and application of Knowledge in both, Universities and Industries.

Even though examples of entrepreneurship education through university–industry collaboration can be seen in several universities in diverse countries (Etzkowitz and Leydesdorff, 2000; Barr et al., 2009; Janssen et al., 2007; Meyer et al., 2011; Lundqvist and Williams-Middleton, 2013), collaborative education between universities and industries has not been sufficiently studied to offer clear models and practices to foster effective knowledge exchange and then the creation and application of the new knowledge between these two groups.

Therefore, this article proposes the Culture – Knowledge – Intelligence model (CKI) to understand the high impact of Cultural Intelligence on Knowledge Management and Organizational Intelligence, and, as a consequence, the importance of the right balances of knowledge (Taiwan) and experience (Vietnam).

This impact depends on the personality factors. While Taiwanese are traditional and attached to their families, Vietnamese are more flexible and open to new experiences. In contrast to Vietnam, the frame of orientation for Taiwanese is not religion or personal philosophies, but government rules and professors' control, along with the fact that Taiwan belongs to Confucian Asia (a long period of creation of knowledge without necessary application). This is the reason that they are well known as genius kids with low levels of cultural intelligence (they learn with from other cultures), which in the long term provokes in the middle term a high level of brain drain.

The weak points of Taiwan are their expressive ties with people of other nationalities (cultural diversity) and the ability to understand the internal and external environment (cultural intelligence) of foreign companies.

Some parents and professors were unable to understand and explain to Taiwan's younger generation of the Chinese plan to offer attractive study and work opportunities to Taiwanese local leaders and youth groups every year through invitations to mainland camps and cultural activities. Since the Taiwanese are overprotected by their families, schools, and universities, as a defense mechanism against the Chinese government, they end up not being able to develop other types of relationships, such as business, and engage in undergraduate, master's, and doctorate programs in other countries, which would give them the necessary maturity to start their own companies.

Because of the shame of relating to people with more experience, or even without access to them, they end up spending many hours on the internet, and to try to relax from the high pressure of the university, they spend many hours on social networks, where they end up adapting to and believing in fake news.

Due to the over-protection of parents and teachers, the Taiwanese usually live a virtual life, which takes them away from intelligence (application of knowledge) and frustrates the students by moving (backward) from knowledge to an avalanche of information (social networks), much of it false and/or with no use even to add in their knowledge.

This article is structured as follows: In addition to this introduction and the conclusions, Section 1 explains the juxtaposition between Knowledge Management and Organizational Intelligence. The Section 2 describes cultural intelligence as a tool to reduce the brain drain in Taiwan. Section 3 presents the model of Cultural Intelligence, Knowledge Management and, Organizational Intelligence, combining the various theoretical elements gathered throughout the previous sections.

The integration of knowledge management and organizational intelligence

Davenport and Pruzak (1998) conducted an important study about the differences among data, information and knowledge.

Data is a set of discrete, objective facts about events. In an organizational context, data are most usefully described as structured records of transactions.

Like many researchers who have studied information, we will describe it as a message, usually in the form of a document or an audible or visible communication. As with any message, it has a sender and a receiver. Information is meant to change the way the receiver perceives something, and to have an impact on his judgment and behavior. Most people have an intuitive sense that knowledge is broader, deeper, and richer than data or information.

Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a

framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. What this definition immediately makes clear is that knowledge is not neat or simple. It is a mixture of various elements; it is fluid as well as formally structured; it is intuitive and, therefore, hard to capture in words or understand completely in logical terms (Davenport and Prusak, 1998).

The transformation of knowledge into intelligence is an operation accomplished by the human capacity to interpret, analyze, integrate, predict, and act (De Angelis, 2016).

The information is analyzed in the context of the personal standards, criteria, and expectations of the decision-maker to become knowledgeable. Finally, the decision-maker applies this knowledge to a particular situation to create intelligence.

Rothberg and Erickson (2004) clarify that knowledge is socially constructed through collaborative activities, but access to this knowledge does not mean success in decision-making, since knowledge without application is innocuous. In summary, knowledge is the foundation for intelligence, since intelligence is knowledge in action to solve problems.

Bali et al. (2009) define Knowledge Management (KM) as a set of tools, techniques, tactics, and technologies designed to leverage the intangible assets of the organization by extracting data, pertinent information, and relevant knowledge to facilitate decision-making. KM is a set of practices aimed at the interaction between tacit and explicit knowledge to acquire and create new competencies (knowledge + skills + attitudes) to enable an organization to act intelligently (transform complexity into meaningful simplicity) in different environments (De Angelis, 2016).

Knowledge management has raised expectations. In the OECD (2003) survey, the following widely perceived expectations have been cited:

1. Releasing information more rapidly and making it available more widely to the public;
2. Improving working relationships and knowledge sharing with other organizations;
3. Improving work efficiency and/or productivity by producing and sharing knowledge;
4. Minimizing or eliminating duplication of efforts between divisions;
5. Compensating for knowledge loss (due to shorter staff turnover, future retirement, etc.); and
6. Promoting life-long learning.

Knowledge management practices are grouped into three dimensions as proposed by Misra (2007): people, processes, and systems. The practices selected to reduce the brain drain are: Mentoring, best practices, and lessons learned.

In general, scholars suggest that governments need to

ensure that science is at the forefront of their strategy for economic recovery and economic growth. For them, science produces knowledge and therefore produces innovation, which improves the quality of life, democracy, economic growth, and the ability to solve larger problems. However, it seems that the passage from knowledge to innovation is not so fast. Rothberg and Erickson (2004) hold that knowledge is static and, ultimately, it only has value if people use it.

Knowledge implies that learning and experience have been applied to information, but it does not imply an action. The transformation of knowledge into intelligence can be said to be an operation accomplished by the human capacity to interpret, analyze, integrate, predict, and act.

Choo (2002) defines Organizational Intelligence (OI) as a continuous cycle of activities that includes sensing the environment, developing insights, and creating meaning through interpretation, using the memory of the experience to act on the developed interpretations. OI refers to a process of turning data into knowledge and knowledge into action for organizational gain (Cronquist, 2011).

De Angelis (2013) considers OI as the ability of an organization to adapt, learn, and change in response to environmental conditions through the use of relevant knowledge.

OI appears to be used to refer to the organization's ability to process, interpret, handle, and access information in an intentional and directed way to the organizational objectives, thus increasing its adaptability in the environment (Glynn, 1996: Istudor et al., 2016). In this sense, OI results from a systematic processing of information and knowledge available internally in the organization and in its external environment and is used to improve the organization's ability to predict the future and adapt to changes in the environment (Istudor et al., 2016).

OI is an organization's ability to develop efficient behavior in response to the adequate reaction to the dynamics and uncertainties of the environment, thus determining their capacity to create and time knowledge in a strategic way to adapt to the market environment (Istudor et al., 2016).

This definition considers that the OI is adaptive and a social result (Glynn, 1996: Yaghoubi et at., 2011), that is, it is modified according to environmental conditions (internal and external), in order to solve the problems, meeting the defined objectives, and responding appropriately to environmental challenges (Glynn, 1996)". OI influences some behaviors considered socially accepted, such as the good relations of the individual with their work colleagues and family, and therefore are considered as an important capacity for the work environment.

The Organizational Intelligence (OI) practices are used to improve the interpretation and synthesis of the knowledge generated by expert analysis, intelligent systems, and advanced techniques, such as competitive hypothesis and modeling using structural equations. OI tools combine a mix of socio-technical elements from (a) subjective assessments of the online discussion led by facilitators and subject matter experts with (b) real-time feedback from data mining and semantic analysis of the online discussion. OI tools contribute to deep structural changes and transformations in the social climate, the collaborative culture, and the role of internal collective intelligence (Chauvel et al., 2012). The idea behind OI tools is to transform crowdsourcing models that apply the "wisdom of crowds" into the "wisdom of experts" to solve complex problems.

Despite the intuitive appeal that the concepts of KM and OI are complementary and interdependent, this relationship has received relatively little attention in the literature. For Halal and Kull (1998), OI is a function of five cognitive subsystems: organizational structure; organizational culture; stakeholder relationships; strategic processes; and KM.

Liebowitz (1999) emphasizes that active knowledge management is critical to enable organizational performance improvement, problem-solving, and decision-making.

Based on these perspectives, it can be concluded that KM provides methods for identifying, storing, sharing, and creating knowledge, while OI integrates, analyzes, and interprets this knowledge for decision-making and problem-solving.

Bourgon (2009) holds that governments do not have sufficient resources, internal skills, and intelligence to effectively respond to the needs of citizens in a rapidly changing environment. Therefore, the public value is not provided only by the government but by collaboration. Sharing power, opening up the decision-making process, forging new relationships, and partnering on service delivery are the foundations of 21st-century government (Bourgon, 2009).

This involves dealing with complex issues, many of which, according to Ho (2008), have the characteristics of "wicked problems" in the unpredictable context of a modern global economy and corporate network, where several players are acting simultaneously. As can be seen in Figure 1, in the "new synthesis of public administration," intelligence and resilience are the foundation for meeting the challenges of the future.

In a world increasingly unpredictable and complex (crises, pandemics, wars), a profound cultural change in the Taiwanese society is necessary—from people-to-phones to a person-to-person approach—taking advantage of personal intelligence in different cultures. A strong example of cultural change can be considered as Russia.

Chimenson et al. (2022) after Perestroika, group orientation were increasingly replaced with a focus on individualism. The rise in wealth of the "New Russians"

Figure 1. A New Synthesis of public administration (adapted from Bourgon, 2009).
Source: Bourgon, 2009.

(Balzer, 2003) and the emergence of the first oligarchs may have motivated some people to pursue wealth by any means, including engaging in criminal activities, such as drug trafficking and prostitution. Many traditional connections between relatives and friends were broken, resulting in a weakening of familial ties. Perestroika and market reforms contributed to dramatic shifts towards individualism.

Cultural intelligence as a tool to reduce the brain drain

Geertz (2000) was particularly interested in the different aspects of collective action towards social problems and therefore both revived and transformed the anthropological concept of culture in such a way as to make evident its relevance to a range of humanistic disciplines. He changed the direction of thinking in many fields by pointing to the importance and complexity of culture and the need for its interpretation.

Geertz (2000) also investigated the impact of the concept of culture on the concept of man, the growth of culture, the evolution of the mind, and the religion as a cultural system. His work goes in the direction of the fact that culture impacts more than genetic and personality in the decision-making process.

Schein (1985) defines "culture" as a pattern of shared basic assumptions that the group has learned to use in solving its problems of external adaptation and internal integration. This pattern has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think, and feel about these problems (Schein, 1985).

Yang et al. (2022) consider that the world needs wisdom that transcends cultural boundaries—wisdom that not only benefits the members of one's own culture, but also those of other cultures.

Bouchard et al. (1990) conducted studies on monozygotic twins reared separately, which showed that 70% of the variance in IQ was found to be associated with genetic variation.

However, Kroeber and Kluckhohn (1952) points out that the contribution of Kroeber and Kluckhohn (1952) to expanding the concept of culture is based on two facts: Because the human instincts were partially offset by a long evolutionary process, culture, rather than genetic inheritance, determines human behavior and justifies their achievements.

Nowadays, it is outdated to think of one thing over another or propose that genes are more important than culture or vice versa. Furthermore, the vision of "instinct" (the 40s) has already been outdated for some time and certainly no longer fits this deterministic and dichotomous

statement in the biological and medical sciences of the twenty-first century. It is ever day more clear that culture impact many more decisions than genetics and personality, because during turbulent times (crises + pandemics + wars), the impact of culture on knowledge and knowledge on intelligence is visible in the actions of people (by comparison).

Cultural intelligence, unlike emotional intelligence, considers cultural context, and therefore focuses on collaboration, and on internal and external participants to learn from other values, beliefs, assumptions, and traditions.

Cultural intelligence refers to a general set of capabilities with relevance to situations characterized by cultural diversity. Emotional intelligence, therefore, differs from cultural intelligence because it focuses on the general ability to perceive and manage emotions without regard to cultural context (Ang et al., 2007).

Lückmann and Färber (2016) assert that a third global projects fail due to miscommunication resulting from a lack of cultural understanding and awareness. It seems that while leaders have historically relied on technical project management structures, insufficient attention has been paid to the management of different cultures in project teams. This deficit needs to be addressed

Bucher (2007) concludes that CI is about awareness of our values and those of others, and the relationships between people's values, behaviors, and cultural backgrounds, and Rockstuhl et al. (2011) contends that theory and research suggest that CI facilitates expressive bonding and shows the value of cultural intelligence as a critical leadership competency in today's globalized world.

Kilduff and Cormican (2022) found that Cultural intelligence can be learned and developed over time. Therefore, project leaders working in global environments that are open to learning are more likely to develop their cultural intelligence. Research suggests that expatriates that are more culturally adjusted are open to the host country's norms and behaviors has also shown that openness is positively related to cultural intelligence and has been recognized as a key personality trait for cultural intelligence.

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Alexandra et al. (2021) found evidence that individuals' Cultural Intelligence predicts their perceived inclusion in their workgroup. Moreover, individuals' perceived inclusion is associated with further development of Cultural Intelligence, especially for individuals who perceive greater cultural diversity in their workgroup. By looking beyond commonly suggested antecedents of Cultural Intelligence such as international travel and work experience (Fang et al., 2018).

Theoretical arguments suggest that senior executives who are more culturally intelligent are better able to scan their environments for relevant and accurate information and use this higher-quality information to make better decisions and take better-calculated risks (Ang et al., 2007).

One reason CI increases job performance is that it results in better judgment and decision making. An important cognitive outcome is cultural judgment and decision-making, which refers to the quality of decisions regarding intercultural interactions (Ang et al., 2007). Indeed, the meaning-making process manifests itself and is mediated by cultural contexts (Rockstuhl et al., 2011).

Cultural intelligence is related to the formation of expressive bonds with people of other nationalities, leadership competence, and the ability to understand the internal and external environment, thus having the capacity to better judge what has happened, what is happening and what may happen.

Cultural intelligence also has been linked to positive individual-level outcomes in culturally diverse contexts, including performance (Lisak and Erez, 2015), interaction quality (Charas, 2015), interpersonal trust, work engagement, and innovation (Afsar et al., 2020).

Global projects and teams have led to an increasing need for leaders who can operate effectively across multiple cultures. Research has suggested that leaders' personality plays a significant role in determining their effectiveness working across cultures (Rothacker and Hauer, 2014). Project leaders who have predisposing characteristics such as extraversion, experiences in other countries and cultures are considered to be good candidates for global leadership roles.

Taiwanese professors with the strategy of protecting their students from the complexity, of China's treats, and the development of cultural intelligence (learning by comparison with other cultures), has decreased their capacity to open companies in Taiwan.

Cultural intelligence has a strong impact on the processes of knowledge creation and application. This occurs because, by being connected to other cultures, it is also connected to other ways of thinking and acting, which increases the ability to create relevant knowledge and apply it collectively, given the greater integration in the new community when the first cultural barriers are overcome.

Learning with other assumptions, beliefs and values brings maturity to transform complexity into simplicity, as

in the case of Germans, who know several languages and cultures before starting university and therefore develop a high capacity to start businesses and today is one of the countries that receives more people due to the phenomena known as "brain drain" due to lack of opportunities in the country of origin and diaspora due to conflicts of various kinds, mainly wars.

Taiwanese students are extremely protected by families, teachers and government. Therefore, Taiwanese students are not motivated to study abroad; their level of experience is too low, and also their self-awareness. Even though they appear to pay attention to a visitor's views, they reject ideas that require them to leave their comfort zone in Taiwan.

Their higher level of uncertainty avoidance can be seen in their reluctance to explore foreign cultures, a form of risk-taking and cross-cultural adjustment.

They like to receive from other nationalities, but they do not want to leave the country to really learn with them. This welcome approach is a naturally reaction against the Ming Dynasty (military base) restored by Zheng Chenggong, (Koxinga) after 38 years of Dutch rule on Taiwan.

According to Vietnam Chamber of Commerce and Industry (VCCI) President, Vu Tien Loc, Vietnam has become an attractive business and investment destination for many foreign companies from Taiwan, thanks to its notable advantages, including a high economic growth rate, political stability, and its strategic geographic location.

As of the end of 2017, Taiwan has invested a total amount of 30 billion USD into 2.500 projects in Vietnam, which makes it the 4th biggest foreign direct investor. In Binh Duong province, where the VGU is located, Taiwanese companies invested into 772 projects with a capital volume of nearly 6 billion USD. Even they had to suffer certain difficulties and damages during the short period with the anti-Chinese attitude in 2014 in Vietnam, Taiwanese companies still find great potential in investing in the long term.

The challenge for Taiwan is developing the capacity to apply knowledge, given the fact that other countries are taking the knowledge of Taiwanese employees to fire them afterwards. Curricula for teacher training should incorporate and promote factors such as openness to intercultural interaction and intercultural learning; readiness to recognize and utilize multiculturalism and cultural diversity as a learning resource and also create international teachers' exchange programs (Petrović, 2011) before students' exchange programs, such as ERASMUS PROGRAM in Europe. One solution to reduce the high brain drain and economic crises in Taiwan should be the interference of the government and university´s leaders by changing the process of selection and development of professors.

Taiwan can learn with Vietnam and create a partnership with the German Academic Exchange Service (DAAD) (medium-term stays, Master and Doctor Programs) or

even talk with other countries in Asia to create a program similar to ERASMUS (short-term stays, part of the Bachelor program).

Endes (2015) holds that Erasmus Program is a student exchange program carried out within the frame of the agreements between higher education institutions of European Union countries and the candidate countries to provide the outgoing students with new abilities and different experiences.

By encouraging the higher education institutions to cooperate with each other, Erasmus Exchange Program aims to allow students to study abroad and to recognize European countries and cultures; contribute to the strengthening of communication and cooperation between countries; develop and popularize of European standards in education; improve the quality of higher education. The programme also aims to raise the equipped individuals who will fulfill the expectations of business world and the universities that provide qualified higher education services.

One of the meetings to collect relevant knowledge for this article was with Ms. Huynh Dinh Thai Linh, Regional Manager of the Hinrich Foundation in Vietnam, about opportunities for the Vietnamese students to get scholarships for exchange programs in Germany and other foreign countries. Students are highly motivated to participate into contests for innovation and entrepreneurship, with awards like the Best Innovator Prize.

Dr. Bernd Tilp, Director of DAAD office in Ho Chi Minh City, pointed out that over last year until now; Vietnamese students are very keen on the opportunities to study abroad at German universities. To meet the high demand of those students, the DAAD opened two offices instead of only one, as in many other South East Asian countries.

According to Dr. Dinh Hai Dung, Coordinator of a Master's study program at VGU in Vietnam, approximately 20% of students at this university travel to Germany each year to complete their master's thesis under the supervision of a German professor.

Mr. Henning Hilbert, the Vice Director of the Goethe Institute in Vietnam, confirmed that the demand for students to learn German language and prepare for their undergraduate studies in Germany has increased dramatically, and as a result, the Goethe Institute has recently been mostly overburdened.

Taiwan is also experiencing a high brain drain due to its flawed educational system. The system focuses too much on grades, which is a huge problem in itself because, somehow, it limits creativity and diversity.

Exchange academic Programs, such as those established by China and Germany to bring outside knowledge into the country, can also contribute to Taiwan's becoming a more collaborative and intelligent country.

Based on the program of academic exchange and the attraction of many workers, China is the country that has changed the most in culture in recent years. They also

received several universities, in particular from the UK, France and Germany, the most international countries in Europe. This is also the reason why China is growing at 7% per year while Taiwan is only at 2%. The third alternative is a program of startups in association with Universities, Government and the private sector.

Clopton (2011) made a content analysis of a U.S. social entrepreneurship (SE)–focused graduate management program that examined the intersection of SE key competencies and SE practices. Results show that social capital is manifest in SE practices that work both internally and externally to define the SE field and foster meaningful SE education.

Four patterns of practice are crucial to creating accessibility and engaging social capital exchanges: institutional practices that instill an active and outward-facing institutional presence; practice of a student-centered organization that bridge and link entrepreneurs; valuation practices incorporating sustainability; and persistent external engagements (Clopton, 2011).

These initiatives should be made in parallel to the other three improvements in the education system of Taiwan: 1) embrace diversity and interdisciplinary, 2) develop managerial competence, 3) create foresighted thinking (foster foresight).

According to Clopton (2011), universities, as the entities that educate future actors and stakeholders, can also affect change that extends beyond their own doors. Education for sustainable development (ESD) is an attempt to empower today's students with attitudes, abilities, and the responsibility for creating a sustainable future (Clopton, 2011).

UNESCO Bangkok (2018) holds that all levels and types of learning to provide quality education and foster sustainable human development should be in place in the intersection of education and business – learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society.

A model of cultural intelligence, knowledge management and organizational intelligence

In line with the previous literature, the results of this study suggest that the development of an organizational culture (National Culture in a macro level) supports the application of KM practices (Davenport and Prusak, 2000; Nonaka and Takeuchi, 1995; Gold et al., 2001; Janz and Prasarnphanic, 2003; Lee and Choi, 2003; Donate and Guadamillas, 2010). Selvi and Murthy (2021) confirm that organizational culture is a vital business framework for interaction.

How things are done and how people behave and act(culture) directly influences the goals, mission, vision, processes, responsibilities, design, communication, learning, technology, and so on. The statement "culture eats strategy for breakfast", attributed to Peter Ducker, highlights the importance of culture in providing the

context for the formulation and implementation of strategies (Ireland et al., 2002; Farjoun, 2002). Culture also has an important role in creating conditions for learning with internal and external environments.

Taiwan's cultural context has been shaped by the decisions and actions of its people. Beginning in the 1980s, Taiwan underwent rapid industrialization, economic growth, and political reform (Hwang, 2015). As Weller (1999) noted, "The really stunning recent political change has been Taiwan's move from authoritarian control totrue democracy beginning in the late 1980s" (1). Contemporary Taiwan is considered to be "the first and only democracy yet to be installed in a culturally Chinese society" (Chu, 2012:42).

Taiwan belongs to Confucian Asia, form also by Singapore, Hong Kong, South Korea, China, Japan (House et al., 2004). This is one of the reasons that Taiwan received completely different scores in comparison to Vietnam in two important Hofstede's Cultural Dimensions (Hofstede, 2001): uncertainty avoidance (Taiwan 69, Vietnam 30) and long-term orientation (Taiwan 93, Vietnam 57). These countries are also different in terms of performance orientation, institutional collectivism and in-group collectivism as demonstrated in Table I. This research empirically tests three hypotheses (Table 2).

RESEARCH METHODOLOGY

In this study, the relationships between the variables (hypotheses) were empirically tested using structural equation modeling (SEM). SEM is a technique combining elements of both multiple regression and factor analysis that enables the researcher not only to assess quite complex interrelated dependence relationships but also to incorporate the effects of measurement error on the structural coefficients at the same time.

There are two approaches to estimating the parameters of a SEM (types of SEM techniques): the covariance-based approach (CEB-SEM) (e.g., LISREL) and the variance-based approach (PLS-SEM) (e.g., partial least square path modeling).

Because of its prediction orientation, PLS-SEM is the preferred method when the research objective is theory development and prediction (Hair et al., 2005). Furthermore, Henseler et al. (2009) hold that the sample required (to reach the same statistical power) for the CFA-PLS is lower than for the CB-SEM, and in the PLS-PM, there is no assumption of normality of the variables. PLS is a family of alternating least squares algorithms that extend principal component and canonical correlation analysis (Henseler and Sarstedt, 2012). According to Schreiber et al. (2006), SEM, in comparison with confirmatory factor analysis (CFA), extends the possibility of relationships among the latent variables and encompasses two components:

(1) A measurement model (essentially the CFA); and
(2) A structural model.

Data collection

After a wide range reviews of theoretical and empirical research and survey methods, this research adopted a web survey to obtain input from targeted respondents and achieve the objectives of this research project. The use of key informants from organizations for

Table 1. National culture dimensions in Taiwan and Vietnam (Globe, 2004).

National Culture Dimensions	Taiwan	Vietnam
Uncertainty avoidance	high	low
Performance orientation	high	low
Institutional collectivism	high	low
In-group collectivism	high	high

Source: Hofstede (2001) and House et al (2004).

Table 2. Hypotheses in the CKI model.

Hypotheses	Sources	Results and gaps to be filled
H1) CI influences KM positively	De Vita (2001), Kennedy (2002) and Tweed and Ledman (2002) suggested that by influencing the way individuals perceive, organize and process information, the way they communicate with others and the way they understand, organize and generate knowledge and solve problems, culture is inextricably limited to learning approaches and preferences.	Supported
H2) CI influences OI positively	Akgun et at. (2007) argue that OI is an everyday activity that is cognitively distributed and demonstrated by people's behavior, their culture and their organizational routines.	Supported
H3) KM influences OI positively	The active management of knowledge is critical to enabling organizational performance enhancements, problem-solving and decision- making (Liebowitz, 2001)	Supported

Source: Author

data collection has been a popular method in many research contexts (Huber and Power, 1985).

A pilot version of the questionnaire with 35 questions across 3 dimensions (Cultural Intelligence, Knowledge Management and Organizational Intelligence) was developed and sent to 53 students from Taiwanese and Vietnamese universities. Exploratory factor analysis (EFA) of the results indicated that 20 questions across 2 dimensions explained a majority of the variance. To give strength by confirming the results obtained in the quantitative research, the interview was the second data-gathering criteria.

According to Miller and Glassner (2004), interviews are designed and executed to understand and give voice to participants' experiences, behaviors and attitudes in a non-threatening, confidential and non-evaluative manner. Interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around the topic (McNamara, 1999).

Interviews were conducted on one-on-one basis and the results were compared and contrasted, avoiding focus groups due to their elevated potential for acquiescence bias (Schaffer and Riordan, 2003). This research relies on a study performed on six universities in Taiwan (4) and Vietnam (2), conducting semi-structured interviews with students and professors. In total, 35 interviews were conducted with the following participants: 17 students and 3 professors from 1) Tamkang 2) Fu Jen Catholic, 3) Asia, 4) Chinese Culture Universities in Taiwan, and 13 students and 2 professors from 5) RMIT International and 6) Vietnamese-German Universities in Vietnam.

The refinement of the research construct was done through four tests of validity (content, discriminant, convergent and nomological) and two tests of reliability (composite reliability and Cronbach's alpha). At the second stage, for every round of factor analysis, the reliability of the scales was checked. Based on the results of the second version of the web survey, at the third stage, the evaluation of the measurement model (validity and reliability) was accomplished by removing items that had low factor loading. Responses were quantitatively analyzed using a structural model with partial least squares estimation (PLS-PM) to test the research model and research hypotheses.

All quantitative data analyses are done by using SmartPLS 2.0.M3 (Ringle et al., 2005) and IBM SPSS statistics version 20.0 software packages.

This research empirically tests three hypotheses (Table II) related to the following research questions:

RQ1. To what extend does CI impact KM?
RQ2. To what extend does KM impacts OI?
RQ3. To what extend does CI impact OI?

The culture – knowledge – intelligence model (CKI) is presented in Figure 2. The CKI model shows that Cultural Intelligence impacts KM and Organizational Intelligence (OI). Furthermore, KM impacts OI.

Data analysis

The evaluation of the reflective measurement model has the following elements:
• Internal consistency reliability: Composite reliability should be higher than 0.701 (in exploratory research, 0.60 to 0.70 is considered acceptable).
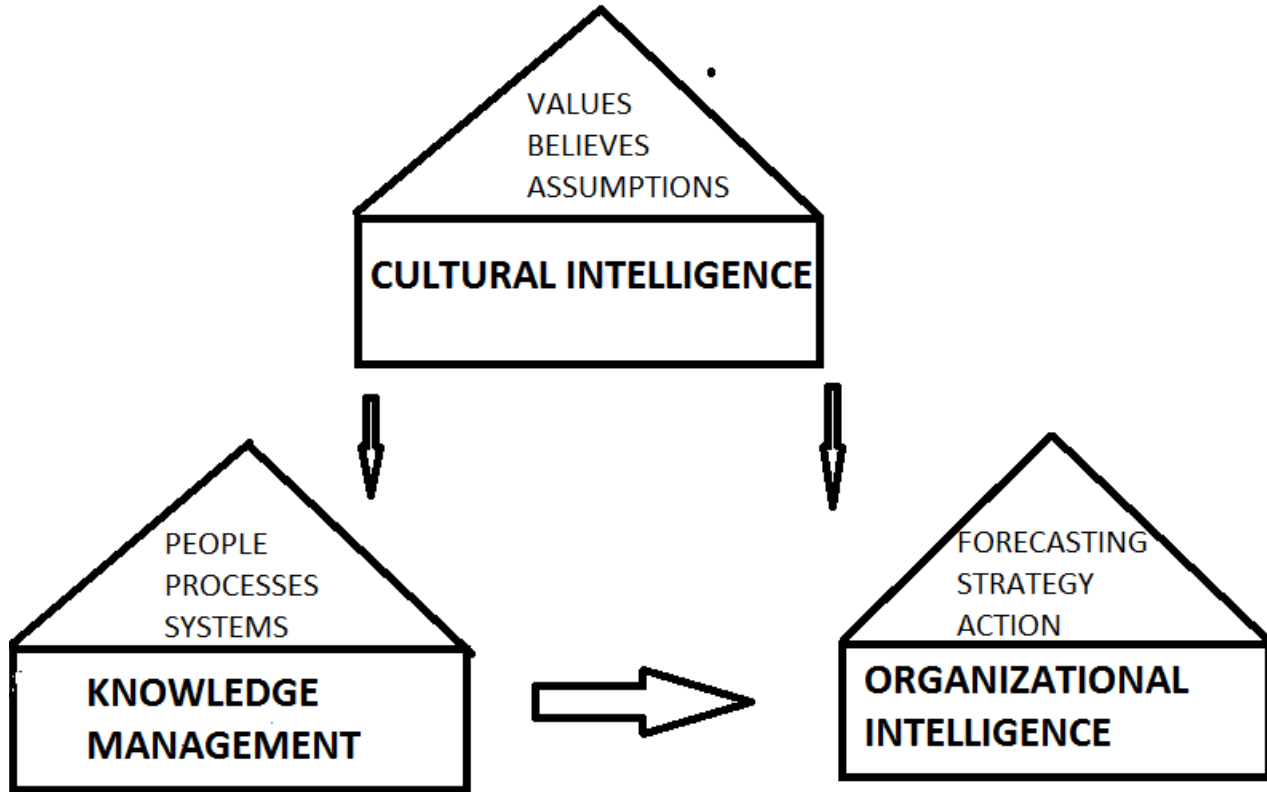
Figure 2. The CKI model (own elaboration).
Source: Author

Table 3. Composite reliability and alpha in the CKI model.

	CI	KM	OI
Composite reliability	0.88	0.84	0.81
Cronbach's alpha	0.72	0.87	0.69

Source: Author

Table 4. Average variance extracted (AVE).

	KM	CI	OI
KM	0.78		
CI	0.53	0.77	
OI	0.72	0.65	0.83

Source: Author

• Convergent validity: The average variance extracted (AVE) should be higher than 0.50 (Chin, 1998; Hair et al., 2005).
• Discriminant validity: Indicators with high loads (less than 0.7) in their latent variables (LV) and low loads in other LV (cross-load) indicate discriminant validity (Chin, 1998); Correlations between the latent variables are smaller than the square root of AVE (Fornell and Larcker, 1981). Table 3 show the composite reliability and alpha values for the three dimensions of CKI model. The detailed analysis of convergent validity can be found in Table 4.

All VIs (first and second orders) showed AVE greater than 50%, which meets the criteria of Chin (1998) and Hair et al. (2005) for the indication of convergent validity.

The second criteria states that an indicator's loading with its associated latent construct should be higher than its loadings with all the remaining constructs (that is, the cross-loadings). Indicators with high loads (less than 0.7) in their LV and low loads in other LV (cross-load) indicate discriminant validity (Chin, 1998). The cross-loading are presented in Table 5.

The discriminant validity analysis revealed that most indicators show adequate discriminant validity, indicating that the concepts are evaluated by respondents as representing different aspects of the phenomenon.

Figures 3 and 4 present the relationships among the model's constructs (path coefficients) of the structural model for Taiwan and Vietnam, respectively.

By analyzing Figures 3 (Taiwan-T) and 4 (Vietnam – V), it is possible to conclude that: In Taiwan and Vietnam, CI has a positive influence on KM (T=0, 65 and V=0, 47) and OI (T=0, 43 and V=0, 28), while KM has a positive influence on OI (T=0, 47 and V=0, 77).

Cultural Intelligence are fundamental to explaining changes in practices of KM (R2 Taiwan: 0.34 and R2 Vietnam: 0.45) and in OI (R2 Taiwan: 0.65 and R2 Vietnam: 0.68).

If the influence of CI on OI is removed, then it is possible to conclude, analyzing Figures 7 (Taiwan) and 8 (Vietnam), that:

1) In Taiwan, CI is responsible for 36% of changes in KM, and KM is responsible for 49% of changes in OI.
2) In Vietnam, CI is responsible for 46% of changes in KM, and KM is responsible for 63% of changes in OI.

Table 5. Cross loadings.

	CI	KM	OI
CI1	0.876	0.319	0.280
CI2	0.739	0.332	0.360
CI3	0.798	0.409	0.530
CI4	0.753	0.278	0.460
KM1	0.473	0.798	0.521
KM2	0.504	0.786	0.642
KM3	0.319	0.663	0.440
KM4	0.435	0.715	0.470
KM5	0.433	0.766	0.511
KM6	0.543	0.804	0.233
KM7	0.474	0.720	0.448
KM8	0.339	0.841	0.581
OI1	0.493	0.354	0.889
OI2	0.553	0.459	0.681
OI3	0.385	0.266	0.797
OI4	0.443	0.384	0.780
OI5	0.421	0.398	0.717
OI6	0.295	0.479	0.786
OI7	0.372	0.565	0.932
OI8	0.531	0.507	0.791

Source: Author

RESULTS AND DISCUSSION

Situated between Northeast and Southeast Asia, Taiwan exemplifies such a cross-cultural nexus. The population of Taiwan is 98% Han Chinese ancestry. Prior to the 17th century, Taiwan was inhabited mainly by indigenous peoples. It became first a Dutch and then a Spanish colony between 1622 and 1662. It was a Chinese territory between 1662 and 1895, and then became a Japanese colony between 1895 and 1945. Since 1945, Taiwan has been a territory of the Republic of China (ROC) and distinct politically from the People's Republic of China (PRC) since 1949 (Zhisheng, 2018).

Hence, although Taiwan represents one of the major Chinese communities in the world, it has been influenced by many cultures.

Currently, Taiwan's political status is ambiguous. China currently claims it is a province of the People's Republic of China, whereas the current Tsai Ing-wen administration of Taiwan maintains that Taiwan is already an independent country as the Republic of China (ROC) and thus does not have to push for any sort of formal independence (Nachmann, 2020). As such, the ROC, consisting of Taiwan and other islands under its control, already conducts official diplomatic relations with and is recognized by 13 United Nations-recognized countries (Foreign affairs Ministry of Taiwan, 2019).

Vietnam's culture has developed over the centuries from indigenous ancient Đông Sơn culture with wet rice cultivation as its economic base (Higham, 1972). Some elements of the nation's culture have Chinese origins, drawing on elements of Confucianism, Mahāyāna Buddhism and Taoism in its traditional political system and philosophy (Tung Hieu, 2015; Nguyen, 2016). In recent centuries, Western cultures have become popular among recent generations of Vietnamese (Nguyen, 2016).

The impact of culture on intelligence is much higher in Taiwan (0, 73) than in Vietnam (0, 28). This is related to the fact that Taiwanese culture, in opposition to Vietnam, is future- and performance-orientated, getting information from facts, books and statistics, instead of being people-oriented, getting the first-hand (oral) information as in Vietnam. Besides that, the high level of uncertainty avoidance of Taiwanese people impacts their intelligence without considering the interference of the intermediate variable (Knowledge).

Analyzing Figures 3 and 4, while the relationship between culture and knowledge has a direct effect with a higher structural load in both countries (Taiwan: 0.65 and Vietnam: 0.47), the relationship between CI and OI was much higher in Taiwan (0.73) than in Vietnam (0.28), indicating that CI has a lower impact on OI in Vietnam than in Taiwan. This means that, in opposition to Vietnam, in Taiwan, the OI is more influenced by culture (0, 73) than by knowledge (0, 37), since the Taiwanese have several difficulties to applying knowledge based on fears about the Chinese communist system. This is even clearer when the direct influence of culture on intelligence is eliminated of from the analysis (Figures 5 and 6).

Analyzing the Figures 5 and 6, in Taiwan KM is responsible for 23% of changes in OI, while in Vietnam, KM is responsible for 89% of changes in OI.

Chiang et al., (2022) found that regardless of industry, enterprises with better corporate governance performance and a strong tie with stakeholders have a more positive effect on brand value. The Corporate governance can be improved by a practice of KM known as Corporative University. The relationship between the stakeholders is better when the use of Communities of Practices (another practice of KM), organized and facilitated by experts in the different discussed topics (a practice of OI). All these three practices leads to a better brand value (the intelligence of the company).

In line with the previous literature, the results of this study suggest that the development of an organizational culture supports the application of KM practices (Davenport and Prusak, 2000; Nonaka and Takeuchi, 1995; Gold et al., 2001; Janz and Prasarnphanic, 2003; Lee and Choi, 2003; Donate and Guadamillas, 2010). Caloghirou et al. (2004) support this conclusion when affirming that the availability of knowledge will increase the ability of people to search, recognize, and present a problem as well as assimilate and use new knowledge for problem-solving.

In the interview about cultural intelligence, great
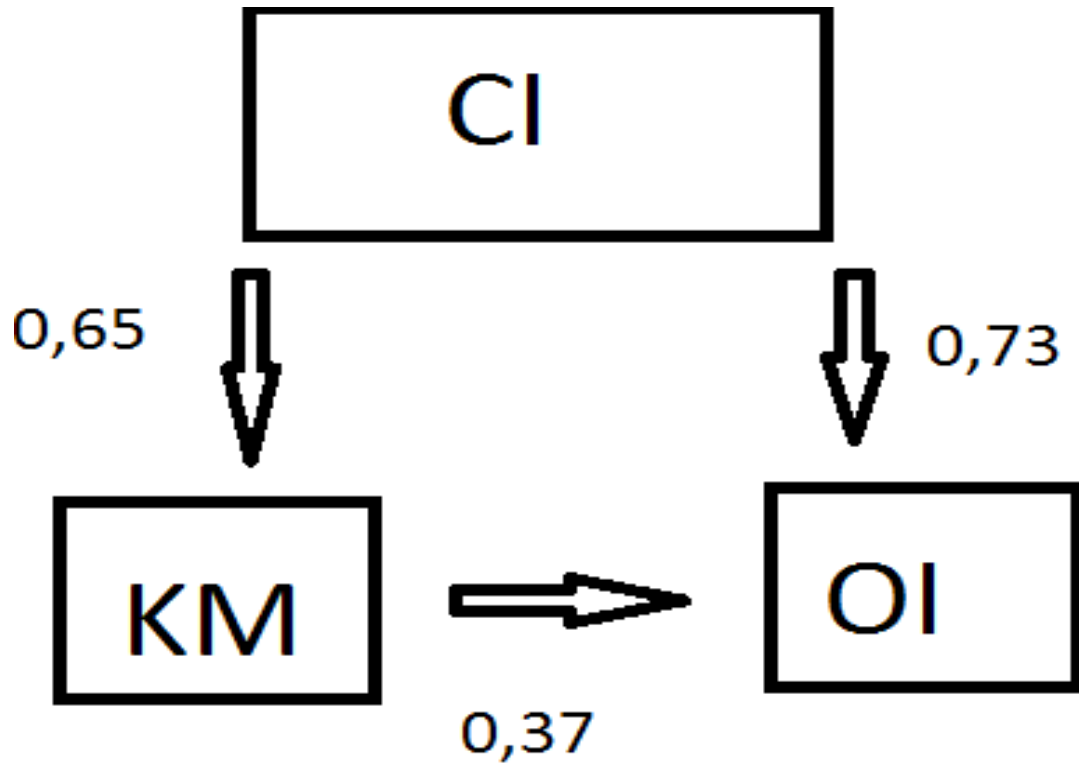
Figure 3. Path coefficients for Taiwan.
Source: Author
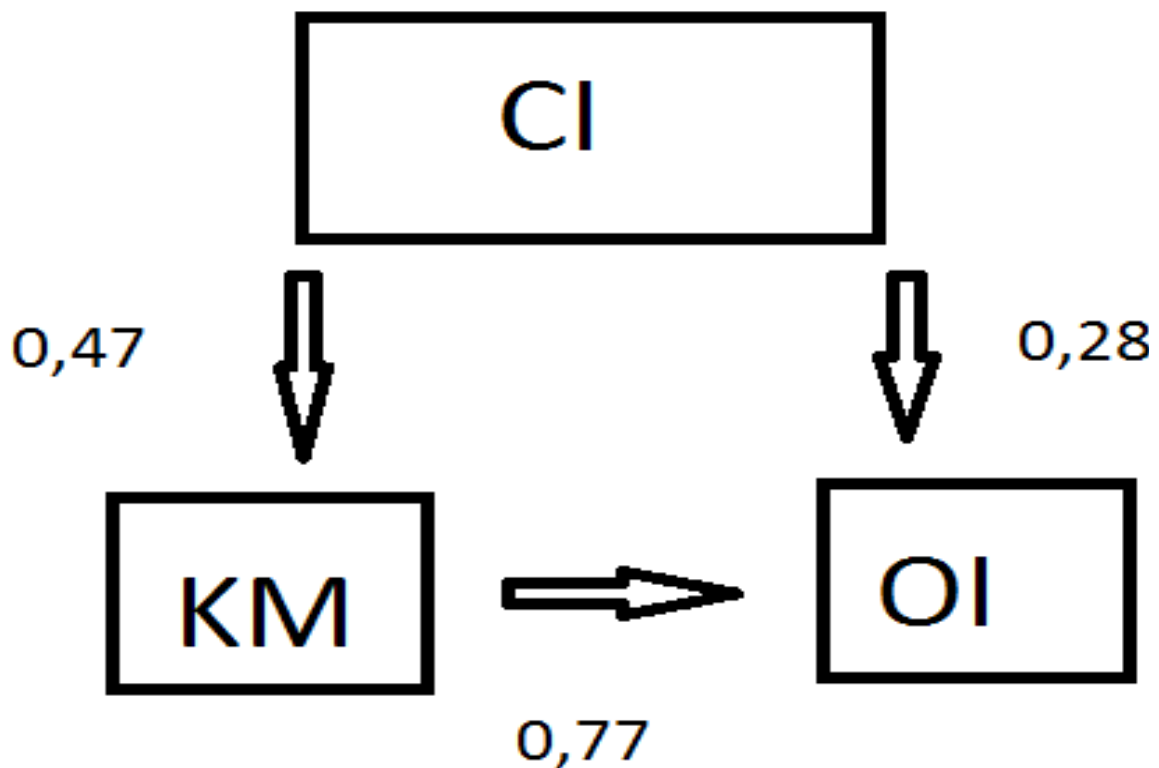
Figure 4. Path coefficients for Vietnam.
Source: Author

Figures 5 and 6. Path coefficients without the influence of CI on OI (Taiwan and Vietnam respectively).
Source: Author

majority of Vietnamese students answered that they share feelings and problems with friends in face-to-face conversations, indicating th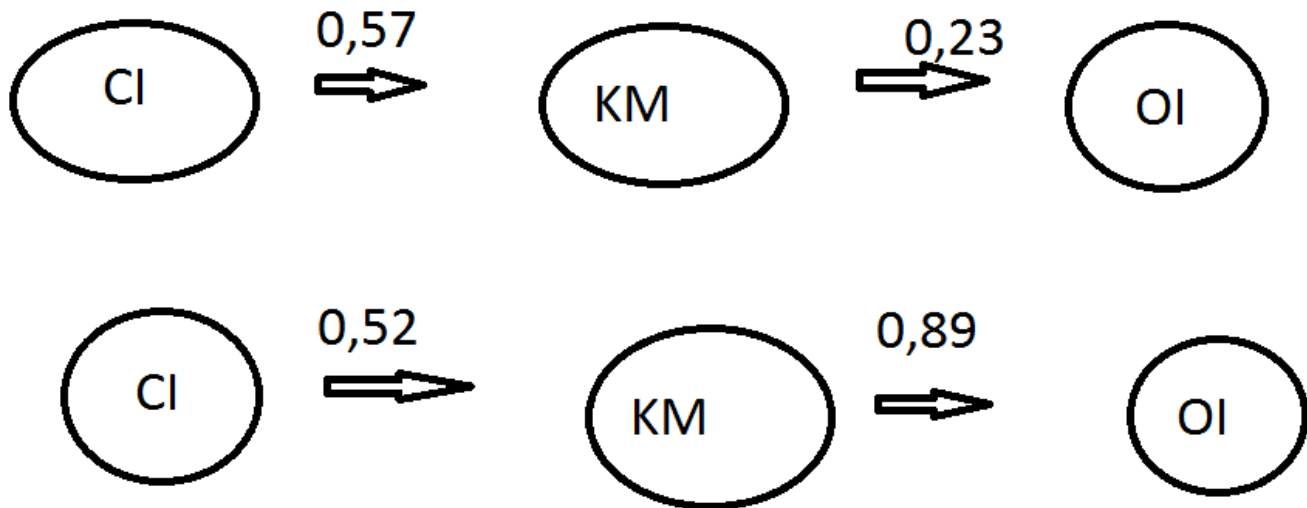e impact of culture on the implicit knowledge. They take the easiest path to enjoying life in the present and helping others to do the same. They have patience to listen and the motivation to study and work abroad. On the other hand, Taiwanese students are extremely protected by families, teachers and government, and only share feelings through social networks during the activities of the University. Therefore Taiwanese students are not motivated to study abroad; their level of experience is too low, and so is their self-awareness. Even though they appear to pay attention to a visitor's views, they reject ideas that require them to leave their comfort zone in Taiwan.

Most of Taiwanese, students and professors, chose the option "Neither agree nor disagree" in the survey about knowledge Management and Cultural Intelligence, because they do not understand the importance of learning process with other cultures to develop the capacity to apply knowledge.

Their higher level of uncertainty avoidance can be seen in their reluctance to explore foreign cultures, a form of risk-taking and cross-cultural adjustment. In turn, this impacts the knowledge management (the capacity to create knowledge), thus Hypothesis 1 is supported.

Even though the Vietnamese are family collectivist (Hofstede, 2001; House, 2004), they have much less experience compared to the Vietnamese in developing their own personality and individual independence. Interview participants demonstrated that the Taiwanese have more knowledge of technical matters to share, while the Vietnamese participants emphasized their experiences of other cultures as critical to their decisions and thus affirming Hypothesis 2.

Finally, an exploration of KM and OI in the interviews conducted in Taiwanese universities leads to the conclusion that they are not motivated to change the university culture and so the norms guide them and remain fixed.

The levels of English language skills are higher in comparison to students of Vietnamese universities, which help them to understand international literature without going to other countries.

In contrast, there are several international universities in Vietnam who welcome foreign staff and students, and thus are motivated to develop a culture of sharing. The culture of sharing is enhanced by mentoring and the active development of students and staff in both universities researched in Vietnam. There are also formal meetings with industry representatives and government bodies from Vietnam, Australia, and Germany. This indicates that Knowledge Management positively supports the government's strategy and actions, thus lending support to Hypothesis 3.

One of the meetings is with Ms. Huynh Dinh Thai Linh, Regional Manager of the Hinrich Foundation, about opportunities for the Vietnamese students to get scholarships for exchange programs in Germany and other foreign countries. Students are highly motivated to participate into contests for innovation and entrepreneurship, with awards like the Best Innovator Prize or a mentoring program sponsored by Israeli government.

Dr. Bernd Tilp, Director of DAAD office in Ho Chi Minh City, pointed out that over the last year until now currently; Vietnamese students have been very keen on the opportunities to studying abroad at German universities. In order To meet the high demand of those students, the DAAD opened 2 two offices instead of only

one office, as in many other Southeast Asian countries.

According to Dr. Dinh Hai Dung, Coordinator of a Master study program at VGU, each year there are about 20% of students at this university who go to Germany for the master's thesis with a German professor who acts as the thesis supervisor.

Mr. Henning Hilbert, the Vice Director of Goethe Institute in Ho Chi Minh City, confirmed to us that the need of students to learn German language and prepare for their undergraduate studies in Germany has increased dramatically, as a sequence; the Goethe Institute has recently been mostly overloaded recently.

Another important point is that the Taiwanese want to make the rules and regulations very clear when any discussion occurs, while Vietnamese prefer to let the workflow without interruptions be uninterrupted

These findings are easier to understand when compared with the interview about Cultural Intelligence and Knowledge Management. Since Vietnamese, in opposition to Taiwanese, have a low level of uncertainty avoidance, they enjoy and are confident in interacting with people from different cultures abroad. Taiwanese prefer to stay in their comfort zone to avoid the stresses of adjusting to a culture that is new to them. Taiwanese are not confident that they can get accustomed to the shopping conditions in a different culture, since their culture is isolated from the rest of the world, even though they are very welcome to foreigners, except professors to keep the status quo of "control their genius kids". They like to receiving from other nationalities, but they do not want to leave the country to really learn with them. This welcome approach is a naturally reaction against Ming Dynasty (military base) restored by Zheng Chenggong, (Koxinga) after 38 years of Dutch rule on Taiwan.

In the interview about knowledge management with professors from both countries, it was clear that in Vietnam, in opposition to Taiwan, there is a constant use of multidisciplinary teams that cut across the formal, traditional, and hierarchical structures. In fact, in Vietnam, the formal collaborative networks are strategic and go beyond the university itself, involving other universities, partners, customers, suppliers. There is also a positive, proactive, and fast attitude to sharing knowledge and solutions with students from other departments of the university and also with other universities in Vietnam and abroad.

For example, in interaction with German professors who fly from German partner universities to VGU to teach certain courses, Vietnamese students very often organize themselves in study groups and ask for project work where their teamwork can be practiced, demonstrated, and assessed by the professor. The examination modus will be designed in a way such that a group presentation about a research topic will be given and discussion between different groups will enhance the knowledge and solution transfer.

Between students and the university departments, there are certain connections and interactions, in the form of surveys and evaluations of teaching services. Furthermore, the research management department of VGU is set up with one of the major tasks to support students in research projects so that they can get up-to-date in an international environment.

In contrast to the four universities in Taiwan, in both Universities in Vietnam, there is a formal and disciplined process for "environment exam". This is a systematic review of the university environment to identify key trends, opportunities, and threats. Because of these competences, both universities are successful in using the knowledge to make predictions.

In both countries, there is a heightened sense of trust within the university and the students are motivated by the university's culture. However, in Vietnam, the students have classes with foreign professors from the beginning, while in Taiwan; the universities are very close to professors from other countries, which help to keep the students close to them with fewer demands to be accomplished by Taiwanese professors. This is the strategy of Taiwan's government that benefits the China's government.

The motivation and patience of students from Vietnam contribute to developing the culture of sharing, what is paramount for a KM plan. However, Taiwanese students need support from professors and the universities' leaders, based on a change in the government's strategy, to create practices of knowledge sharing in the universities, which is not common in Taiwan. When the students identify the sense of community and effectiveness of a Knowledge Management program between the university and industry, they are much more motivated to contribute by exchanging their knowledge and experience.

The learning of new beliefs, values, assumptions, traditions, and resilience (cultural intelligence) impacts the culture of sharing, which helps in the process of creation of knowledge. The creation of knowledge is higher in Taiwan than in Vietnam, but the application is higher in Vietnam.

According to Vietnam Chamber of Commerce and Industry (VCCI) President, Vu Tien Loc, Vietnam has become an attractive business and investment destination for many foreign companies from Taiwan thanks to its notable advantages, including a high economic growth rate, political stability and its strategic geographic location.

As of the end of 2017, Taiwan has invested a total amount of 30 billion USD into 2.500 projects in Vietnam, which makes it the 4th biggest foreign direct investor. In Binh Duong province, where the VGU is located, Taiwanese companies invested into 772 projects with a capital volume of nearly 6 billion USD. Even though they had to suffer certain difficulties and damages during the short period with the anti-Chinese attitude in 2014 in Vietnam, Taiwanese companies still find great potential in

investing in the long term.

The challenge for Taiwan is developing the capacity to apply knowledge, given the fact that other countries are taking the knowledge of Taiwanese employees to fire them afterwards. The curricula for teacher training should incorporate and promote factors such as openness to intercultural interaction and intercultural learning; readiness to recognize and use multiculturalism and cultural diversity as a learning resource and also create international teachers exchange programmes (Petrović, 2011) before students exchange programs, such as ERASMUS PROGRAM in Europe. One solution to reduce the high brain drain and economic crises in Taiwan should be the interference of the government and university´s leaders by changing the process of selection and development of professors (Organizational Intelligence). In Vietnam, the government should open new public universities and promote campaigns to incentive people to study.

This study attempts to motivate Taiwanese parents, professors, and the government to recognize the importance of cultural differences in reaching maturity. Cultural differences should be acknowledged and addressed in creativity training where participants from different cultures have an equal chance to share their perspectives and experiences on creativity and innovation (Tang and Werner, 2017).

A student with a high level of experience and resilience is more willing to apply what he/she learned in another culture (experience) and afterward back to his/her home country with cultural skills and intelligence (knowledge in action) to make the difference. By the time the students leave abroad, they can participate in mentoring activities and also best practices the lessons learned to help Taiwan reduce the brain drain and enhance the agriculture sector.

In conclusion, Cultural Intelligence influences intention is to contribute knowledge and experience into one KM program positively. This KM program is based on three practices: lessons learned; best practices and mentoring.

Conclusions

Past studies have indicated that university-industry collaboration is an effective approach to entrepreneurial training because it can realize the benefits of combining university theory with practical experience. There are barriers to industries in gaining academic knowledge and for students to gain practical experience. The objectives of this study were to: I) to propose a model that can capture the relationship between culture, knowledge, and intelligence; and ii) to provide qualitative evidence of its effectiveness in reducing brain drain and improving agriculture in Taiwan. Thus, the cultural model based on Knowledge and Intelligence (CKI) provides a framework for universities and industries to develop their plans for exchanging knowledge and experience, along with

motivating and entrainment among students.

The study concludes that the investment in academic exchange programs (cultural intelligence) and practices of Knowledge Management (mentoring, best practices and lessons learned) can overcome the China's strategy of dependence on Taiwan economic growth and block the China's political ambitions to destroy Taiwanese democracy, economy, identity and culture.

The authors recommend further research on a larger scale to gain a deeper understanding of the interactions between the variables of the CKI Model, especially the relationship between culture and knowledge in enhancing intelligence.

RECOMMENDATIONS FOR FUTURE RESEARCH

The impact of culture and knowledge on intelligence is paramount to help governments make decisions. The perspectives and analyses offer a new way of thinking, useful analytical model as well tools around which novel ways of knowledge management of cultural intelligence can be useful in shaping organizational intelligence.

However, further investigation of these relationships is paramount to better understand how to flourish Organizational Intelligence and therefore reduce the brain drain.

A clear limitation of this study is the number of interviews to understanding the phenomenon. Further investigation with students from Taiwan and Vietnam can add good findings in the future.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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The choice and preference of sorghum value chain actors in Mali

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The production and adoption of sorghum-improved varieties are faced with biotic and abiotic stresses affecting both its utilization and marketability by different actors in the sorghum value chain. This study aims to understand why and how different social groups and value chain actors make decisions on the utilization of sorghum and how these decisions influence the choice and adoption of the sorghum cultivars introduced and promoted by the breeding programs. This study was conducted in Mali's Sudan and Savanna zones, wherein the different agroecological zones have differentiated production and utilization realities and traits demand. Mixed methods (surveys, focus group discussions, key informant interviews) combined with intersectional and value chain approaches were used for data collection and analysis. The data were collected from 836 respondents in 12 villages including 384 females (46%) and 452 males (54%) representing sorghum growers, processors, consumers, and traders. While the findings show gender-specific trait preferences, actors' traits choices revealed the gender dynamics in value chains in which the different roles, interests, and challenges of men and women influence their choices and adoption of sorghum cultivars. The results also revealed there is an increased opportunity for the sale of sorghum grains (38%); this may be explained by the continuous efforts made by research institutes to develop high-yield sorghum varieties and the evolving processing sector in Mali.

Key words: Sorghum, gender, traits preferences, breeding, Mali.

INTRODUCTION

Sorghum is one of the major staple crops in Mali, representing the most important cereal crop in terms of agricultural land used for its production (FAO, 2017)**.** Sorghum provides food security and a source of household income for smallholder farmers in West and Central Africa (WCA). To improve the adoption rate of sorghum varieties, efforts have been made by international and national research institutes, farmer grassroot organisations, and Non-Governmental Organizations (NGOs) in Mali including the development of high yielding improved varieties (such as hybrid, open-pollinated and dual-purpose varieties) and providing technological packages (striga, parasite, disease control techniques, micro-dose, and post-harvest management techniques) to manage biotic and abiotic stresses at the farmer level. Despite these efforts, sorghum yield remains low (less than 1 t /ha (Dembele et al., 2021; Kanté et al., 2019) with the adoption of improved varieties at an average of 22% (Smale et al., 2018,164). The low adoption rate of improved varieties can be explained by
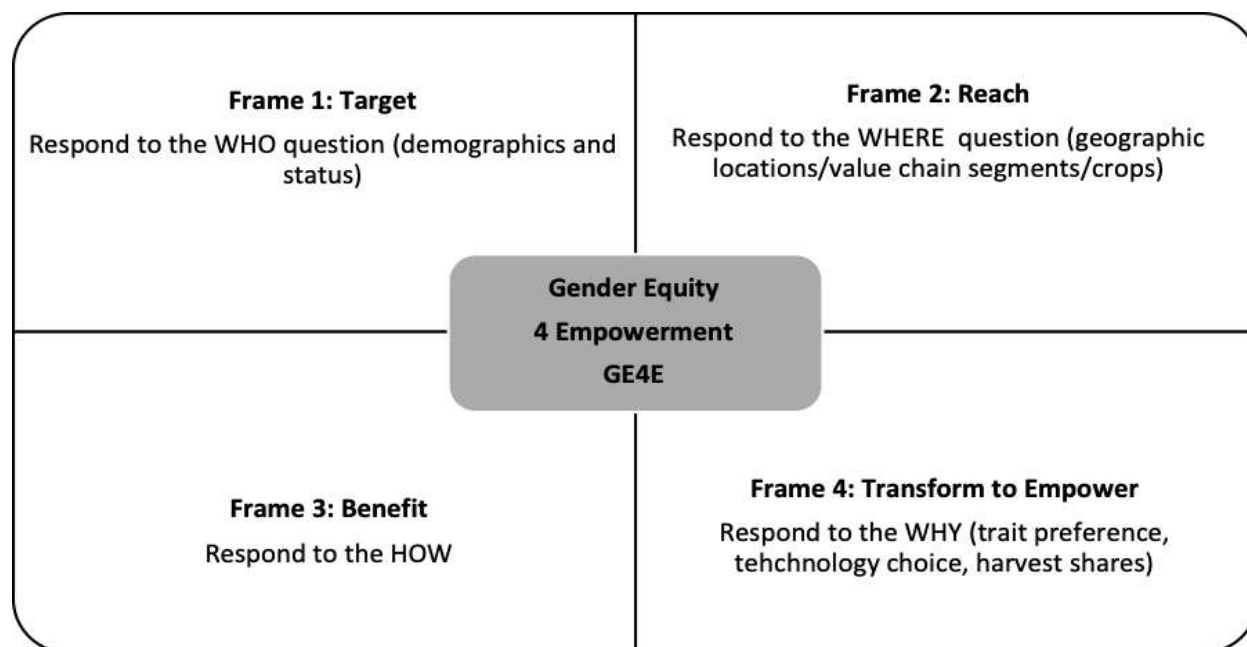
Figure 1. Integrating social and gender consideration into the agricultural technology development and deployment.
Source: Author.

the lack of analysis that emphasized gender in differences in value chain actors' interests, roles traits choices, and gender relations in access to production resources including land, input, and basic farm tools and equipment in most communities in Mali. Previous studies have reported on differential trait preferences between men and women and also their complementarity in preferred trait demands due to their contrasting roles and responsibilities in household management (Diallo et al., 2018; Weltzien et al., 2019; Chambers et al., 1989; Ashby and Vivian, 2019). These studies on gender-differentiated information about trait preferences were not specifically designed for understanding gender-relations in context specific ways, but to show gender differences in production without analysing of the demands and the sociocultural context of production and utilization of the varieties by different value chain actors. One of the consequences of these studies is the production of a long list of desired preference traits by male and female farmers with little or consideration of the social context in which the actors make operates and decisions. Hence, assessing and understanding the choices and varietal preferences of the wider group of actors (farmers and processors and consumers, and traders) through a gender-responsive approach is necessary.

THEORETICAL AND CONCEPTUAL FRAMEWORK

Intersectionality denotes the interactivity of social identity structures like gender, class, age and race in fostering life experiences, of oppression privileges (Crenshaw, 1991, 1244; Gopaldas, 2013, 90). It refers the relationships among various modalities and dimensions of social relations (McCall, 2005). The implication of intersectionality at a micro-level of analysis is that every person in the society is situated at the intersection of several social identity structures. As a theoretical framework intersectionality has influenced current feminist conceptualizations of qualitative methodology, the development of new feminist approaches, social change, positionality, and situated knowledge (Simandan, 2019a, 2019b, 2020; Davis, 2014, 2020, 2021). Equally, intersectionality permits the study of diversity and differences among sexual categories, between the sexes and social groups. Thus, we developed a strategic framework, examine and respond to the crucial variable of inclusion considered cross-cutting component of value chain analysis in agricultural technology development and deployment (Figure 1).

CONCEPTUAL FRAMEWORK: FOUR FRAME MODELS FOR PROMOTING EQUITY AND INCLUSIVENESS

This conceptual framework is developed to systematically and intentionally ensure that major stakeholders are identified, targeted, and reached with the technologies, are engaged to contribute to decision-making that affect, benefit and empowers them. The importance of models 1 and 2 is to avoid assumption about who the beneficiaries
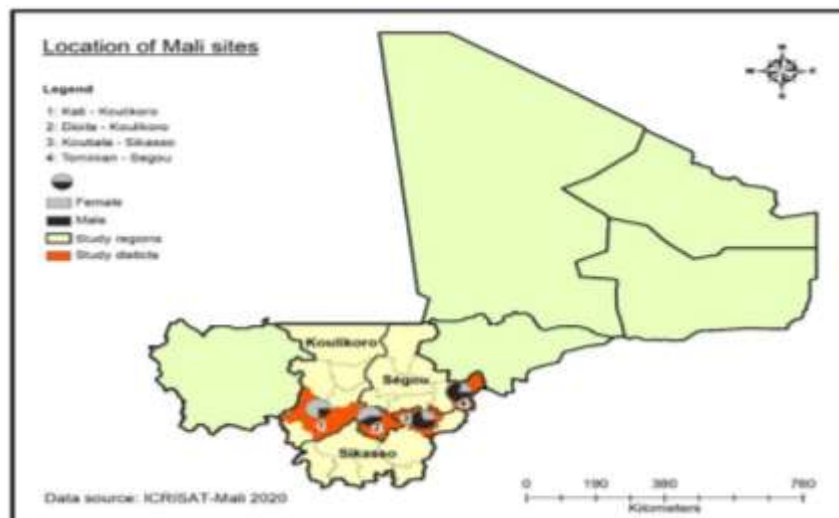
Figure 2. Map of Mali showing the four administrative districts of study sites.
Source: Author

are and or should be and to ensure no major social group is excluded. We identified the actors of the sorghum value chain in the different agro-ecologies by responding to the 'who and where' questions which aided examining how a person or group's social identify is being dis/advantaged. The social identity of value chain actors as the target beneficiaries includes indicators such as sex, age, the activity of the value chain actors, and the location or agroecology. Based on this analysis, the main disadvantages lie in the categorization of youth rather than sexes when it comes to resource allocation. Frame models 3 and 4 describes how and why the beneficiaries participate in and benefit from decisions on the choice of traits of sorghum varieties suitable for their activities and interest as end users. The frame models ensure that the major customers of the breeding products are part of the decision-making that leads to cultivar development. The co-design and creation process by the key stakeholder support the co-ownership and sustainability of the program and system. The overall outcome of gender transformative approach is to expand the capacity and opportunity for those that have been excluded to make deliberate and strategic choices by those who have been formerly deprive such opportunities in ways that do not simply reinforce but may dynamically challenge the structures of inequality in the society (Kabeer, 2017, 651). Gender and other social differences such as age, wealth, marital status, level of education, etc. have an enormous influence on the success of agricultural interventions and the choice of varietal traits. Although there is a growing awareness and recognition of including both men and women in participatory plant breeding process, intersectional analysis that looks at the influence of age, education and social status or wealth of men and women in the different segments of the value chain has

not been considered in most studies. To bridge this gap and present a broader analysis and understanding of varietal trait preferences and choices, the major social categories of respondents are disaggregated to understand and show whether there is variance or not independently of sex categories and to understand how intersecting social markers and inequalities affect the most marginalized groups (such as, women and youths) (Klugman et al., 2014; Yuval-Davis, 2006). The examination of the ways in which non-technical features of local knowledge, that is, social and cultural factors, and gender norms and roles of specific value chain actors, are linked to the choices and preferences of end-users may determine the degree of acceptance or rejection of the breeding products.

METHODOLOGY

Study locations

The study was conducted in three regions consisting of Koulikoro, Segou, and Sikasso which are located in Western, Central and Southern Mali, within the Sudan and Savanna zones of Mali (700-1200 mm) (Figure 2). These regions are the most important sorghum production areas in Mali. The Participatory Plant Breeding (PPB) programmes of the national and international research institutes operated in the three regions by developing and testing sorghum varieties based on the agro-ecologies and farming systems. The region of Sikasso lies in the humid tropical agro-ecological zone while the regions of Koulikoro and Segou are located in the semi-arid agro-ecological zone of Mali. The three regions have a land area of 225 221 km^2 with a population of 7,403,636 persons in 2009, or 50.95% national population (National Population Census, 2009). These regions were selected because of the presence of sorghum breeding program activities such as on-farm trials and demonstration plots with farmer organizations for 20 years. The choice of the villages was mainly determined by

presence of seed production activities, availability of improved seed varieties locally, participation of farmers in breeding activities and the presence of processing or marketing activities. One of the features of the three regions is the patriarchal social organization and the importance of rainfed cereals like sorghum, millet and maize in the diet of the population. Whereas women represent 50.4 percent of the population, women and young people have limited access to agricultural lands, inputs (certified seeds and fertilizers), agricultural equipment, and participate less in agricultural trainings and innovations because of the rigid norms governing household assets and the male-based and patriarchal structure of agricultural production units. Under the regions, the districts and villages were selected based on the significance of sorghum production in the livelihoods of sorghum value chain actors. The target group for this study are the sorghum value chain actors represented in the consumption, trade or grain marketing, processing and production segments. Although the production, marketing and consumption segments seems to be well developed, medium to large scale processing is still underdeveloped in Mali.

Sampling and data collection

The study applied a mixed method consisting of both qualitative and quantitative tools for gathering study data. The total sample size from individual surveys, Focus Group Discussions (FGDs), and Key Informant Interviews (KIIs) is 836 respondents comprising 452 males (54%) and 384 women (46%). Qualitative data were collected through FGDs and KIIs from 224 value chain actors across 12 villages. Discussion guides were designed for the FGDs and KIIs. In each selected village, at least 8 women only and 8 men only FGDs and 1 mixed FGD were conducted. The quantitative data was collected by administering a survey questionnaire with the use Survey CTO data collection tool by eight trained enumerators to a sample of 612 sorghum value chain actors from each of the three survey regions. These are individuals engaged in the production, consumption, trade, and processing of sorghum across the selected regions within the selected communities from which at least fifty (50) respondents were randomly selected for the study. The respondents were sorghum growers, processors, grain marketers, or consumers. The study was conducted in the 2019 and 2020 cropping season following a multi-stage sampling approach. Reconnaissance survey was first organized with farmer organizations' representatives and sorghum breeders to identify and select survey locations, sorghum varieties and the characteristics to be evaluated. Secondly, three administrative regions including Koulikoro, Segou, and Sikasso were purposively selected (Figure 2). The FGD sessions were recorded, and the information obtained was transcribed and coded to capture the various thematic areas of the study guide and analysed through establishing the categories and themes, relationships/patterns and conclusions drawn in line with the study objectives; while descriptive analysis using Statistical Package for Social Sciences (SPSS) and Wilcoxon ranking method were used to analyse quantitative data. A Wilcoxon signed ranks test which is a non-parametric statistical procedure was used to test for statistical significance, for instance, between male and female ratings of sorghum trait attributes (Bellon, 2002, 71).

Ethical precautions

The surveys and data processing were subject to a rigorous ethical procedure ranging from seeking community consent, individual consent, to the anonymization of respondents' personal data and identities during data processing and analysis. Community consents were sought and obtained from community leaders and extension agents before the survey began, during which the objectives and benefits of the study to the farming communities and value chain actors was explained. The interviewers and community leaders explained the objectives of the study and the importance of their participation at the beginning of the surveys to obtain individual consent without coercion or pressure on the potential respondents.

RESULTS AND DISCUSSION

This section describes the results and discussions of each analysed data including the demographic characteristics of the respondents, production factors and constraints, and value chain actors' traits of preference. Value Chain actors are the people at each link along the chain involved in activities required to move a product from the farm to the consumer (Chidiebere-Mark, 2018). The value chain is male and female actors involved in producing, processing, marketing, and consuming the sorghum.

Socioeconomic characteristics of respondents

Table 1 presents the socioeconomic characteristics of the sampled respondents from the study regions. The average age of the respondents is 42, and the average age of female and male respondents are 39 years and 47 years respectively. Thirty six percent (36%) of respondents were heads of household, among whom 64% are men and only 8% are female household heads. While 53% of respondents did not receive any formal education, there are disproportionally more women (63%) without education compared to men (43%). Out of those that attended primary education, the percentage of men (21%) is higher than that of women (14%). However, 13% of the respondents have received adult education trainings, of which 17% of men and only 7% are women. Although most of the respondents are not educated, education is significantly and positively associated with most of the sustainable agricultural practices (Manda et al., 2016) and enables quick adoption of new technologies (Enete and Igbokwe, 2009; Smale et al., 2018; Uaiene et al., 2009; Manda et al., 2020). In most of Malian agriculture innovation settings, it is generally the (male) young graduates who conduct the tests and demonstrations and thus become community links between their associations, the villages, the world of development and research because of their ease mobility, human capital (writing and accountancy literacy; group management skills) and their soft skills (open-mindedness, curiosity, and tendency to try new things and to challenge or question old practices) in the management of social, public relations and in the translation of techniques into practices (Sissoko et al., 2019). The participation of youth graduates in breeding activities is also seen as a guarantee of adherence by other users of the agricultural technologies promoted in the village. About 37% of respondents are aged from 15

Table 1. Socioeconomic information of surveyed respondents.

Characteristics	Male (n=328)	Female (n=284)	Average (n=612)
Age (years)	47	39	43
Share of youth [15-35 years] sample	12.74	24.67	37.42
Share of older adult [36 and above] sample	40.85	21.73	62.58
Household headship (%)	64	8	36
Marital status			
Married (%)	97	95	96
Single (%)	3	1	2
Divorced (%)	0	4	2
Widow/Widower (%)	0	0	0
Education			
No formal education (%)	44	63	53
Primary education (%)	21	14	17
Secondary education (%)	7	7	7
Tertiary (%)	7	3	5
Adult education (%)	17	9	13
Koranic education (%)	6	4	5
Others (%)	1	1	1
Sorghum utilizations			
Home consumption (%)	93	74	83
Market (%)	39	37	38
Processing (%)	2	36	19
Seed (%)	3		2
Animal feeding (%)	1	1	1

Source: Author

to 35 years while respondents aged from 36 years and above represent about 63% of the sample. Table 1 shows that the study targeted more female youth respondents (about 25%) than male youth respondents (about 13%). While we have applied the African Union's definition of youth (15-35 years)[1], this youth definition based on age range (African Union 2006) does not fit the social and cultural realities of youth in the areas where our study was carried out. It is in these societies where one can find a young man of 25 years polygamous with two or even three wives. The number of wives is considered as the sign of prestige and social achievement. These are societies where people marry very early and the youth period is being compressed because of early marriage. Early marriages are encouraged to cope with the shortage of agricultural labour, to keep young people on the ground, and to prevent premature pregnancies of girls. This is why we note in Table 1 that 96% of the respondents are married and only 2% are single. By deduction, we can state that the real young people in this study, based on the social praxis we referred above, constitute only 2% of the

sample. This was confirmed to us during a focus group by a participant:

"*Here, you can be considering adult once you get married. Among us here, there are no young people; we are all married and heads of households. If you want young people, unless you find bilakoro (uncircumcised people) behind the goats*" (Young male participant in FGD).

Respondents' involvement in sorghum value chain nodes

Table 2 shows that about 56% of respondents are in the production node (farmers) comprising 78%men and 32%women. While about 23% of the respondents are considered as processors, a higher percentage (43%) of the processors is women with only 2% men. The high percentage of women in the processing is explained by the fact that women use traditional processing activities as income generation strategies and because processing of crop produce into secondary products are women-based activities. Those that are involved in grain trade are 6% among whom 8% are men and 3% women. Table

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[1] Defining youth on the basis of numerical age, although contextual, seemed to be the most convenient way to analyze the quantitative data.

Table 2. Involvement in sorghum value chain segments.

Segments	Male (n=328)	Female (n=284)	Male youth (n=78)	Adult men (n=250)	Female youth (n=151)	Adult women (n=133)	Youth (n=229)	Average (n=612)
Production (%)	78	34	19	59	15	53	34	56
Consumption (%)	13	20	2	11	13	7	15	16.5
Grain trade (%)	8	3	3	5	2	1	5	5.5
Processing (%)	2	43	0.00	2	23	20	23	22.5

Source: Author
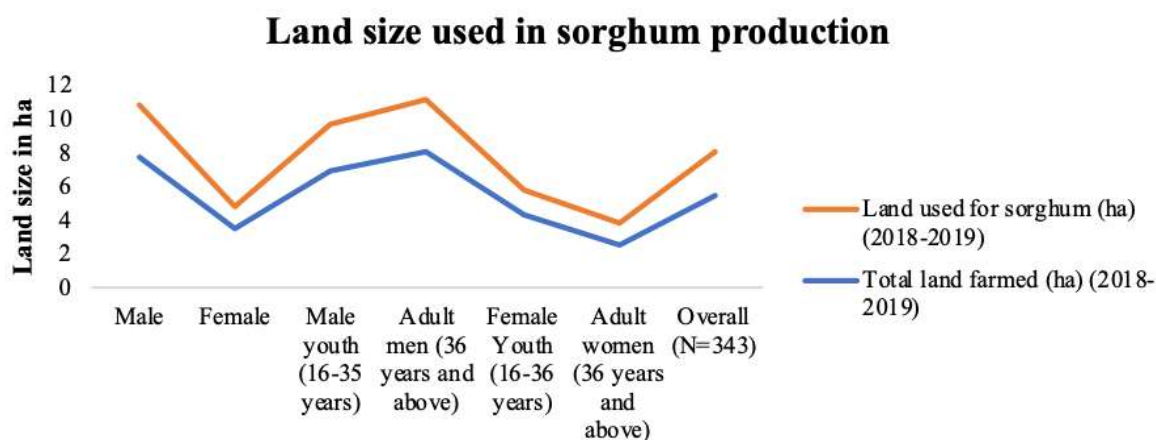
Figure 3. Total land farmed and sorghum land size (2018-2019).
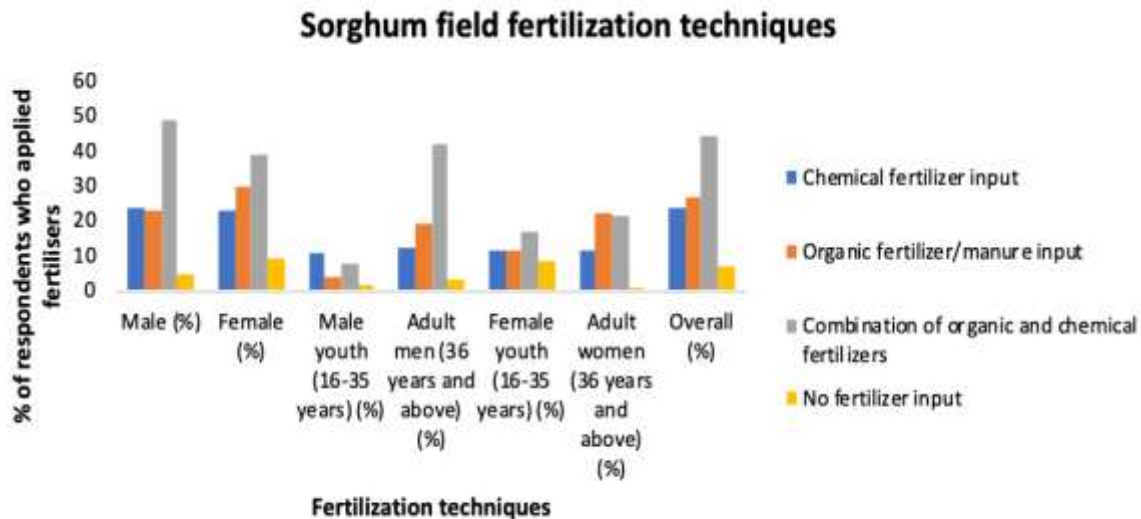Source: Author.

2 found that home consumption, trading, processing are the most important utilizations of sorghum by the respondents. The trading and processing of sorghum grains are the second most important segments of the sorghum value chain in which a high percentage of respondents are engaged. The percentage of respondents that indicated being actively in trading (5.5%) and processing (22.5%) (28% of sample size) indicates that respondents are interested and involved in market-oriented activity. The high number of women both young and older adults involved in the processing segment compared to men could be influenced by the culturally assigned roles and gendered division of domestic labour where women solely take care of all the processes of food preparation and processing. Conversely, the result showed that trading grain remains essentially a male activity due to men's ability and freedom for mobility and control on women income (Mangnus and Vellema, 2019). Male and female youths are more involved in production at 19 and 15% respectively. This large presence of young women (13%) in consumption and production nodes (15%) compared to grain trade (2%) is not surprising since in the Malian sociocultural context, young women just like older female adults are restricted to and are in charge of preparing

foods and are used as laborers in most farm activities as weeding, sowing etc. Unlike young women, young men have more opportunities to engage in off-farm activities such as being *pisteurs* (middlemen), which requires travelling from village to village in search of grains for wholesale traders based in the cities (Mangnus and Vellema, 2019).

Sorghum production factors

Land access, land ownership, and land size

Land is the most essential resource for any farmer; as it remains the most important factor in crop production. Thus, the production segment is the key determinant of the functioning productivity of other segments in the sorghum value chain. During the 2018 and 2019 season, there is no significant difference between lands allocated for sorghum production to women and men farmers. However, men are growing the double of land of that of women (Figure 3). In Mali and generally in Africa, land ownership is considered as socio-cultural and economic power (Patel, 2012). Depending of the rules of ownership, growers (youth and women) can be excluded or

Sorghum field fertilization techniques

Figure 4. Sorghum field fertilization techniques.
Source: Author

marginalized in land access based on their limited bargain power (Agarwal, 1997) in the household or in the community. Our study reported the positive effect of the size of land in adoption of improved varieties which could negatively impact women adoption of new varieties. The study findings show that adult (1.28 ha) and young women (1.5 ha) cultivate about half the land cultivated by their male counterparts (2.7 ha for male youth and 3.15 ha for adult men) in sorghum.

Soil fertility and use of fertilizer

Soil fertility refers to the capacity of the soil to sustain crop production and productivity by providing essential nutrient for plants' growth. Low soil fertility is a common problem in many regions across the world, particularly in West and Central Africa where the majority of smallholder farmers struggle to cultivate crops under low soil fertility conditions (Doumbia et al., 1998; Leiser et al., 2015). Three methods of fertilization are employed by respondents in the study region which are the application of chemical fertilizer, the combination of chemical and organic fertilizers, and the organic fertilizer. The main type of fertilization applied by the farmers was the combination of organic and chemical fertilizers. Almost 46% of surveyed sorghum growers appropriated the combination of organic and chemical fertilizer while 29 and 20% solely applied on chemical and organic fertilizer respectively; whereas 5% of respondents do not make use of any fertilizer for sorghum production (Figure 4). One of the focus group discussions reveals that although the majority of farmlands have poor soil fertility, women's farmlands are however, generally poorer compared to

men as reported by a woman during an FGD in Sirakele: "*It is difficult for us to get fields to cultivate, and when we get it, in most cases these fields are very poor*" (Sirakele, Female FGD, December, 2019). The data showed that fewer female farmers both young and older adults are disproportionally unable to apply or afford the use of both fertilizer types. However, much lesser percent (1.5%) of male youth compared to 8% of female youth, among the total of 9% did use any fertilizer input. In the farming landscapes of Mali, producers in general do not apply enough chemical fertilizers to produce sorghum, unlike maize that necessarily requires some good amount fertilizers. It is a well-established practice among farmers to cultivate cotton, maize, and sorghum in rotation. The fertilizers applied for the cultivation of maize and cotton support yield increase of sorghum by benefiting from the previous residual fertilizer input in the plots for maize or cotton cultivation from the previous seasons. Sorghum is known to be well adapted to low fertile which reduces the quantity of fertilizers required for its cultivation. In spite of the recommended dose of chemical fertilizer proposed by soil scientists for sorghum (10 kg/ha of urea for a yield of 1 275 kg/ha; see Traore et al, 2018, 744), most of the producers are used micro-dosing to reduce the cost of fertilization. This practice has greatly increased over the past 20 years because agricultural projects and extension services have promoted this technology.

Access to basic farm equipment

The survey revealed that about 56% of respondents have access to equipment; out of which 77% of men and 36% of women (Figure 5). The main reasons for inaccessibility
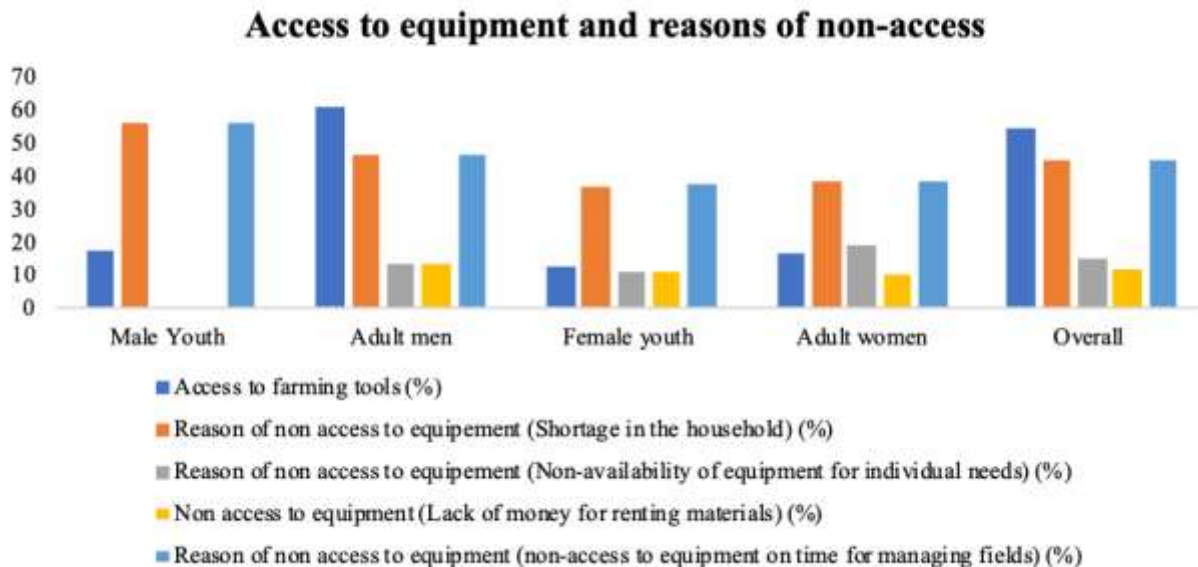
Figure 5. Access to and reasons for no access to equipment. December 2019.
Source: Author.

of the equipment are lack of money, non-availability of the equipment for individual need, and the lack of money for renting equipment. During FGDs, female respondents indicated that farms tools are prioritized for use on family fields, before it is used for the individual fields:

"…. even if having money, it is sometimes difficult to have equipment at the right period to plough field; because owners want to finish ploughing their own fields then after, they follow the queue of people that have asked for equipment for ploughing their field" (Kenie, female FGD, December, 2019).

More often when respondents mention farm equipment or tools, the most significant and basic tool referred to is the animal and small hand machine plough for used for ridging and other field operations. Figure 5 shows that 54% of respondents had no access to farming tools on time. The collective utilization of the main household agricultural tools, such as ploughs, carts and tractors, makes women dependent on men for the ploughing of their individual fields, resulting in late planting.

"The lack of equipment is one of the major constraints for us; we are sowing late because of the lack of equipment to plough our fields" (Kenie, female FGD, December, 2019).

Smallholder farmers in general are faced with inadequate and sometimes lack of access to basic farm tools for field management. Commonly in Africa and particularly in Mali, the socio-cultural practices are not in favour of women or consideration for their needs, roles and

responsibilities, which negatively affect women's access to farm equipment. One such norm and cultural practice is belief or perception about the roles of women in the farming system as playing support roles to their husbands through cooking and by providing labour on farms. The consequence of cultural norms as such on women's agricultural output is the fact that more often women ask for short duration varieties to reduce the yield lost and sow late in old ridge of previous cropping seasons. The late sowing is generally explained by the lack of equipment to plough the field at right time and the effect of climate change which is explained by the shift of optimal sowing period. In addition, for reasons of unavailability of short cycle varieties, farmers use local varieties with high photoperiod sensitivity (Vaksmann et al., 1996; Rattunde et al., 2013; Weltzien et al., 2018). Many studies have underlined the importance of sowing date in crop yield performance, in particular the late sowing, can cause important yield lost (Dingkuhn et al., 2006 ; Leiser et al., 2012).

Types of crop varieties

There has been an increasing effort in developing improved varieties with the aim of helping farmers to reach food security and increase incomes. The finding revealed (Figure 6) that local varieties remain by far the most cultivated sorghum varieties by 73% of respondents, while 26% of respondents cultivated improved varieties. The adoption rate of sorghum improved varieties in this study which is less than 30% is similar to many studies (Diakité et al., 2008; Smale et al.,
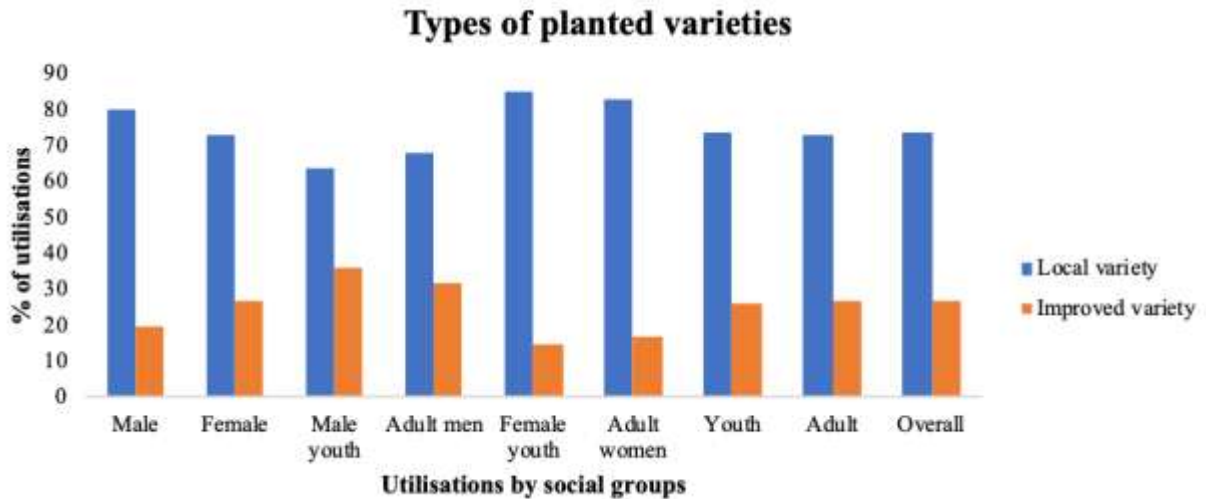
Figure 6. Types of sorghum varieties grown by respondents.
Source: Author

2016). As reported by Polar et al. (2021, 79), lower adoption of modern varieties among women producers emerges as significant trend due to their poor physically access to household farming tools. The percentage of women (27%) that were using improved varieties to produce sorghum in our study is higher compared to men. While there is no significant different between the number of adult and youth respondents using improved sorghum varieties (respectively 27 and 26%), more female farmers (youth and adult) used improved sorghum varieties than their male counterparts. A number of reasons contributing to the low adoption of improved varieties by farmers were highlighted. For example, from FGDs, these factors include: seed non-affordability and low adaptation of the improved varieties to the local environments on farmer' farm. The low level of education among farmers, and particularly female farmers, who in addition have poor networking with extension services and research institutes, and low access to land and farming tools, negatively affects the adoption of new improved varieties (Manda et al., 2020). On the other hand, some farmers reported that they preferred improved varieties instead of local varieties because of rainfall shortage and pest attacks. A woman stated this:

'*We are looking for improved varieties, because our local varieties are late maturity and the rainfall become increasingly scarce. In addition, there are some problems of diseases and insects' sensibility, etc.*' (Kalassa, female FGD, December, 2019).

This statement of the said lady must be put in its social and technological innovation contexts. The author of this quote is from a community where improved seed varieties are introduced by research institutes and farmer

organizations for a while. This assumes higher awareness rate of the improved varieties. The majority of the study participants in the village are members of farmers' organization and the study area is more or less completely covered by the activities of breeding programs, which should enable farmers easily obtain information on the improved varieties (Doss and Morris 2000). On the other hand, Access to (improved) seed, as shown by Galiè et al. (2017, 2), is considered important for the empowerment of women farmers because lack of basic productive resources affects survival and hinders any path to self-determination.

Sorghum value chain actors' traits preferences by sex

Innovations such as improved varieties have great potential to contribute to agricultural production the livelihoods of value chain actors if these innovations meet users' needs and demands. Identification of desired traits in improved sorghum varieties is an important component in the breeding program modernization. The desired and identified traits and attributes help breeders prioritize and breed varieties that would be accepted by a wide range of users along the sorghum value chain. For the purpose of this, the sorghum value chain is categorized into four basic nodes: production, grain trade, processing and consumption. Individual preferences are an important dimension of the power to choose (Polar et al., 2021, 81; Kabeer, 2005). Gender inequality relates directly to power. One aspect of power is the ability to make choices (Kabeer 2005). Women and men may not have the same possibilities to make choices, and gender-related disparities often intensify the effects of poverty, creating

cycles of greater inequality. To give equal chance to choose, the sorghum value chain actors were asked to rank traits based on their importance where 1 =very important, 2= somewhat important, and 3 = not important. Based on the importance of the traits to the respondents, the most important traits were ranked first by sex and value chain nodes. This was undertaken to measure the extent to which sorghum value chain actors value the different traits of sorghum varieties (Table 3). Wilcoxon test method was used to rank the top 5 preference traits. The ranking of traits shows heterogeneity in preferences along the sorghum value chain. At the consumption *node*, there is no significant difference between the traits preferred by female and male sorghum consumers. The grain appearance (colour) is ranked among first the features preferred by men and women. For feeding purposes, even if the variety is rich in vitamins and micronutrients, meal physical attractiveness is an important driver for consumer choice. The consistency of local dishes is ranked first by male sorghum consumers and third place by female consumers. During periods of intense agricultural activity, according to FGD participants, varieties that give consistent local dishes are preferred for the simple reason that they allow them can be preserved for a long period without going bad. Digestibility and nutritional qualities were ranked third by male sorghum consumers and second by females. This result is not surprising when one considers that all these traits are related to food processing and nutrition.

As traders are the intermediaries between each of the value chain actors, they seek varieties that meet the preferences and choices of the other value chain actors. To this end, storability is ranked as the top most trait preferred by both female and male sorghum traders. Grain storability is one of the conditions for traders to sell quality products at good selling prices. Grain softness is ranked second by both male and female consumers. The grain softness is of paramount importance for the women when decorticating and pounding the grain. The softer a grain is, the faster it can be transformed with a considerable saving of time for the women. The time saved from decortication and pounding soft grains is used by women in income-generating activities or in child care. In third position, the women naturally chose the cooking quality and the men the quality of raw materials. In terms of preferred traits for processing, there was significant difference by gender in the choice of some traits. The result reveal that women preferred the high bran content for processing while men ranked the cooking quality for sorghum processing first. Grain softness is the second most preferred trait by men and women. In fourth position, men prefer decorticability while women prefer high flour content for sorghum processing. These significant differences between men and women in the processing preference traits can be explained the less involvement of the men targeted in the processing activities. The trait preferences of the production segment

actors are related to the pedoclimatic and biological constraints faced by the farmers. The classification of preference traits in the production node showed gender differentiated traits. The disease and pest resistance, resistance to bird attack, and early maturity are respectively the first, second and third preferred traits for male farmers while resistance to bird attack, crop rotation performance, and disease and pest resistance are the top three trait preferences of female sorghum farmers. Even though the yield alone ranks fifth for men and fourth for women, the above-mentioned traits improve the productivity of the plants in grain and forage. It is not surprising that among women bird resistance is the most preferred trait for the simple reason that women's sorghum fields, which are usually sown late, are more prone to bird attacks than those of men. In general, a comparison of men's and women's ratings shows that traits related grain quality and food quality are highly preferred by consumers, traders, and processors, while traits related to the resistance to abiotic and biotic stresses are mostly preferred by sorghum producers. As our analytical approach is intersectional, let us analysing the preference traits by sex and age categories.

Traits ranking by value chains actors and gendered age categories

Producers trait preferences by age categories

Figure 7 shows sorghum production traits disaggregated by sex and age categories. The sorghum production traits identified by adult and young men and women are high grain yield and grain quality. But in particular, traits like easy for cooking, consistency of food, and short duration were only preferred by young women and adult women. Traits like ease to cook (that is easy to pound, decorticate) and consistence of local dishes are related to the quality of end products (grains) from the production and to food production processes which are important for women in terms of reduction of drudgery and self-esteem. When a woman cooks a food, and when this food is not edible, it is very shameful for her.

'*I could not imagine that what I am cooking is not edible. It is the supreme shame for a woman in our community. May Allah prevent this from happening to any woman. There is a variety here that I will not name, which has a grey coloured for the to (sic. the most popular dish in rural Mali), which is very high yielding, but cannot be eaten twice is the kind of variety that brings women into disrepute. No matter what we do from this variety is not appreciated. It is not the fault of the woman who prepares, but of the variety".* (Female KII, Dioila, December 2019).

That is why the quality of food is a feature that is of paramount importance to women who are concerned not

Table 3. Average scoring of importance of sorghum traits for value chain actors.

Nodes	Traits/characteristics	Average rating			Ranking of top traits	
		Male	Female	P value^t	Male	Female
Consumption	Grain appearance (colour)	1.64	1.651	Ns	1	1
	Consistency of local dishes	1.64	1.562	Ns	1	3
	Digestibility and nutritional quality	1.611	1.586	Ns	3	2
Marketing	Grain storability	1.8	1.935	0.08117*	1	1
	Grain hardness	1.707	1.823	Ns	5	
	Grain softness	1.73	1.887	0.08373*	2	2
	Glume openness	1.73	1.852	Ns	2	5
	Easy decortication	1.703	1.836			
	Grain poundability	1.622	1.82	0.0373**		
	Cooking quality	1.644	1.885	ns		3
	Quality of raw materials (grains and fodder)	1.716	1.689	ns	3	
	Food yield	1.662	1.852	0.03826**		5ex
	Final consumer product quality	1.653	1.817	0.08993*		
	Grain quality	1.712	1.867	ns	4	4
Processing	Grain storability	1.653	1.597	ns		
	Grain hardness	1.625	1.658	ns		
	Grain softness	1.718	1.773	ns	2	2
	Large grain size	1.704	1.691	ns	4	
	Decorticability	1.704	1.732	ns	4	3
	Poundability	1.686	1.711	ns		5
	Cooking quality	1.729	1.557	0.03149**	1	
	Food yield	1.609	1.642	ns		
	End product quality	1.623	1.699	ns		
	Grain quality	1.623	1.689	ns		
	High bran content	1.652	1.841	0.03534**		1
	Grain uniformity	1.667	1.723	ns		4
	High flour content	1.706	1.653	ns	3	
Production	Panicle compactness	1.891	1.839	ns	3	5
	Yield stability	1.763	1.719	ns		
	Yield	1.873	1.855	ns	5	4
	Crop rotation performance	1.857	1.86	ns		2
	Disease and pest resistance	1.966	1.857	Ns	1	3
	Resistance to bird attack	1.941	1.875	Ns	2	1
	Early maturity	1.891	1.667	0.0042***	3	
	Late maturity	1.882	1.786	ns	4	
	Responsiveness to low fertilizer inputs	1.873	1.696	0.07793*	5	

***,** and * significance at 1, 5 and 10%; ns= not significant.
Source: Author

only with preserving their honour as housewives, but also with providing quality food for family members. To say that the dishes prepared by such a woman were insufficient and could not be eaten because of the poor quality of the grain, the flour or the breakage is the height of dishonour for a woman living in a rural polygamous family characterized by conflicts and disagreements between co-wives. The last trait that is specific to women and important for young and adult women is early maturity. In the rural mindset, the responsibility for cultivating dry cereals such as sorghum lies exclusively with the heads of households, and the maintenance of these fields is the responsibility of all household members. The rationale behind this social mode of

Sorghum producers' trait preferences by age categories
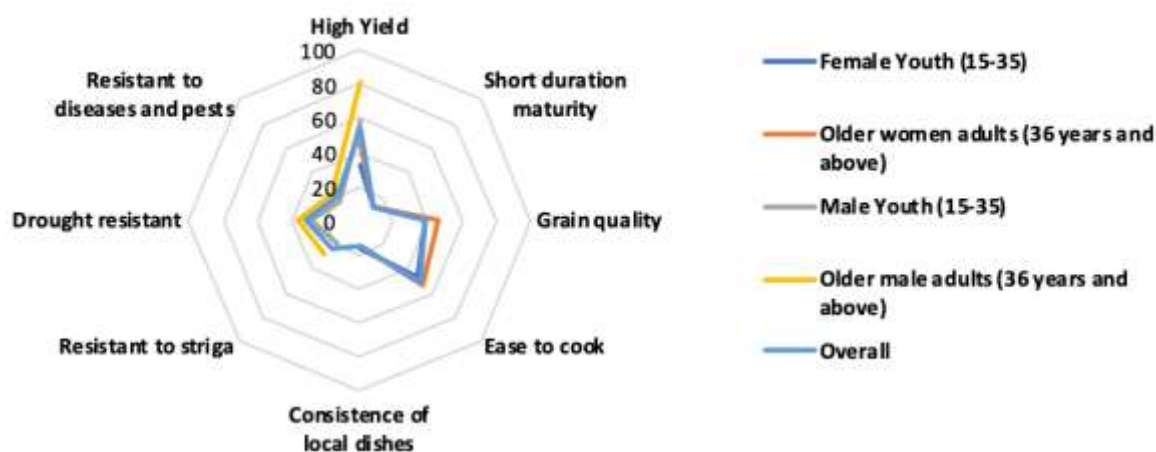
Figure 7. The most important sorghum traits preferred mostly by producers (age groups and sex).
Source: Author.

organization is that it is generally understood that the household feeding is the responsibility of the household head, while the production of the main foodstuffs (maize, millet, sorghum) is the collective responsibility of all household members and requires first the use of the household's farming tools. Based on this kind of role sharing among household members, sorghum production by women is relegated to the background because women sorghum harvests are not necessarily meant for household consumption for men, although in case of famine or during lean period, women's grain stocks are used to feed the household's children. Thus, women's fields are ploughed after the collective household fields and the individual men's fields. As a result, women sow late because of the lack of consideration of women's sorghum fields men and women limited or difficult access to family ploughing equipment or to rent farming tools during intense farming periods. However, with the early cessation of rains, late sowing is synonymous with poor harvests. This is why women favour short-maturing varieties so that with late planting they can maximize their chances of a good harvest. The study shows that traits like grain yield, resistance to diseases and pests, striga resistance, and drought resistance were specific to young and adult men (Figure 7). This result is similar with the finding of a previous study (Weltzien et al., 2019). Because of its high adaptability and its importance in food provision and income generation, sorghum is unique in its ability to grow under a wide array of environmental conditions, making it a resilient crop (Melesse et al., 2021, 4). High yield and grain quality are the traits preferred by adult and young men and young and adult women. If yield and grain quality are important traits for

all surveyed producers, high yield is very important for both adults and young men while grain quality is mostly preferred for adult and young women. This shows that even if production-related traits are discussed, women are more careful about traits (such as grain quality) that are related to the consumption of the final products than men. These results show that adults and young men and women have varied experiences and expectations depending on their social roles and responsibilities in the households, which differentially influence the needs, priorities, and constraints they face individually. More often, women's and men varietal choices are guided by the plant's attributes that are linked to needs and constraints such as adaptation of crop varieties to the environments like field and climatic conditions. One of the major constraints mentioned by respondents was the low soil fertility, rain shortage, and difficult access to farming equipment. In particular, women (both adults and young) are challenged by the late access to collective farming tools and their fields are very poor compared to men's field which indicate the need for early maturity and adapted varieties to low soil fertility and drought. In addition, grain quality is a set of attributes including hardness, storage ability, food quality, and threshing ability which are important traits of sorghum varieties for production, processing, commercialization, and consumption purposes (Diallo et al., 2018).

Marketers trait preferences by age categories

The results of the study revealed that respondents are mainly growing sorghum for home consumption (60%)

Sorghum traders' preferred traits by age categories
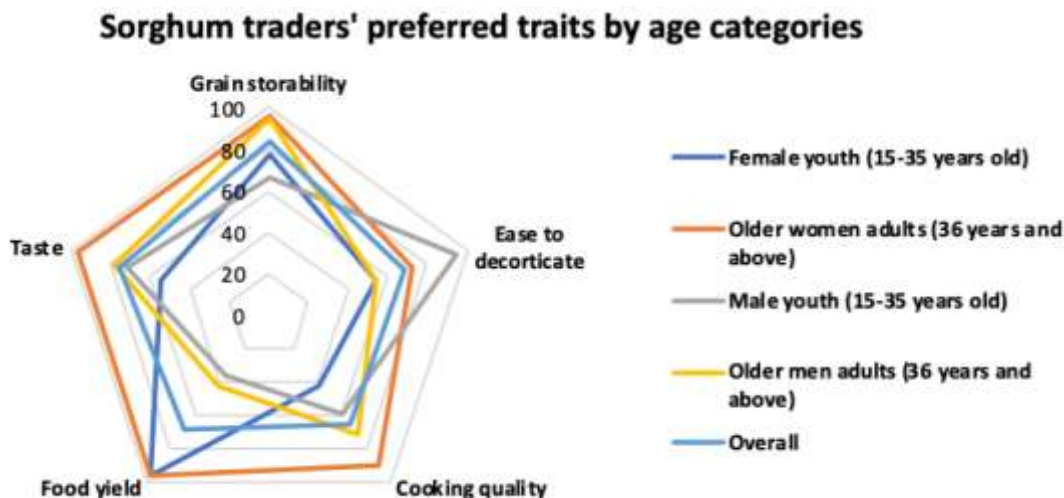
Figure 8. Sorghum traits preferred by buyers/traders disaggregated by age groups and sex.
Source: Author

and the rest are sold (26%) to traders and processed (12%; Figure 8). Before buying sorghum grains, at least 79% of traders desire the following traits: grain storability, ease of decortication, cooking quality, and food yield. These traits are important both for adult and young men and women traders, but often to varying degrees. For instance, cooking quality, food yield, and grain quality are important to adult and young women traders when they decide to buy sorghum grains while ease of decortication and taste are considered by young men traders when they market or buy sorghum grains. Grain quality, cooking quality and taste are mostly considered by adult male traders. During the FGDs and KIIs in Dioïla, it was reported that the farmers are often called upon to produce specific sorghum varieties with specific traits for the demands of partners and NGOs. These types of varieties are only produced for the market. The World Food Program (WFP) being an important client for farmer organizations when it comes to the grain sale contracts farmer organizations for the supply of sorghum grain with special characteristics for its nutrition programs (for health centres, and school canteens). For instance, in Dioïla often The WFP makes specific demands for white sorghum grains. This type of white grains is mainly *caudatum race* variety type like *Soumba, Seguifa, Grinkan, Tiandougou*, and few *guinea races* like *Seguetana* (KII, Dioila, December, 2019). High market demand is an important determinant for the adoption of particular varieties that meet the preferences of key customers. In spite of sorghum is a very important source of food and income for small farmers (FAO, 2020), it is still marketed in informal or traditional ways because of the lack of opportunities to industrially process sorghum and control of price by traders. These factors negatively impact on both sorghum production and productivity by

preventing small scale farmers to substantial invest in farm inputs in order to increase the production of sorghum.

Trait preference for processing by sex and age categories

This study did not include participants involved in formal sorghum processing due to their absence in rural and peri-urban areas. Based on the poor development of processing factories in rural and peri-urban areas in Mali, the study focused more on women that are responsible for food preparation in household and engaged in the sale of manufactured food items as income generating activities in rural and peri-urban settings. The study reveals that sorghum processing activities are essentially females'; individual men are not yet fully involved in 'traditional' processing in the villages. Individual men are part of the governing board of women processing groups. This is to say that even if men have few experiences in processing, they are more in administrative, organisational and financial management and in external relations. And often, it is through these few men that the village chieftainships exercise control from a distance over the women's processing groups that have become the main focus of development agencies in recent years. As a result, the traits preferred by adult men and young men in the process are not visible in our analyses.

Figure 9 shows the traits preferred by women sorghum processors regardless of the age groups are: consistence of end products, cooking quality, ease of grinding, high flour content, and storability of end products. The analysis shows that the traits preferred by women processors are quite similar to those identified by consumers (Figure 10).

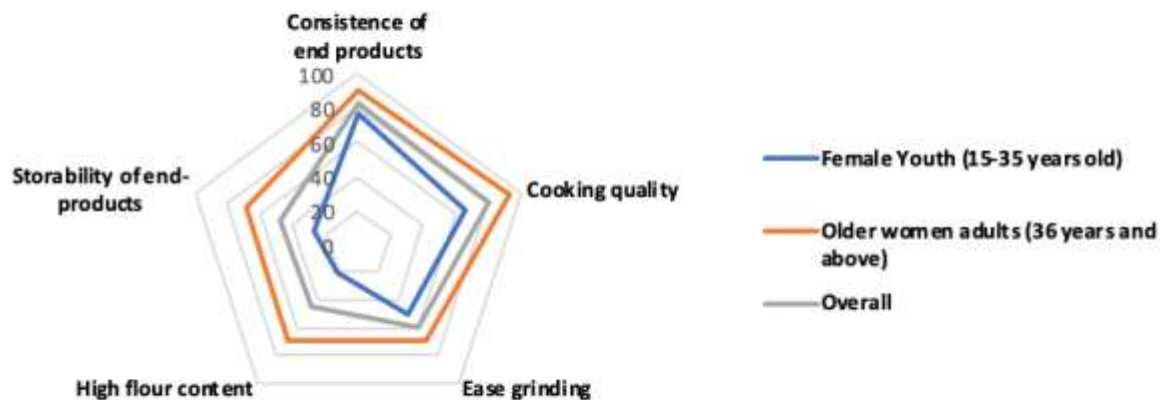## Sorghum processing traits disaggregated by ages groups and sex

Figure 9. Sorghum traits preferred by processors (age groups and sex).
Source: Author

Sorghum consumers' preference trait attributes by age categories
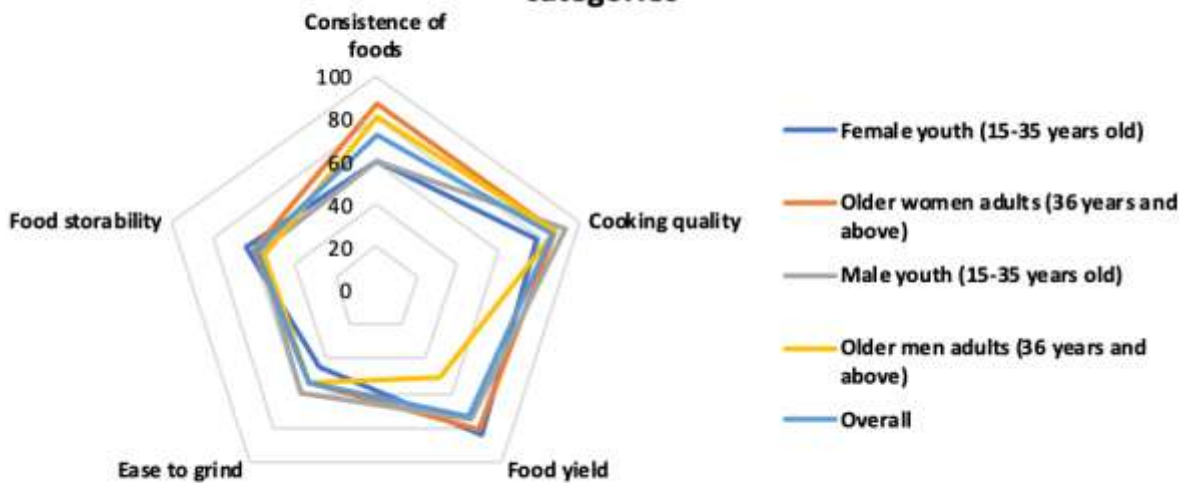

Figure 10. Sorghum traits preferred by consumers (age groups and sex).
Source: Author

During FGD discussions with Karangana mill staffs (Region of Sikasso), specific traits emerged in terms of processing demands as high flour content. Grain mills have a specific need for seeds to facilitate processing: grain storability, grain size, grain hardness, and flour whiteness. Based on these traits, workers of Karangana mill have clear understanding of sorghum varieties with specific traits of preferences:

"*For the improved varieties, we appreciate Pablo variety,*

because of the grain size, the white colour, and the hardness of the grains. This variety is suitable to be transformed into semolina and flour" (Karangana, mixed FGD, December, 2019).

As the demand of flours is increasing across Mali, the development of flour mills can industrialize the processing sector, increase the income of all sorghum value chain actors, and create off-farm opportunities for youths and women who are lacking opportunity in rural and peri-

urban settings.

Traits preferences of consumers and end users

Sorghum is part of the most consumed crops in rural dwellers and by poor citizens. This crop is mainly used in the home for local meals such as gruel and thick porridge (Tô), couscous, thin porridge (cream) *Degue* and *Gningninkini*. Beyond being used as staple foods, in Tominian (Segou region) and Koutiala (Sikasso region), local beer is produced with a particular red sorghum local variety. The most important traits preferred by sorghum consumers are: food storability, food yield and food texture which is considered as food consistency (Figure 10). Moreover, there are similarities between men and women, young and adult consumers in terms of their trait preferences. Sorghum is an important source of energy, protein, vitamins and minerals for the millions of poorest people in WCA and Mali in particular (FAO 2017). *Soubatimi, Tiandougou-coura, Seguifa, Pablo, and Fadda* are some of the sorghum improved varieties which are Zinc, Fe, vitamin A content. To fight hunger and malnutrition, awareness rising campaigns toward the utilization of smart foods from high content zinc, Fe and vitamin varieties should target poor consumers of sorghum like rural pregnant women, and children under 5 years old. Sorghum plays also important role in animals feeding, in particular the dry season when the needs of fodders for animals are very crucial to feed plough oxen and small ruminants. Weltzien et al. (2018) reported that women often cultivate sorghum for special needs, such as for children's meals outside of the main meals, during the hunger times when men's stores are exhausted or for sold out to meet household expenses. In spite of its vital role in food security, sorghum does not benefit from the same support unlike maize by Malian decision makers in terms of sector structuration and input subsidy strategies.

Reflections on new avenues, engagement and participation in breeding activities

Many studies have reported on small scale farmers' participation in breeding activities which suggested is the key strategy that leads to high rate of adoption of new technologies (Weltzien et al., 2019; Diallo et al., 2018). These study findings revealed that producers participated in breeding activities through farmer organizations or agricultural extension service activities and NGOs (Weltzien et al., 2019; Diallo et al., 2018). As farmer organizations are the main actors of on-farm breeding activities, they choose or propose farm testers to conduct breeding activities. This choice is generally motivated by criteria related to the activities and farmers' personal abilities and skills. Thus, breeding activities implemented by respondent farmers are: varietal tests, demonstration

tests, nursery tests (segregated population), seed production, and field visits, planning breeding activities for the following years, and training of trainers (ToT). At the beginning of breeding activities by farmers, farmer' groups organized meetings to explain and inform their members about the activities, breeding activity requirements and their benefits for community agricultural development. Volunteerism, availability and ownership of land and equipment are key criteria for involvement in participatory varietal selection activities at the community level. The bad governance in farmer organizations was impacting negatively on the participative plant breeding approach in many villages where breeding activities were started. According to one key informant in the district of Dioila, the distribution of breeding activities among organization members was not fair:

"*Some time the heads of farmer organizations influenced the distribution of some activities which can negatively impact on these activities. The fact that they receive free money and fertilizer for the implementation of breeding activities makes them exclude others. Such a management is not likely to lead to a great inclusiveness of the producers in these breeding activities*".

The advantages gained from breeding activities implemented by villagers (free distribution to inputs for the implementation of project based activities, money, participation in workshop and meetings, linkage with development institutions and research institutes) promotes the exclusion of vulnerable groups (women, youth, ordinary association members) and participates in the emergence of conflicting power relations within farmers' organizations with regard to the implementation of participatory varietal selection activities. For instance, according to a field researcher, in the district of Tominian (Segou region) where the first experiences of participatory plant breeding activities started in 2000s, women participation was a real concern. Women were somehow excluded of breeding activities because of lack of time, material and land and men strong control on women mobility. The issue of low participation of women in breeding activities was raised by a key informant in terms of lack of lands and equipment for women. Patel (2012) had similarly reported the limited participation of women in research by many factors including social norms that hindered women participation in breeding activities. Patel's study revealed that women farmers are facing difficult access equipment and land is generally managed by family men. However, Mulema et al., (2019) reported on the importance of women participation in agriculture research as key strategy to sustain agriculture development and the importance of women participation in identifying and prioritizing research problems, identifying and testing technology options. If the low participation of women in breeding activities is a general issue in agriculture in Sub-Saharan Africa, specific

constraints were identified in our research sites. In Dioïla (Koulikoro region), for instance, the main constraints in the set-up of breeding activities are the low collaboration between farmers and extension agents in the follow up of breeding activities and the lack of breeding materials or their on-time availability. One male key informant reported this:

"*We have no problem with the collaboration, but more often the material of the test (varietal test and nursery tests and demonstration and trial) arrived late and this finds that most of the producers have already sown their all fields* " (Dioïla, December, 2019).

As related to poor collaboration between farmers and extension agents, many breeding activities are project-based which means that when the project ended, the activities implemented in the framework of the project end too. To address this constraint, farmer grassroot organizations should shift from project-based breeding activities to market-oriented ones and to develop public and private partnership activities (such as networking, and to make contract with seed companies, State and NGOs). In the practice, plant breeding activities were for a long time intended for producers to the exclusion of other consumers of the products of the selection. But, the involvement of farmers, consumers, private sector, and other stakeholders in breeding cycle is essential because it enriches the selection process by considering preferences, choices, perspectives, and multiple selection criteria in environments with different contexts, value and socioeconomic backgrounds (Quisumbing and Pandolfelli, 2009). Through participation, farmers and other stakeholders gain more knowledge about new varieties, which facilitates earlier adoption through improved access to best-bet clones (Klawitter et al., 2009). Finally, if women are little included in breeding programs despite commendable efforts by research institutions, our study reveals that participatory approaches to variety selection are more focused on the production segment as if the traits that are valid for producers are also valid for other value chain actors.

CONCLUSION, RECOMMENDATION AND LIMITATION

Sorghum appeared as one of the main staple foods consumed in rural and peri-urban Mali and plays a key role in food and nutrition security of households. Despite of its importance and the continuous efforts deployed by national and international crop improvement research programs, inadequate or unavailability of quality seeds, poor climatic conditions, pest and diseases among others, have resulted to low productivity and yields, and to poor economic gains for value chain actors using current sorghum varieties which are not often meeting their needs. This study investigated sorghum value chain actors' varietal traits preferences and how intersectional and gender analysis of actors' trait preferences that can enable inclusive involvement in breeding process and influence adoption. The result of the study reveals that smallholder farmers' decision of sorghum traits are compounded by the difficulty farmers and women in particular are faced with in accessing equipment and inputs. Field management requires farm equipment and adequate input supply in all the study areas to contribute to food security and reduce labour intensity. Access to quality seed is central to crop production, farmers' access to quality seed can be facilitated by strengthen effective seed producers' involvement in the seed system to drive and improve access to high quality seeds. Concerning preference traits, farmers are mostly producers and consumers of sorghum grains which indicate that more focus should be take on farmers' preferred traits for fitting breeding objectives and prioritized those traits for breeding. When specific traits were identified and breed and all stakeholders are targeted, the needs and preferences of all value chain actors are targeted and met. The gender analysis of traits provides gender specific information on preferences and choices. The study revealed the complementarity in the choices of actors by gender (sex and age categories). Female youth and older adult females seem to have similar choice pattern as well as adult and young men due to their roles and needs within the household. Many women and men respondents have emphasized crop adaptation traits like adaptation to low input fertilizers, and grain quality traits like grain hardness, quality of the end products (that is, easy for decortication and high food yield) as essential for them and for all value chain actors. Prioritizing these traits chosen encourages appreciation of the varieties and subsequent adoption by a wide range of stakeholders or end-users. The study shows a direct association or influence of roles and needs actors within the household and value chain node on the varietal choices they made. While both male and female respondents have emphasized crop adaptation traits like adaptation to low input fertilizers, grain quality traits like grain hardness, and quality of the end products (that is, easy for decortication and high food yield) were found as essential for them and all value chain actors. However, grain quality, food quality, grain yield, and cooking quality are the most preferred sorghum traits by the female actors independent of the sex of respondents. At the consumption node, there is no significant difference between the traits preferred by female and male sorghum consumers. However, for consumption needs, the grain appearance (colour) is ranked first among the features preferred by men and women. For feeding purposes, even if the variety is rich in vitamins and micronutrients, meal attractiveness is an important driver for consumer choice. The consistency of local dishes is ranked first by male sorghum consumers and third position by female consumers.

Trait analysis through intersectional perspective (age group segmentation into youths versus adults) revealed that grain quality, food quality, grain yield and cooking quality are the most preferred sorghum traits for all segments and social categories independently of the sex of respondents. However, the study showed that gender differentiated and value chain actors' trait preferences are related to resources, rights, production norms, responsibilities and bargaining power shared and endowed by individuals. The breeding activity being about priority or step by step working, in order to prioritize identified must-have traits in breeding, it is important to focus first on adaptation traits aspects like adaptation of low soils fertility which is more complex to handle in breeding and grain quality such as and hardness which more related to grain storability, food consistency, and food storability traits. The objective of PPB being genetic plant improvement, meeting customer's needs and improving adoption of varieties, due to the intentional and instrumental character of breeding process, value chain actors' needs may be marginalized or left out of trait targeting dialogues due to the cultural context (such as low participation women, youths and private sector actors in trainings, meetings, demonstrations) and the used breeding methodologies (more focus on farmer issues to the detriment of other economic actors). Women and young people in particular are often left out of agricultural research processes, and their perspectives and needs are essential to understand and to report in order to improve adoption of new crop varieties responding to customer preferences. The needs and preferences of the value chain actors should therefore be addressed through engaging with and listening to their perspectives in terms breeding priorities for varietal trait developments. Based on these results, social and gender inclusiveness in the product development is the better way to enhance gender equality when women and men's voices along value chain are heard and effectively inform the breeding process.

For better social and gender targeting of demanded traits, it is important to reinforce collaboration between breeders, social scientists, value chain actors, and grassroots organizations to consider gender roles, responsibilities, norms, power endowments, preferences, and choices in the development of breeding products. In terms of policy recommendation, the development of adaptable sorghum varieties to abiotic and biotic stresses with high grain quality and adaptable to diverse utilizations for consumption and processing purposes is recommended for the implementation of gender-sensitive and market-oriented breeding programs. Continuous effort toward raising awareness of improved varieties and sensitization to adopt new resilient and suitable varieties to meet demands in the food production cycle is demanded by value chain actors.

Every study has limitations. One of the limitations of this study is the small sample size of grain traders and processors, although a sampling strategy had been developed beforehand in order to have acceptable numbers for each of these segments of the sorghum value chain. This is due to the fact that these two segments are not well developed in the villages and communes where the surveys were mainly carried out. An additional study with the food industry is necessary to better understand and deepen the preferences of processors.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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