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Continuing Education During Times of War: Experiences of Children in Northern Sri Lanka

Abstract
The primary objective of the study was to explore the experiences of children during and after 30 years of civil war with particular attention on its impact on their academic learning. The research intended to answer two research questions, namely 1) How did the war impact on children's education? and 2) What support networks were available for children affected by war to remain in school and/or to continuously engage in academic learning? The research was carried out in the Jaffna District of Northern Sri Lanka and depended entirely on qualitative data generated through in-depth interviews, key informant interviews, focus groups discussions and observations. Multiple displacements caused by war, the impact of war on livelihoods and the trauma caused by war has resulted in some students losing interest in school and eventually dropping out. In spite of various financial and other support provided by local and international NGOs only some children have remained in school with a sustained interest in education. A characteristic common to these children was that they came from more 'secure' family backgrounds. The security offered by intimate relationships within the family seems crucial for educational success even during times of war. The findings suggest the need for strengthening family well-being and stronger emotional support to ensure sustained interest in education during times of war.

Keywords: Sri Lanka, civil war, education, social capital, family

Introduction

Thirty years of war in Sri Lanka has destroyed the country's physical infrastructure and harmed human life leaving many families in IDP (Internally Displaced Persons) camps. Northern and the Eastern parts of the country has been the worst affected by war. In the context of war, children and women are usually identified as vulnerable groups whose security is likely to become more fragile than other members of the same affected society (McKay, 2004; Onyango, et al., 2005; Somasundaram, 1998; Tolin & Foa, 2006). In the case of children, their education, measured through school attendance and acievements at examinations, is a key area in which their rights are likely to be violated.

Keeping children in school during times when their mere survival is threatened, would firstly require that their basic needs such as food, health and shelter are adequately fulfilled. Secondly, social and psychological wellbeing of children would be essential to ensure that their interest in education is sustained, because education is likely to be pushed away if these primary needs are not fulfilled. The current study proposes to examine the impact of war on children's education by examining 1) the nature of its impact on children's education and 2) the kinds of support networks available for students to remain in school with their interest in education intact.

The research was carried out in the Jaffna District of Northern Sri Lanka, one area worst affected by 30 years of civil war. Data collection was done mainly in two Divisional Secretariat Divisions (DSD), namely Vadamaradchy North and Valikamam North. Coastal villages in Point Pedro in the Vadamaradchy North DSD, Thumpalai, Punidhanagar and an IDP camp in Polikandy were studied. Fisheries villages in the Madhagal Coastal area and two IDP camps in Valikamam North were also selected for data collection. In Kankasanthurai, the staff and Principal of a school that was moved to another area during the war and resettled back in its original place in 2017 were also interviewed. An observational visit was also made in the Vadamaradchy East DSD gaining the opportunity to speak to few villagers from Maruthamkerny and some officials at the Divisional Secretariat (DS) office.

The study depended entirely on qualitative data generated through in-depth interviews, key informant interviews, focus groups discussions and observations. Key informant interviews were conducted with authorities in the DS offices of the respective DSDs, zonal education officers and local politicians while focus group discussions were conducted with community leaders, social workers and villagers. In-depth interviews were conducted with women leaders and members of the community. In total a sample of 16 Government officials and Politicians, 20 villagers (men and women) and 11 social workers were interviewed during the study.

Impact of war on education

Being one of the first locations to have established missionary schools during the time of the British, people of the Jaffna peninsula, particularly the Vellalas, has always been known for a keen interest in education shown by its people (Sivakumar, 1989). The American missionaries also have contributed towards developing a strong educational base in Jaffna and opened up educational opportunities to many across caste and gender differences (Arunthavarajah, 2013). History records a steady stream of lawyers, teachers, doctors and civil servants from the Jaffna peninsula (Spencer, 2002).

However, possibilities of educational opportunities available to people are likely to be restricted by institutionalized social stratification structures, i.e. the class, caste and gender make-up of the people in the region (Lall, 2016).

Traditional social stratification structures of other regions in the country also has had a similar influence on educational opportunities available to individuals or groups. However, several decades of education, awareness, human rights movements and social protests for equality has contributed towards improving the situation in these other regions opening up more and newer opportunities for education irrespective of the social status quo. In Jaffna, the war delayed this kind of progress by about 30 years. The war slowed down socio-economic development of the region in several ways; namely death, disability, psychological trauma, displacement of several thousands of people, destruction of physical assets and outward migration of educated Tamil (Somasundaram, 1998). During the current study several respondents mentioned how the general standards of education in the area has dropped as a result of war.

> *Everybody is shouting that the North has gone down in education. This weakening of the education levels in Jaffna has been created by 30 years of war. Between 1983 and 1995, the cream of Jaffna left the country. 40 years ago, there were 25 piano teachers in Jaffna. Now, no one.*
> - Provincial-level politician -

The same view was expressed by a group of local elites during a focus group discussion in Point Pedro. The war has also contributed towards changing the traditional make-up of the educational institution in Northern Sri Lanka.

> *Poverty, lack of parental attention, alcoholism and low education levels of mothers play a crucial role in educational levels. IDPs who are the lowest in the social strata of the area face even bigger challenges. Earlier there were some elitist schools in Jaffna attended only by certain upper classes. During the war many of these families either migrated to the South seeking city schools or to foreign countries breaking the elitist identity of the schools. Now schools are attended by people from all walks of life.*
> - Provincial-level politician –

The same view was shared by several other government officials. These respondents believed that the shift in the elitist identity of some schools also resulted in a deterioration of education in general in the province. However, a social worker had a different interpretation about this shift in school identity. She pointed out that this shift in the elitist identity of some schools opened up educational avenues for academically inclined children from marginalized castes in the region as a result of LTTE (Liberation Tigers of Tamil Ealam) policies.

War is essentially a tragic and shocking experience for all citizens living in the concerned country/ countries. In the case of children, the impact of war can be particularly adverse given the fact that they are unable to fully comprehend the things that are happening around them. The impact of war on children could last even after the end of war resulting in long term shock (Akresh, Verwimp & Bundervoet, 2011; Boyden, 2003; Carpenter, 2005 & 2006). In addition to more than half of civilians that are killed due to war being children, they are made victims of war through several other means as well; child soldiers, internally displaced children, sexual assault and exploitation of girls (Hick, 2001).

Compared to the above kind of life-threatening adversities, the impact of war on children's education can be considered to be at a lower level of adversity. However, as in the case of trauma caused by war, the disruption of education will have long term impacts on the individual as well as the country. Civil wars damage the education system of a nation in two ways: 1) by loss of infrastructure and personnel; (2) by drawing funds into military activities rather than education (Lai & Clayton, 2007). National security and education are complementary factors that have been identified as vital in promoting national development. Therefore, children's right for education is stressed as a factor vital for a country's development (Shizha, 2017).

This perception echoed in the comments shared by most of the respondents interviewed during the study. None of the respondents interviewed during the study spoke of war having a 'direct' impact on the education of children in their community because they did not identify schools, teachers and students as direct targets of war. Damage to school infrastructure, death and immigration of people were discussed as having a secondary impact on education. The Government nor the LTTE were blamed for 'targeting' the schools or children's education during the battles. The issue of national funds been drawn from education to feed military activities, a more 'direct' impact, was not mentioned by any.

In spite of the negative 'secondary' impacts on education caused by war, the villagers did not identify the war as a situation that disrupted their educational opportunities. Rather, war was perceived as having 'restricted' their educational opportunities. During an FGD with village elites in Point

Pedro, individuals revealed the difficulties they and/or their children encountered as students. However, many had persevered in education.

> *The Girls' School had a bunker to protect students during shell attacks. Eventually when the war aggravated it was moved to another school. There, students studied in temporary huts. We had bunkers in our houses and we studied inside them, sometimes someone used to peddle a bike and light up using a dynamo so that we could read… Children were anxious about going to school during this time. Some children dropped out. Parents sat in schools while their children studied.*
> - FGD in Point Pedro -

Even those who joined the LTTE as child cardre and were directly involved in the war do not blame the war for disrupting their education. On the contrary, one woman said that she was allowed to go to school and study while being a LTTE child soldier[1].

> *I voluntarily joined the LTTE child cardres when I was 12. I was fascinated by the idea of being a soldier and went and joined. Because we were small, LTTE allowed us to go to school and study. But I dropped out of school. I left LTTE one year later. But my brother continued for 10 years and is now in a foreign country.*
> - Selvi, 40, Sinnathottam village[2] -

In fact some villagers thought of displacement, the most commonly stated impact, as having had a positive impact on their education. Gowri, a school teacher with four siblings who are all employed in Government jobs or in foreign countries, thinks that the hardships of war motivated them to study.

> *We became good in our school work because of displacement. We lost everything including a permanent house when we got displaced. That is what motivated us to study hard.*
> - Gowri, 36, Madhagal -

As pointed out by the above historical context and the respondents, the war cannot be seen as 'entirely evil' when considering the education of children in Jaffna. The respondents saw the war as causing more 'secondary/ indirect' impacts on children's education through the displacement of individuals and schools, loss of livelihoods and loss of social networks due to death.

Displacement of individuals

All villagers interviewed had experienced multiple displacements during the war. For example, all 42 families who were living in an IDP camp

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[1] There was only one former child soldier in the entire study sample, making it difficult to draw a concrete idea about this aspect of war.

[2] In citing statements by villagers, a fictitious name followed by real age and place of residence of the individual has been given at the end of the quote.

visited during the study have been displaced at least three times during the war. In addition to the war, the 2004 tsunami has also displaced people forcing them into refugee camps. Masses of individuals were forced out of their villages within seconds during the war. The only possession these people have had were the clothes they were wearing at the time of fleeing. Though many people have continued education as IDPs, displacement has impacted children's education in several ways.

Some respondents, now in their 30s or early 40s, claimed that this kind of mass movement of people got young boys and girls fall in love with each other leading to early marriages that eventually stopped their education. Rajini, now 30 years old, has had just completed Year 9 in school when the war aggravated and students were asked to leave the hostel.

> *My education stopped because of war. It is not that the Army or the LTTE physically pulled me out of school. But the hostel closed down as the war worsened. Large numbers of people were displaced and fled to Maankulam. Many girls and boys fell in love during this journey. Me too. Then my mother insisted that I marry him.*
> - Rajini, 38, Point Pedro -

Irrespective of reason for displacement, whether war or tsunami, its impact on children's education was the same. It was seen as a reason that resulted in teenagers falling in love and getting married young resulting in dropping out of school. Similar findings have been recorded in other settings where conflict and displacements prevailed (Schlecht, Rowley & Babirye, 2013).

Many respondents explained that parents saw marriage as a means to ensure the safety of their children during the war. In addition to providing the protection of a man for their daughters, marriage ensured that both young men and women would not be recruited forcefully as LTTE cadres (FGD with social workers). The same has been said about child marriages in conflict affected populations in Lebanon (Mourtada, Schlecht & DeJong, 2017). Early marriage not only resulted in dropping out from school but destroyed future potential of the women as most of these marriages became abusive to women (Kottegoda, Samuel, & Emmanuel, 2008; Lakshman, 2018).

As pointed out by Jayatilaka and Amirthalingam (2015), love marriages were encouraged by parents, mostly single mothers also as a way to get their daughters married without having to worry about a dowry.

> *My father died when I was very young. I studied up to Grade 8. Then I got married at 15. Without my father my mother couldn't manage the household expenses. That is why I dropped out and had to get married early. Because it was a love marriage, my mother didn't have to worry about.*
> - Lakshmi, 36, Punidhanagar -

The following statement by a mother clearly shows the relationship between war and early marriage. Janani, a mother who had given away her eldest daughter in marriage at the age of 17 to a boy aged 18, now says that she wants to educate her youngest daughter who is 12.

> *I too got married at 17. It was normal when we were young. I had to give my eldest daughter away in marriage at the same age in order to ensure their security against forced recruitment into LTTE. But now that there is no war, I do not want the same for my youngest daughter who is 12. I want to educate her as far as I can. She is also keen to study.*
> - Janani, 44, Point Pedro-

Rajini also had a similar comment to make about her daughter who is still in school. She said "First education, marriage later". This shift in attitude seems entirely caused by the end of war.

Another way in which displacement contributed towards dropping out of school was due to loss of school equipment (such as bags, uniforms etc.) and books during the fleeing. Research has shown inability to afford these education-related costs as a reason that obstruct the education of IDPs (Al-Khalidi, Hoffman & Tanner, 2007; Carillo 2009; Ensor, 2010). According to respondents in the present study, when children lost their books they eventually lost interest in studying and school, even when such facilities were provided in IDP camps.

> *Children lose interest in school when they lose all their school stuff, particularly the books. When we fled from our homes we just ran with nothing in our hands. Once settled in an IDP camp children received books, bags and shoes as donations. But that doesn't really help the children get back to school because their notes from the previous school is all lost. So children gradually lose interest in school and eventually drop out.*
> - FGD in Thellippalai -

Displacement and temporary closure of schools

In addition to displacing individuals and families, the war displaced schools as well. Nadeswara College in Kankasanthurai was once popularly known as school for children of elitist families representing high castes (refer previous quote from local politician). However, the school was displaced to Thellippalai in 1996 after the Kankasanthurai premises was taken by the Government for setting up a military camp. Schools being put to this kind of military use during war has been observed in other contexts as well (van Wessell & van Hirtum, 2013) and it is sure to disrupt academic activities conducted in school. Once brought to Thellippalai, even though the academic activities continued in the new location, the social make-up of the school changed drastically. Large numbers of its original student population dropped and increasing numbers of children with low-caste identity from IDP camps entered the school. In June 2016, the school was resettled in its original

location but by that time the composition of the student population and the social status attributed to the school has changed. Before displacement the school has had 3000 students, but in 2016 it had only 150[3] students. Majority of these 150 students were from IDP camps (Director, Valikamam Zonal Education Office & Coordinator, Chunnagam IDP camps). After its resettlement, the children who joined the school from IDP camps began facing financial difficulties of travelling to school as the bus fare is now much higher than what it was when the school was in Thellippalai. This is clearly an example of remnants of war impacting children's education even today. For example, Mary (war widow living in an IDP camp in Chunnagam) has three children attending this school and now the bus fare per day per child in Rupees 60. Given the current financial status of Mary's family the children are risking having to drop out from school. Continued existence of the High Security Zone run by the Government in the Kankasanthurai area which did not allow people to come back and resettle in these areas was another problem that impacted school enrollment.

> *It is meaningless to just resettle the school. We will not get any pupils if people are not allowed to come and resettle in their original homeland. We need people who will want to study in the school.*
> - Ganesh, Past pupil of Nadeshwara College in 2016[4] -

The village school in Madhahal has also been displaced to Manipay during times when the war intensified. The original location of the school has been used as a navy camp. According to the Principal of the school, their problems now are far greater than the problem of war. People are gradually recovering from the war, but there are historically engraved problems in the community that are not so easily overcome. Poverty, low levels of education of parents, alcoholism and the recent prevalence of drug abuse were identified as determining the educational achievements of children now.

The war was seen to have caused temporary closure of schools during times when the war intensified. During such times it was unsafe to be on the roads traveling to schools. Similarly, temporary closure of schools occurred when refugee camps were set up in schools during the war.

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[3] According to the school principal, there are only 102 students in the school now.

[4] The High Security Zone is now removed and people have been given access to their lands by now. Whether the situation has improved due to these new circumstances is not known.

> *My eldest daughter lost about 3 months of school, during her scholarship exam[5] year, as their school was used to house refugees. This may have caused her failure at the scholarship examination. But she later passed her O/L[6] and A/L[7] well. She got 3 As[8] for her A/Ls and is now hopeful of admission to Law Faculty. Other children's education was not disturbed by war. My second child also got through his O/Ls.*
> - Malar, 39, IDP camp -

Malar (39), a mother of five children was convinced that her other three children will also pass their O/Ls without any problem.

Weakened financial and social capital due to loss of livelihoods

Some individuals have had to drop out of school as a result of poverty that aggravated due to loss of livelihood and/or death of family members caused by war. Similar reasons for dropping out of school has been recorded elsewhere (Lakshman, 2018).

> *I was only two when I was first brought to an IDP camp. Of course I do not remember much. My family has been moving from one camp to another since then. My father died in 1990 due to war. We had no means of an income. Then my mother remarried someone she met in a camp. Later he too left her because the child born to them was severely disabled. My mother struggled to find work here in the camp. (Mother joins in) As children grow older school expenses also increase and I also had to look after my other daughter. I couldn't afford all this. So Anita had to drop out from school after passing Year 10.*
> - Anita, 28, Pulihandi[9] camp -

War disrupted income opportunities resulting in an exacerbation of poverty (Amirthalingam & Lakshman, 2012) which in turn led to dropping out of school. Severity of poverty in the region which affected education of children was explained using a unique example by some village elites in Point Pedro. According to them, people suffered so much in poverty to the extent that a bowl of porridge could attract them to school.

> *Children dropped out of school due to poverty which aggravated during severe conflict in the region. People didn't have enough to eat. NGOs gave porridge to school children and children actually came to school to eat.*
> - FGD in Point Pedro -

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[5] National level examination held during the 5th Year in school.

[6] O/L- General Certificate of Education (Ordinary Level) Examination is a national-level examination taken after 11 years of schooling.

[7] A/L- General Certificate of Education (Advanced Level) Examination is a national-level examination taken after 13 years of schooling. Results obtained at this examination determines a student's admission to a national university.

[8] An A is a distinction pass given to a student obtaining over 75% marks at both General Certificate in Education Ordinary Level (O/L) and Advanced Level (A/L) examinations.

[9] There are four IDP camps in Polikandi. The researcher visited only one of these camps. The camp visited is referred to as Polikandi camp without specifying the actual name or location of the camp.

Explaining the nature of deprivation experienced by the people still in IDP camps, the coordinator of several camps in Chunnagam also explained that some children go to school for lunch. He added "We can't really blame parents for the lack of interest in their children's education. These people have been living under these stressful conditions for several decades now". He explained how the tin sheets on their houses in the camp heat up during the day and how that itself was stressful enough for people when it is an everyday thing. The positive relationship between income levels and education levels has been confirmed by many researchers working in different social settings (Jordan, Kaplan, Oláh & Locuniak, 2006; Reay, 2006; Stinebrickner & Stinebrickner, 2003).

In some cases children have dropped out of school due to lack of interest on the part of the child. Although the reasons behind this loss of interest was not always clearly stated, data suggests a combination of poverty and an interest in an early income either to support the family or to enjoy the pleasures of 'adult life' (see Willis, 1977).

> *The boys dropped out because they were simply not interested. None of them completed O/Ls. We sent them to school, but they went somewhere else and came home after school time. It wasn't war or poverty that pulled them out of school, they were just not interested. But now, thanks to the money they are earning, they are supporting their sisters to continue education.*
> - Revathy, 44, Sinnathottam -

War, displacement and poverty were all at work in discouraging education of those living in IDP camps. Some girls had to drop out of school and look after younger siblings in order to help parents engage in livelihoods. This is a common coping strategy repeated in literature on other regions of the country even under more peaceful circumstances (Baker, 1988; Little 1999).

> *I completed pre-school and Grade 1 in Palali, my home town. Then we came to this camp. I could study only up to Grade 5. But my brothers and sisters are better educated than me. One brother and one sister passed O/L. The youngest sister passed her A/Ls qualifying for College of Education. But she didn't go because of financial issues. They could study because I stayed at home and watched them while our parents were away working. There was no one to encourage me to stay in school.*
> - Sangeetha, 22, Polikandicamp -

> *No body helped us with our education. I went up to Year 9 and then dropped out in order to work and earn. I then looked after my brothers and sisters and educated them. During the war we went from camp to camp. The LTTE also started training their child cardres in our school grounds. Those were also reasons to drop out, but the main reason was family burden.*
> - Saroja, 34, Punidhanagar -

During most of the interviews/FGDs with community-level leaders or elites, the case of the war widows was highlighted as a continuing challenge in the area. One form of supporting these women was the provision of livelihood opportunities (Gunatilaka & Vithanagama, 2017; Lakshman, 2017). Thushita, a war-widow originally from a fisherman background explained the difficulties she encountered raising two children without a husband.

> *I was the eldest in my family. I had two brothers and eight sisters. Our parents died when I was very young. My grandmother looked after us with the money she made making and selling hoppers. I walked on the streets selling hoppers. I studied up to O/L class. I dropped out of school because of poverty and because I had to look after my younger siblings. All my brothers and sisters went up to O/L or A/L. All of them, except one brother who died, are now doing well either here in Sri Lanka or abroad. Married at 21, I was 27 when my husband was killed. My daughter was one year old and I was pregnant with my son. Nobody was there to help me earn money. My siblings helped me make wadai and sell. I have achieved a lot thereafter. I managed to give 10 sovereign pounds each as dowry for my sisters; educated my children; built this house into its current structure; the villagers see me as an important character.*
> - Thushita, 51, Point Pedro -

Loss of intimate family members due to war, as in the case of Thushita not only affected their financial capital through loss of livelihoods but also their social capital (Lakshman, 2018). According to Coleman (1988) and Portes (1998), family background of a person forms an important part of that person's social capital. Lumsden (1994), for example, stated the role of the significant others (parents and home environment) in students' academic performance as a main factor which shapes the initial constellation of students' attitudes they develop toward learning. He stressed that "When children are raised in a home that nurtures a sense of self-worth, competence, autonomy, and self-efficacy, they will be more apt to accept the risks inherent in learning." (p. 2).

Support mechanisms available to remain in school

Several support mechanisms, from external as well as internal sources, were made available to victims of war and tsunami in order to help them remain in school. The external mechanisms were largely in the form of financial and material aid coming from the Government, NGOs and INGOs. Most of the support rendered has been to ensure the general wellbeing of the victims which may have indirectly contributed towards retaining children's interest in education if not in school.

There were also limited counselling services provided for children to help them overcome the psychological trauma of war. According to the zonal

education directors, a counsellor has been appointed for every school with a student population over 300. However, interviews with villagers confirmed that this was not the case in practice.

Internal sources of support included community and family level support that was the most useful in keeping children in school.

Support from the community

As explained by the group of social workers, community-level support was extremely instrumental in keeping children in school. Mary is a war widow living in an IDP camp with five children and no stable income. Her electricity bill got accumulated to an amount that she could not afford and currently she lives without electricity in her home.

> *I cannot afford to pay the overdue amount. My neighbour put up a bulb right over our fence. That is the only light we have. Now my children sit under that light and study.*
> - Mary, 43, Chunnagam camp -

War victims, particularly war-widows, were also supported by the community to develop means of livelihood. Thushita (see above) is one such female entrepreneur who helps 13 war-widows make an income for themselves. Improved family income levels due to this kind of livelihood opportunities not only helped keep children in school but also improved the social stature of women. Mothers' desire to educate their daughters is probably a result of this heightened social stature created by their improved income levels. Improved social stature and income levels of these women are likely to improve their social capital in the long run leading to improved educational opportunities for their children (Lakshman, 2018).

Community support was useful in helping resettled schools reach its aspired standards. Today, Nadeshwara College administration is worried that they may not get adequate numbers of students to continue the school. In order to solve this problem, the school and the past pupils are actively involved in providing material support to children as an incentive to come to school. Thanks to the school's 100 year old history and the caliber of children admitted to the school in the past, the school is generously funded by past pupils here and in foreign countries. Additionally, the past pupils provide funds for paying volunteer teachers who teach in the school. A comparison of the current plight of Nadeswara College and the school in Madhagal explains the significance of community support for re-establishing resettled schools. Even though the school in Madhagal is also over 100 years old, the past pupils are not as influential as in the case of Nadeshwara College. Historically the school has been attended by deprived low-caste children whereas Nadeshwara College has had very high class and elitist students. Therefore, improving the quality of the school in Madhagal is seen as a problem.

> *Anyone who can find a way to leave the village and find a school in the city would not hesitate to do that. Those who left the village because of the war or the tsunami never returned. So it is the most desperate and deprived individuals that are still left in the village and attending the village school. They cannot do much to help the school.*
> - Principal, Madhagal School -

For individuals who were displaced to IDP camps, there have been formal and informal arrangements for teaching and learning to take place. Informally, community members who have completed their O/Ls and/or A/Ls volunteered to teach younger children. In some cases these older students themselves were IDPs in the same camp. Formal support was provided by Government teachers who came into camps and taught students (Selvi, 40, Sinnathottam village). Additionally, the tuition classes offered by the Church at subsidiary fees and the free extra lessons offered by school was also helpful in this venture.

Community level support has been very instrumental in improving social capital of individuals which would eventually contribute to the improvement of social capital of the entire community.

Family support

As confirmed by previous researchers, the significance of family background and support for children's academic achievements is confirmed. In fact, family background and support seems the most instrumental in retaining children in school during and after war. The strength of the family seems to overpower all other forms of external support received by children to engage in education, even under conditions of war. Family was observed to be influential on children's academic achievements in broadly two ways.

Firstly, older siblings were seen sacrificing their educational opportunities to provide the same for their younger siblings. Older siblings dropping out of school to help improve family income was useful for the education of younger siblings. Revathy (44) assured that her daughters' educational expenses were solely borne by her sons who dropped out of school early to support the family income. In other families older siblings dropped out of school to babysit their younger siblings while parents were away at work.

Secondly, strength of relationships between family members was observed to be influential in determining children's academic achievements. Here, the most vital factor pertaining to family background was that the nuclear family was intact without any deaths caused by war or other factors such as the 2004 tsunami or disease. Children coming from families where both parents were alive and in relatively good health with some kind of a stable income seemed to do well in education compared to other families who have

lost family members. For example, Malar, 39 years, lives in an IDP camp with her husband and five children. Her first child is awaiting university entrance and her second child who has got through his O/Ls will be taking A/Ls in 2018. Remaining three children are attending leading schools in the area and Malar is confident that all three of them will get through their O/Ls without much difficulty. Malar's husband, educated up to Grade 10, is the president of their camp and therefore a respected member of the community. Even though Malar has only studied up to Grade 4, her commitment towards her children's education seemed very strong.

> *Life is tough for us. But I will provide anything that my children need for their education. My husband doesn't drink or smoke. There is no violence at home. We do everything to give our children a peaceful environment for studying at home. If there is money problem at home, I will get a loan and provide things necessary for my children's education.*
> - Malar, 39, IDP camp-

Research on parenting also has shown that parent's education is related to a warm, social climate in the home. Gottfried et al. (2004) found that both mothers' education and family income were important predictors of the physical environment and learning experiences in the home but that mothers' education alone was predictive of parental warmth.

Pavithra, a mother of 5, has a similar story to tell. She has a shop in the IDP camp and her husband engages in labour work. Except her eldest son, all her children are doing well in terms of educational achievements.

> *Only my first child dropped out of school without taking his O/Ls (tears in eyes). He himself gave up school and started working as a mason because he wanted to support the family economy. Second son will be completing his degree this year and the fourth daughter just started her BA. 3rd daughter got through all subjects at A/Ls but could not get university entrance. Youngest son will be taking his O/Ls this year. We don't have a TV. My children are not sent for tuition for O/Ls only for A/Ls. My husband doesn't drink or smoke.*
> - Pavithra, 49, IDP camp -

Three other women interviewed in the camp claimed that their husbands did not smoke or drink alcohol. The children in these families were successful in education compared to children in other families. The general view in the community was that if fathers smoke and/or drink it becomes a reason for domestic violence in the house which ultimately results in traumatized children who in turn would find it difficult to excel in their school work. These families also were comparatively financially well off either due to income generated by the family or NGO and other sources of support. In many of these families, children had completed other diplomas such as IT

courses, English courses and beauty culture courses in addition to school and/or university.

Saradha, a 23 year old University student, lives in an IDP camp with her mother and two siblings. She has lost her father at the age of six and her mother has looked after the family with her income as a seamstress. Her younger brother has got through his O/Ls but he has dropped out of school and started work as a three-wheel driver in order to help the family financially. According to the president of the Camp, Saradha's mother and other widows have received extra help from several NGOs and foreigners. The family receives Rs. 15000 from the church even now. Saradha's younger sister is studying for her A/Ls and is hopeful of getting through to the university. Saradha's house was unlike any house in the camp. It was very neat and well kept; a sign of a committed housewife and a supportive family. Though the researchers did not get an opportunity to meet the mother, the house and the family bonds seemed conducive towards academic achievement.

> *During the time when I did O/L and A/L, I used to sleep at 6 p.m. and wake up at 2 p.m. That was the only way to avoid the loud neighbourhood in the camp during the day. Mother provided everything we needed to study.*
> - Saradha, 23, IDP camp -

These findings confirm the strength of intimate family relationships in determining a person's social capital even under conditions of war (Coleman, 1988; Lakshman, 2018).

Conclusion

Thirty years of war in Sri Lanka has caused colossal damage to infrastructure and human life in the region studied creating various kinds of hindrances on children's education. Infrastructural damage resulted in temporary closure of schools and relocation of some schools causing physical barriers towards going to school. Displacement, loss of livelihoods and death of intimate family members disarrayed the social life in the region also creating educational difficulties for children. Even though the region recovered from infrastructural damages eventually the psychological trauma caused by the latter was a bigger challenge to overcome.

Financial aid from the Government, NGOs and INGOs was the commonest means that helped the people overcome difficulties of financial capital. However, the strongest and the most instrumental type of support has come from within the community and the family. The study confirms the strength of the family and other intimate relationships as the strongest source of social capital for educational support during and after times of war.

The need to strengthen the well-being of families by way of enhanced livelihoods and empowering women is recommended in order to strengthen

this social capital base. The need for stronger counselling support for children is also emphasized.

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ESJ Humanities

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Broadening Relevance: The Polemic Property of Concepts in Metaphorical Language

Abstract
The lexical pragmatic processes that relevance theory heavily relies on to account for communication are problematic. Broadening and narrowing no longer seem suitable to explain how "conceptual" meanings are modified in the comprehension processes if considering recent developments around the concept definitions and how the mind works. Using theoretical suggestions in psycholinguistics to shed light on the issue raised, the paper makes two main suggestions. Firstly, the account of concepts in relevance theory should be reconsidered to allow for more flexibility. An account of metaphors based on pragmatic adjustment of one of its constituents under the influence of another, as well as contextual assumption, does not seem a viable mental process involved in metaphor comprehension since it should not only allow flexibility of semantic associations but also a reconsideration of concepts as entities and encyclopaedical information as mere conceptual characteristics. Secondly, more cultural awareness and influence should be integrated into the relevance theoretical account of meaning since cultural traits are often considered by speakers in reaching relevance. Moreover, pre-existing conceptual knowledge varies greatly between individuals and thus the comprehension of metaphor should no longer be treated as a static process but rather a highly dynamic one.

Keywords: Relevance theory, metaphors, idioms, concepts, cultural assumptions, representations

1.　Introduction

The growing body of research in cognition and metaphor processing offers different approaches and views. Within a relevance-theoretic framework (Sperber and Wilson, 1995), a modular approach was set to replace Grice's thoughts about understanding figures of speech. For instance, the metaphor *My lawyer is a shark* is considered a clear violation of the maxim of quality (example discussed at length in Vega-Moreno, 2005; a similar example also discussed by Clark, 2013), and therefore the hearer is believed to take different routes of comprehension after realising that the attribute of shark to a lawyer need to be understood figuratively and not literally since such a model of comprehension would lead the hearer to nowhere. However, according to relevance theory, the processing is inferential and dependent on narrowing and broadening of concepts (Carston, 2015; Wilson and Carston, 2007; Wilson and Sperber, 2004).

Notwithstanding the rational of relevance theory to interpret figures of speech seems logical, some weaknesses need to be discussed with regards to metaphorical utterances comprehension. There seem to be key issues with formulated ad hoc concepts through lexical adjustments of constituents and the encyclopaedic assumptions that lead to their formulation. Discussing concepts and addressing them from different angles implies that lexical adjustments are flawed.

The paper aims to examine why and how concepts are used within the relevance-theoretic framework to account for metaphors and idioms and then to look at cultural elements which should be considered in determining meaning. Firstly, the paper provides a short overview of the "deflationary" view of metaphors in relevance theory (Sperber and Wilson, 2008), heavily based on a propositional view of communication. Secondly, the paper discusses such a rigidity looking at the issues caused by concept modulation process involved in metaphors and idioms. Thirdly, it considers cross-cultural comprehension, an area which should be addressed in a comprehensive theoretical model of communication. Fourthly, it addresses the rigidness of the metaphorical processing claims when trying to accommodate cultural variations of meaning.

The present study is a secondary research using existing theoretical frameworks of metaphors which provide a wealth of data to help with a broader understanding of the nature of metaphors. The paper looks at theories of figurative language from mainly psycholinguistics accounts which focus on mental processes in the production and comprehension of language. Additionally, the paper looks at mainly two theories (conceptual metaphor theory and relevance theory), which despite several opposing arguments, they also share similarities and both have greatly contributed to the ongoing debate on metaphors and idioms.　This paper is a theory-based discussion challenging

relevance theory accounts on the comprehension of figurative aspects of speech. The psycholinguistic theoretical accounts provide a solid ground for the discussion that appear in this paper with specific interest in the comprehension and the processing of idioms and metaphors within a relevance-theoretic framework of Carston, Wilson, Sperber, and Fodor writings mainly.

The merely cognitive aspects of the theory do not unveil how processing takes place under culturally biased contexts and the novelty of metaphoric utterances within culturally dependent contextual effects. This paper suggests that the principle of relevance should, arguably, be extended to include more than just the modulated aspects of concepts, if there are any as presented by relevance theorists. It also explores more routes of comprehension related to idioms and metaphors, in particular, which regard cross-cultural communication that uses different cultural assumptions with requisite lexical adjustments. This research does not suggest applicable alternatives but rather points to the fields that need to be carefully looked at and reconsidered when discussing figures of speech comprehension. More research is needed to further suggest an adjusted version of the relevance-theoretic account that can explain cognitive metaphorical aspects to be more rhetoric.

2.   The relevance theoretical account of metaphors and idioms

Building on the work of Grice (1975), relevance theory (Sperber and Wilson, 1995; Wilson and Sperber, 2004; Carston, 2002) can be commended for introducing the concept of "relevance" in communication, a property of inputs to cognitive process which allows us to represent information mentally and make inferences. In the relevance-theoretical framework, all communication results from people's search for and maximisation of relevance (Sperber and Wilson, 2002) to have enough related conclusions with the minimum mental effort to arrive at an accepted comprehension level. Thus, metaphor comprehension is based on the standard relevance-based inferential process of following the path of least effort in testing interpretation until expectation of relevance is satisfied.

While many other theoretical frameworks consider metaphors to be a special and distinct phenomenon (see Lakoff and Johnson, 1980; Bowdle and Gentner, 2005; Glucksberg and Keysar, 1990; Steen 2011), relevance theory stands out as a theoretical framework which offers an account where metaphor is considered similar to any other language type interpretations. The creators of the theory, Dan Sperber and Deirdre Wilson strongly argue that "there is no mechanism specific to metaphors, and no interesting generalization that applies only to them" (Sperber and Wilson, 2008, p.84). Just like many other instances of loose uses of language such as hyperbole, metaphor is placed on

a continuum with mundane non-figurative loose uses such as approximations and category extensions. Metaphor results from the processes that hearers use linguistic and contextual clues to change a concept from having obstinate characteristics to more compliant with the characteristics of other related/unrelated concepts to the ones verbally expressed. That process is known as pragmatical modulation and it results in ad-hoc (occasion-specific) concepts which contribute to the proposition explicitly communicated (the explicature in relevance theoretical terminology), as well as communicating a range of implicatures (assumptions communicated implicitly) (Carston, 2002; Vega-Moreno, 2007; Wilson and Carston, 2007; Wilson and Sperber, 2004). For example, people understand the metaphor (1) *My job is a jail* by automatically adjusting the lexical concept JAIL and creating an ad-hoc concept JAIL* through a relevance driven process that uncovers the speaker's informative intention. The assumptions in metaphorical understanding vary, making possible for different interpretations. Therefore, in relevance theory metaphor is simply a case of using the inferential mechanisms of concept adjustment, just like any other interpretations (Sperber and Wilson, 2008).

Also, relevance theory is grounded in a propositional and conceptual view of cognition which leads to the assumption that an utterance communicates a proposition, which is a mental representation in a conceptual format, and this expresses a thought. A direct implication is that relevance theory does not distinguish between the information the brain receives from perception, imagery and other cognitive processes. Compared to embodied approaches such as Conceptual Metaphor Theory (Lakoff and Johnson, 1980) where imagery is a mental representation, the relevance-theoretic fully propositional account does not allow for mental images to have special properties of their own. Moreover, the account distinguishes between two levels of propositional content: the explicature and implicature (Carston and Hall, 2012) and only recently proposed ways to integrate non-propositional (feelings, impressions, emotions) aspects, which can no longer be ignored when talking about figurative language. For example, even when using a conventional metaphor such as

(2) *Life is a roller-coaster*

or an idiomatic expression such as

(3) *He is as good as a one-legged man in a butt-kicking contest*,

it is almost impossible not to address the impressions that these expressions bring into the context and which might greatly contribute to comprehension. Golding (2015) points out that the propositional view of cognition presented by relevance theorists would benefit from incorporating an embodied view of the mind to include perceptual information such as mental imagery in the determination of speaker meaning. This research agrees and suggests an analogical reasoning process related to perception. Because a propositional

account such as relevance theory works with representations of logical relationships and propositions, the mechanisms involved in imagery and perception are great challenges in explaining metaphors.

Despite a very high number of studies which have addressed metaphor from several angles, the phenomenon is still perceived as a unique in communication studies (see the second-generation approach to cognitive studies). Relevance theory remains a significant theoretical perspective which has drawn attention to the importance of context in metaphorical studies. However, a thoughtfully detailed explanation of the contribution of contextual features on how metaphors are comprehended is still needed because of the close relationship of meaning to the context. Even a conventional metaphor such as example (1) also mentioned above

(1) *My job is a jail*

is highly context-sensitive, resulting in two different metaphorical meanings; it can either refer to being watched and lacking autonomy in a context when the previous discussion centres around the speaker's feeling of being continually monitored or it can refer to a prisoner's anticipated reactions to a fixed sentence, constraint, and punishment when the discussion centres around the speaker's need to continue working at an emotionally exhausting job to repay a loan (Ritchie, 2004, 2009). Moreover, relevance theory does not address the issue of cultural aspects. Sperber and Wilson briefly mention that some of the concept characteristics are culturally constrained, but they do not make any further reference. Figurative meanings are often culturally determined (Charteris-Black, 2002; Semino, 2008), but if the meaning is closely related to mental representations and content, how would the mental representations of ad-hoc concept formation work for multilingual speakers? (See Section 4 for more details).

Another much-needed discussion in relevance theory would be the conventionalised metaphors and idiomatic expressions such as (4) *face* and *hands of a clock* or the (5) *legs of a table* which no longer have the power to strike as specifically figurative, and hence not needing a concept adjustment process. But the issue transcends the concept modulation. Research conducted by Cameron and Deignan (2006) shows that it is not only the lexical form that shapes the conventionality of metaphors, but also the conventionalisation of attitudinal judgments such as feelings, emotions and cultural aspect attached to them. Therefore, even the inferential comprehension of conventional metaphors should be further clarified when using the relevance-theoretic account in addition to a more recent account proposed by Carston (2010) to address more creative metaphors since feelings and cultural practices may play an equal important role as concept modulation when people comprehend metaphorical language.

3.   Issues with the lexical pragmatic adjustment in relevance theory

Concepts present a problem for the relevance-theoretic framework, especially when trying to account for metaphorical language. As briefly mentioned in the previous section, the relevance theoretical framework is heavily based on the lexical pragmatics paradigm which means that the comprehension process results from the processes of concept adjustment (through narrowing and broadening) to reflect specific meaning intended by the speakers.

Concepts in relevance theory are seen as representations that follow the Fodorian atomic view (they cannot be broken into constituents). The adjustment process is inferential, and it includes narrowing (e.g. (6) *drink* to refer to a more specific sense, i.e. *alcoholic drink* than the lexically encoded-word of liquid) or broadening (e.g. (7) *a ton of work* used to communicate a more general sense of the word *ton*, or both at the same time (see Carston 2010, 2012), of the denotations of the encoded concept. The result is an ad-hoc concept created for specific instances which represents the base for the content of the utterance (its truth-conditional content). In opposition to the mapping account of metaphors presented by CMT, Sperber and Wilson's (2008) view places metaphorical comprehension in a continuum of cases ranging from literal expressions (e.g. legal texts) to category extensions, hyperboles and, at the more radical end of the spectrum, to metaphors. Yet, Carston (2010) points out that metaphors always require both narrowing and broadening of the lexically encoded concept. For example, in the metaphorical use of "*boiling*" in

(8) '*a creek is boiling over rocks*'

the ad-hoc concept *BOILING** results from the lexical concept BOILING being broadened and narrowed to remove the property of heat which defines BOILING. This phenomenon requires further explanation within the relevance theory framework because it challenges the continuity account of the relevance theoretic framework which places metaphor on a spectrum from a more literal meaning to language which is used more loosely such as metaphors, irony, hyperboles.

Furthermore, Sperber and Wilson's (2008) example

(9) *He is a magician*

clearly illustrates the formation of the occasion-specific concept, but at the same time, the utterance sheds some light on the perceived distinction between literal and metaphorical meaning. Sperber and Wilson claim that *magician* can mean literally someone who performs magic tricks to amuse an audience (MAGICIAN*) and metaphorically someone with supernatural powers who performs magic (MAGICIAN**). However, beyond the obvious distinction between the two meanings, some questions can still be asked about the two different senses. Can one meaning be more default than the other? If the

answer is positive, then what would be the best way to distinguish between them? Additionally, what is the mundane conventionalized metaphorical sense of the above-mentioned example, considering that calling somebody a magician figuratively is similar to the norm of praising others for their skills?

The first implication of lexical pragmatics on the relevance theoretical account of metaphors is that the theory's perspective on concepts is somehow paradoxical. On the one hand, relevance theorists aim to minimise or even not recognise the literal-figurative distinction, but on the other hand, it relies heavily on concept adjustment, which, in short, and as simply as it is presented here, is the modification of the literal meaning, a process which involves using a lexical entry that corresponds to a mental representation to give rise to a logical form in the inferential process. Inferred ad-hoc concepts such as MAGICIAN* to refer to a skilled person in

(10) *My chiropractor is a magician. You should go and see him* (example taken from Sperber and Wilson, 2008)
are often, if not always, the modification of the literal meaning. That is although Sperber and Wilson (2015) strongly argue that people are regularly non-literal and literalness is not regularly preserved in communication.

Their alternative model of figurative language to the Gricean theory of conversational implicature (Grice, 1975) seems better suited to explain many communicative aspects, but further clarification needs to be made for literal and non-literal meaning. Sperber and Wilson (2015) clearly state that, contrary to Grice, understanding does not presuppose an initial literal interpretation and its rejection. Grice argued that when understanding metaphors, people would first reject literal meaning and then replace with non-literal interpretation, which means that the literal meanings of utterances were always accessed first. Despite that, Sperber and Wilson (2008) also seem to ascribe a somehow controlling aspect of the literal meaning in the creation of ad-hoc concepts since they strongly claim that meaning is constructed through narrowing and broadening processes. Interestingly, they claim that broadening literalness is not preserved in instances such as

(11) *Holland is flat* and

(12) (On a picnic, pointing to a rock): *That's a table!*,
whereas in the narrowing process literalness can be preserved:

(13) *Peter: Does Gerard like eating? Marry: He's French.* (Sperber and Wilson, 2008).
But if literalness can act as a facilitator of meaning, that means it might have a greater role in communication than how relevance theorists present it. Also, is there a clear-cutting point between cases when it is and when it is not?

Meaning remains an important unresolved issue, especially in the debate of whether meaning constitutes a logical form. Relevance theory views literal meaning as an anchor with fixed characteristics which are used in

lexical modulation. In other words, the relevance-theoretic assumption is that concepts as representations in people's minds act as a central interpretative hub. Furthermore, Sperber and Wilson (2008) do not consider how the lexicalisation process may occur for ad-hoc concepts. According to the theory, generally, the meaning constructed spontaneously is to achieve a goal-relevant in a given situation and with more encounters, the occasion-specific meaning becomes lexicalised. But if contextual features are also considered, how would one distinguish between an occasion-specific and a lexicalised concept? Additionally, if an occasion-specific concept becomes so striking that it would be remembered easily or linger in mind, would it be considered lexicalised? It is also worth bringing up the issue of why the encyclopaedic knowledge would not be considered concepts. In other words, there might be a possibility of concepts within a broader concept. For example, in

(14) *He is a pig*,

encyclopaedical information such as *dirty* is itself a concept. However, this might be a more relevant debate for questioning the mind overall, and not for a review of relevance theory. Recent research has started to point to more flexible nature of what has been known as concepts, to the point where concepts are no longer recognised as per-se representations (Allot and Textor, 2012, 2017). This paper supports the relevance-theoretic idea that there is a modification process in mental representations based on contextual and environmental factors, however, the present research questions the modulation process, especially the idea that there are cases when representations are modulated and cases when they are not.

Despite some ample support from studies including experiments to the idea that understanding a word in a given context may involve the construction of ad-hoc concepts or occasion-specific meanings of words' uses (Barsalou, 1983, 1999; Franks, 1995; Sanford and Stuart, 2002; see also Recanati, 2002; Glucksberg and Keysar 2002), more recent studies not only argue for a less promiscuous type of concepts, but they also call for a redefinition of concepts. Carston (2010, 2016) seems to focus on semantic ambiguity and calls for a redefinition of the notion of concepts within relevance theory. This seems to be much needed within the relevance-theoretic framework since cases of polysemy challenge the atomist approach to lexically encoded meaning (see Carston, 2015 for polysemous roots). Carston's (2016) argument that metaphorical comprehension results from both broadening and narrowing, whilst the comprehension process of similies does not, challenges the relevance-theoretic continuity view. The main reason for this lies in the relevance theoretic main continuity view which stipulates that metaphor is interpreted in the same way as other types of figurative language. Yet, if the process between metaphors and similies is not the same, it means that there are differences in understanding between metaphors and other linguistic

meanings. It is not clear yet on Carston's or the relevance-theoretic account if other types of non-literal language require the same adjustments as metaphors.

However, an atomic view of concepts as presented in relevance theory does not seem to sustain the idea that the communicated content of a metaphorical expression is still recovered only via the encyclopaedic entries of the concepts. Carston (2012, 2013, 2016) seems to move away from this definition in favour of a more schematic representation that is more in line with Allott and Textor's account (2012) where ad-hoc concepts are presented as clusters of information that are reflected in their activation (c.f. Recanati, 2004). For example, the ad-hoc concept SAINT* in

(15) *Sam is a saint*

is created by the information which is activated, and not created. Adopting a more radical perspective, Casasanto and Lupyan (2015) argue that all information is context-dependent (the context is always specified, although not always explicit) which makes all concepts and word meanings constructed as ad-hoc, in response to cues in context. Similarly, Recanati (2004) sees word meanings as memory traces which are activated in encounters with the world, and Barsalou (2005) looks at concepts as incomplete patterns to be filled in various occasions.

To address a clear problem in relevance theory, Carston (2012, 2015, 2016) envisages a non-conceptual view within relevance theory where conceptual expressions "point" to something looser than a stable conceptual space, a "template" for the construction of a fully propositional conceptual structure (c.f. Pustejovsky, 1995). In this schematic meaning view, words activate bundles of senses/concepts (polysemy) which are both fully or partially associated with them. That view seems to share similarities to how concepts are presented by Conceptual Metaphor Theory. The relationship between metaphor and simile as accounted in relevance theory raises more questions about concepts. Whilst the ad-hoc account is used for metaphors, it does not apply to similes. The comprehension process for

(16) *My mother is like an angel* includes a pragmatic process of inferring implicatures concerning how mother may resemble an angel, and not creating an unlexicalized category such as an ad-hoc concept. Here, relevance theory claims that the lexically encoded concept is preserved.

As Romero and Soria (2010, 2014) point out, ad-hoc concepts may emerge from mapping process which leads to the suggestion that relevance theory needs to revise their lexical pragmatics account of metaphorical processing. They consider that the difference between the mapping and the ad-hoc account is given by how the ad-hoc concept is constructed. Considering Wilson and Carston's (2006) atomic concepts view, then the result is a wider denotation. This seems problematic because, in her recent work, Carston (2010) points to more flexible nature of concepts than the one presented in

relevance theory, a view which is not embraced by Romero and Soria (2014) who remain devoted to the conceptual domains. However, Wearing (2014) suggests analogical reasoning to help lexical processes, but only in category crossing and novel metaphors comprehension (where the resulting ad hoc concept is typically disjoint from the encoded concept – see the example above). She thinks that the analogical process is more effortful than the ad hoc creation and hence it relies on structural features obtained from both domains (i.e. in the metaphor's topic and vehicle). Nevertheless, the above suggestions are sought after to address the important shortcoming of the conceptual representations in the relevance-theoretical account of metaphors.

4.   Culture and meaning: beyond relevance

As explained in the previous section, the notion of concept in relevance theory does not seem viable to interpret words and utterances. According to Allott and Textor (2017), standing meanings, encyclopaedic assumptions, and eventually ad hoc concepts are not felicitous to draw a mentally (psychologically) represented picture of words or utterances. This is because, for instance, the word (17) *break* can denote many properties and not only one.

(18) *Break the glass*
(19) *Break the sentence*
(20) *Break the contract*

However, other utterances (such as: '*they have a lifestyle which is very San Francisco*', Wilson and Carston 2007, pp. 243) are said to be processed depending on 'general encyclopaedic knowledge' (Wilson and Carston 2007, pp. 243). By general encyclopaedic knowledge, Wilson and Carston (2007) refer to the social and the cultural knowledge hearers share.[1]

The role of context in relevance theory is indispensable. However, context according to relevance theory is dependent on the mental representation of assumptions that speakers produce for communication (Assimakopoulos, 2017). Context, here, seems to be restated by the assumptions speakers make. It is more cognitively reminiscent of what speakers think of the world. The implementation of context deviates from the social and the cultural traits, assuming that all speakers possess the same conceptualisation of the surrounding or share the same cultural assumptions. For instance, the example cited in Wilson and Carston paper (2007, pp. 243) '*the boy porched the newspaper*, *he did a napoleon for the camera, they have a lifestyle which is very San Francisco*' can be confusing to learners of English as a second or foreign language. First of all, not many learners would be able to recognise a porch of a house. It costs more cognitive efforts to process the

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[1] See the example of 'the boy porched the newspaper' (Wilson and Carston 2007: 13). As it is a culturally-dependent example that could be accessible to hearers sharing the same cultural traits.

word '*porch*' and create a concept of it that can be at risk of no felicitous context.[2]

There is a high risk of developing completely different encyclopaedic assumptions (forming a concept) that can lead to ambiguity, irrelevance, and a clear violation of the principle of cognitive effects and efforts.

Applying this flaw to figurative aspects of speech, particularly idioms, can reveal more evidence of this. Considering the example (21) *to make a pig of one's self* in a scenario that two speakers of English met for a dinner in a restaurant (one is a native speaker, Peter and the other person is a learner of English as a second language, Ahmed).

(22) *Peter: Ahmed's making a pig of himself!*
Ahmed stops eating, looks at Peter and says: what do you mean?
Taking into account the relevance-theoretical accounts, example (22) communicates relevant inferential routes encoded in Peter's description of Ahmed through the idiomatic expression *to make a pig of one's self*. That is, and if only, both the speaker and the hearer (in the case of example (22), Peter and Ahmed share similar cultural assumptions.[3] It can be imagined both a broadening and narrowing process of the concept pig into PIG*.

However, assuming a second scenario where Ahmed is on an English learning programme in London, but Peter is his flatmate who is originally from London. It is further confusing to image how broadening can take a place when two individuals from slightly different cultural orientations meet. Assuming that Ahmed is Algerian, where the utterance pig is very culturally inappropriate to be attributed to someone at whatever circumstances, lexical pragmatic adjustment can take a different turn from what the hearer intended to convey. The inferential assumptions drawn by Ahmed in (22) can lead to a break of communication. In other words, the communication is at the hazard of breaking down to an insult because there is no concept relatedness between what Peter intended and what Ahmed understood.

The following explanation details how example (22) can denote how relevant cognitive effects can be perceived under relevance satisfied or unsatisfied.

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[2] Assuming, by plausibility, that only houses in the western world have a porch.

[3] Cultural assumptions are also differently casted. Cultural assumptions of a family living in London could be different from other families living in the same area. This is manifested in the difference between macro and micro-cultural assumptions.

Text

Implicature

Adjustment   Within-cultural relevant inferences

Inference

Ad hoc concept

Relevance satisfied
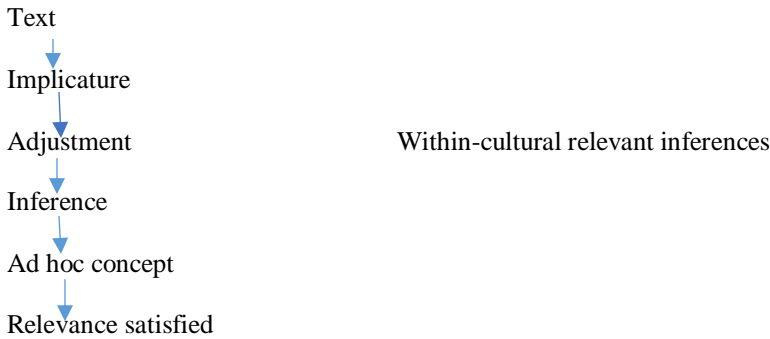
Figure 1: within-culture relevance processing

Text

Implicature

Adjustment   Between-cultural irrelevant inferences

Inference

Ad hoc concept

?

Relevance unsatisfied
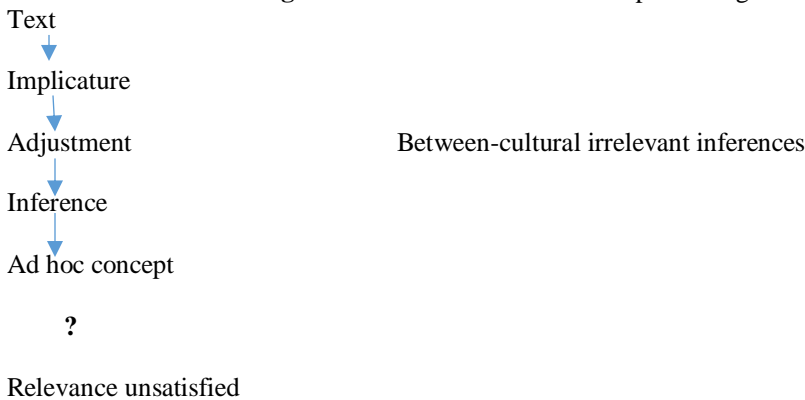
Figure 2: between-culture irrelevance processing

Example (22) highlights two situations, as explained earlier. Figure 1 shows the standard relevance-theoretic account of explaining figures of speech. According to Vega-Moreno (2007), the hearer in (22) would broaden the concept through pragmatic adjustments to enrich the concept of pig and guarantee the implication encoded by the speaker.

> The relevance theoretic view that …Every utterance, whether literally, loosely, hyperbolically or metaphorically intended, is processed using the same comprehension procedure, involving the same mutual adjustment process and guided by the more or less precise expectations of relevance (Vega-Moreno, 2007, pp. 124).

Relevance theory, however, does not provide a full theoretical account of how figurative aspects of speech (namely, idioms and metaphors) are processed with reference to cross-cultural communication. Considering figure 2, It can be seen how communication is interrupted at the level of ad hoc concepts inferred by Peter's attribute to Ahmed in (22). Because the inferential assumption derived from (22) is decoded accordingly to, merely, Ahmed's

cultural assumptions about the utterance pig, a misunderstanding could take a place and therefore break the communication with relevance unsatisfied.

4.1   Imperialist features of processing

According to Goatly (1994), social context factors need to be acknowledged in processing inferential principles to establish a meaningful conversation between the speaker and the hearer. However, this criticism can also be extended to include relevance theory claims on understanding metaphors and idioms.

Going back to the example that Wilson and Carston used (*the boy porched the newspaper*), it can be assumed that this example takes a uniculturalism route to understand its implicatures. Having said that, Vega-Moreno follows the same relevant theoretic account as she claims:

> In interpreting an utterance containing an unfamiliar idiom, as in interpreting any other utterance, the hearer takes the encoded conceptual representation as to the starting point for inference. Following a path of least effort, he adds associated encyclopaedic assumptions to the context in order of accessibility, taking a particular inferential route whose output should be the range of implications the speaker might have intended to convey (Vega-Moreno, 2007, pp.196).

The relevance-theoretic approach to idiom comprehension, here, is perspicuously presented to felicitously explain first language speakers of English comprehension of idioms following a Unitarian[4] approach to processing. How is example (22) understood according to the relevance-theoretic approach, assuming that Peter and Ahmed share completely different cultural assumptions about the word pig?

First, the novelty of figures to hearers is polemic. Accessibility, in this case, does not require least effort routes but rather encyclopaedic assumptions that are negotiated with the speaker (in the case of example 22, Ahmed stops eating, looks at Peter and says: what do you mean?). Second, there are two scenarios where the path of the least effort can be recognisably efficient, from our standpoints, one within familiar figurative aspects of speech and second with shared cultural schemas, which relevance theory implicitly addresses through relevance-theoretic accounts of comprehension.

Furthermore, Gibbs and Colston (2012) avow that different factors underline how figurative aspects of speech are understood where culture is an eminently distinguished factor. (23) *More hideous than a pig* is an Arabic

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[4] An approach that considers only native speakers' cultural presuppositions in explaining metaphorical utterances comprehension.

proverb which means that someone looks uglier than a pig. The concept of a *PIG** in this example is very different from the one implied in (22). When different concepts are derived by speakers (Peter and Ahmed) who share ultimately different cultural traits, adjustments take different paths of what is usually intended by the speaker. Consequently, concepts developed also deviate from the contextual effects provided in the conversation ending at a break or a gap of communication with relevance unsatisfied.

Another example of metaphor, *the body is a container for the emotion*, is conceptualised differently according to Gibbs and Colston (2012). The embodiment of emotions in the body is perceived differently by various nationalities. How are concepts and adjustments formed when studying idioms and metaphors considering cross-cultural communication? Relevance theoretic account needs to consider culture as an efficient factor of interpretation or at least a factor that pushes the comprehension process to take certain different routes of what could be usually the case.

Therefore, there are some imperialist features of processing that seem to explore how 'John' and 'Peter' process figurative aspects of speech but not others who might share different cultural assumptions. The discussion and the exemplification of the theory are all biased toward western, English-speaking countries assumptions but arguing that the theory is universal. More recognition is needed to reflect upon other second and foreign English speakers' cultural assumptions in the theory and allow more variety (see Bouherar, 2017 & Bouherar 2020a on how home cultures can be linked to idiom processing with a relevant theoretic account support).

5.   Alternatives for metaphorical comprehension

Although there are other approaches to metaphorical figures processing which offer interesting explanations of the metaphorical phenomena, it would be almost impossible to combine their cognitive processing of metaphors, or even integrate elements into the relevance theoretic framework. For example, the conceptual metaphor theory, the direct access view, graded salience view, underspecification view (Gibbs and Colston, 2012) are alternative approaches to understand figurative aspects of speech. However, since this article explores aspects of relevance-theoretic accounts to understand metaphorical expressions, a requisite discussion of the pragmatic effects shaped by different cultural assumptions is needed.

Different referential processings happen at the level of cognitive comprehension of metaphorical expressions to satisfy the pragmatic effects intended by the speaker. Ultimately, this could not be possible regarding cross-cultural communication between two or more individuals. More cognitive efforts are processed at the expense of a few cognitive effects, considering that speakers' cultural backgrounds are different.

Considering the following example (24), it can be highlighted that the inadequacies caused by cultural assumptions which can jeopardise the conversation flow and ambiguate relevance.

(24) *Paul: can't wait until the 5ᵗʰ of November, after all last year fireworks were amazing. I wish I'll have similar atmosphere this year, old flames die hard!*

Ahmed: it would be great if you tell me what is happening on the 5ᵗʰ of November first!

Assuming that Paul lives in England, in (24) he is referring to Gay Fawkes' annual commemoration which takes a place on the 5ᵗʰ of November each year. Keeping the same scenario of example (22), Ahmed is an English student. In (24), the hearer (in this case, Ahmed) builds loads of inferential assumptions to decode Paul's utterance. However, if you notice, two vague expressions need Ahmed's intention and cognitive efforts: one is the event of 5ᵗʰ November and the second is the metaphorical expression of *old flames die hard*. There is a high risk that the conversation in (24) will not follow the least efforts path as claimed by Vega-Moreno (2007). Recognising the nature of the event can give the hearer access to the strings of the idiomatic expression's assumptions. The hearer cannot jump the line and process the second sentence of Paul, but rather he has to go through the first and then the second sentence due to the relative inferential routes that can result in decoding the second sentence.

Now, Ahmed seems to be in a position of familiarity with cultural assumptions and Paul in a position of unfamiliarity with Ahmed's communicated assumptions, assuming that Paul heard the idiomatic string for the first time and he is trying to search for relevance and possible inferential routes that give him access to the meaning.

(25) *Ahmed: last year's Ramadan was exceptional, old flames die hard!*

Paul: what is Ramadan?

Paul's question about Ramadan implies that he processed many inferential routes that, possibly, led him to nowhere as he ended up asking Ahmed about Ramadan. It can be argued also that Paul holds certain encyclopaedic assumptions and he is waiting to confirm or reject them, at least some of them. Without going further into the overall meaning of Ahmed's utterance, Paul's expectation of relevance was obstructed by the unfamiliarity of cultural assumptions of Ramadan. In order, the cognitive effects of Ramadan should be provided for Paul to proceed with the meaning of the idiomatic expression.

Relevance theorists' efforts to explain the comprehension of figures of speech, particularly idioms and metaphors, need to be less rigid in the way it addresses mechanisms of understanding metaphorical utterances. Reading that hearers go through broadening and narrowing, least effort path, or expectation of relevance implies that both the speaker and the interlocutor are assumed to share similar cultural traits while they just need to adjust the language spoken through different apparatuses.

Moreover, the propositional analysis of examples used to explain aspects of relevance theory denote a sign of exclusivity of other cultures that uses English as a second language. For example, the use of the verb 'porch' in *the boy porched the newspaper* implies that this example is exclusive to native speakers of English.

Although the comprehensive attribute to the principle of relevance seems adequate, there could be no broadening or narrowing when processing metaphorical utterances unless both the speaker and the hearer share at least similar cultural assumptions. Within the frame of relevance-theoretic accounts, it is plain that native speakers' cultural assumptions played an evident role in explaining the sides of the theory in metaphor comprehension. However, considering the example (26) where both the speaker and the hearer share similar cultural backgrounds, the principle of relevance can be established, but inclusively compared to an exclusive manner that targets only native speakers.

> (26) *Mohamed: I can't forget those moments when we used to stay up late till morning on Ramadan nights, oh yeah! Old flames die hard* (Bouherar, 2019, p. 297).
> *Ali: yeah, how can I forget that!*

Ali inferential assumptions are directed toward the idiom *old flames die hard* and not Ramadan. More importantly, the utterance of Ramadan can give extra encyclopaedic assumptions to help Ali access the meaning of *old flames die hard*.

Even within-culture relevance, there are micro cultural assumptions (Bouherar, 2019). A person who lives in the east of Algeria for example shares slightly different cultural assumptions with another one who lives in the west of Algeria. Example (26) shows a macro-cultural assumption that is, arguably, known to the Muslim community. It is, however, about the practices of Ramadan that can vary from one place to another.

It is of a blatant claim to assert that culture can explain the relevance-theoretic account of metaphors compression, but rather it can unveil the idiosyncratic culture implicitly framed in relevance-theoretic routes of processing figures. Turning to culture in relevance theory with reference to figures, it has to be an inclusive term after all. It is, arguably, suggested that

relevance theory can be extended to include, explicitly, discussions and explanations about the role of cultures (Bouherar, 2019, see also Bouherar 2020a) in metaphorical utterances comprehension with further empirical work.

Conclusion

In conclusion, this paper presented some flaws of relevance theoretic accounts of metaphorical comprehension. A review of the terminology used in explaining metaphors and idioms within the account is much needed. Concepts, for instance, are to be an attribute of what can be possibly constructed and extended in mind and not strictly linked to the truth-conditional of the utterance speakers make. A more extended concern of narrowing and broadening features of concepts within metaphorical utterances should also be looked at with the lens of an appraisal. The inextricable relationship between concepts and the lexical adjustment of narrowing and broadening processes results in narrowing and broadening dependent on the definition of concept which does not offer much flexibility especially for non-propositional elements, but, most importantly, is no longer a viable explanation of meaning in general. Even if the lexical adjustment processes might characterise meaning, this paper argues that the origin might not be a static concept as in relevance theory and these changes might not apply in some instances of communication for second language speakers. In other words, the article has pointed out that lexical adjustment, if the case, might be possible only in some cases where both the speaker and the hearer share similar cultural assumptions.

The relevance theoretic account did not provide details on how metaphorical utterances are understood under the use of cultural presuppositions. This paper distinguished between within-cultural relevance comprehension of figures of speech and between-cultural irrelevance comprehension, stating that relevance seems to be disrupted more in between-cultural irrelevance inferences. Additionally, this paper suggests, but does not provide alternatives, that relevance-theoretic account to explain metaphorical utterances, arguably, needs to broaden the aspects of relevance in comprehension. More research is needed to pave the road toward this proposal as this article just pointed to the fields of possible enrichment.

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ESJ Humanities

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Performance of Decentralized Local Service Delivery in Developed Countries: Case Study of Japan

Abstract
Many countries decentralize the administrative, fiscal, and political functions of the central government to lower-level governments. In many developing and developed countries, governments and their policymakers have used decentralization as a means of improving the delivery of local service. Accordingly, this study is based on the delivery of local services to the people by the local governments of Japan as a developed country. The overall objective of this article is to review the performance of decentralized local service delivery in developed countries and based on a case study of Japan. The study also aims to examine the correlation between the revenue and expenditure of local governments of Japan and its trends. Basically, this article has been written based on secondary data materials. This data consists of qualitative and quantitative characteristics. Hence, a qualitative and quantitative descriptive method has been applied to analyse the performance of local government decentralization in Japan, and descriptive statistical methods are used to analyse the data and the correlation between revenue and expenditure. The problem in this research is how the functional political institutions created for local service delivery at the sub-national governments in Japan affects the success of decentralization. This research revealed several findings. The local governments of Japan have a sound institutional system and several powers recognized by the constitution. Japanese local governments monitor over 70% of national works, but a majority of the standard public services are the responsibility of local governments. Karl Pearson's correlation

value of revenue and expenditure is 0.979, and there is a strong positive relationship between revenues and expenditure. In Japan, the highest value of local government spending is on public welfare. It is followed by education, civil engineering works, and general administration, second, third, and fourth, respectively. Also, its central and local administrative institutions are maintained in a mutually dependent and mutually complementary relationship. Most of the local governments are collaborating with the private sector in Japan. As a result, the efficiency of service delivery has improved at the local level. In this way, waste management, which is a major local problem in Japan, is being dealt with closely by the central government and the local governments.

Keywords: Decentralization, Service Delivery, Local Autonomy and Developed Countries

Introduction

Japan consists of the main islands of Hokkaido, Honshu, Shikoku, Kyushu, and Okinawa, and over 6,800 smaller islands of various sizes. Its surface area totals approximately 378,000 square kilometres (Statistical Handbook of Japan, 2019, p. 2). Japan is a unitary state with a constitution that defines the basic organizational structure of governments and the role of authorities. Japanese constitution came into being after World War II. The article 92 and 93 of chapter 8 has guaranteed local autonomy. According to constitutional law, Japan's local government system consists of two levels. The country is divided into 47 prefectures, which are then divided into smaller, and more fundamental local bodies, such as cities, towns, and villages. The major components of the three local government bodies in Japan are as follows: First, local governments play a vital role in the Japanese economy, and the local government expenditure accounts for a fair share of the GDP. Secondly, the local government system is unified throughout Japan, and third, the role of local governments overlaps with the central government and perhaps shows ambiguous aspects concerning their territory (Yagi, 2004, p. 5). Japan is the tenth-largest population in the World, which is 127 million. The Japanese make up 98.5% of the total population of Japan. The country has a broad industrial capacity and most extensive and most technologically advanced products of the motor vehicles, electronics, machine tools, steel and nonferrous, ships, chemicals, cloth, and processed foods the largest and highest technology products. This development in Japan is due to its political and administrative functional mechanism. Japan has had a long history of local governments and the collapse of the Edo-Shogunate since 1868, the subsequent development of Meiji restoration and the evolution of local government with the 1999 comprehensive decentralization act (Uddin, 2013, p. 937). The local government system in Japan has facilitated a broad-based development of the country. It has been a useful tool for achieving national goals. On the other hand, local governments play a significant role as a vehicle for solving most of the local level problems in Japan (Iqbal, 2001, p. 1). Japan,

as a developed country in Asia, has given a vital role for local government in the functional political body of the country.

Comparisons have been made with sub-national governments in other developed countries to understand the situation of sub-national governments in Japan. According to Chart 1, data from several developed countries show that sub-national governments' revenues and GDP are doing well. In terms of sub-national revenue and GDP of most developed countries, as per Chart 1, Germany ranks first, Korea second, and Japan third.

Chart 2 shows the expenditure and GDP status of sub-national governments in selected developed countries. Accordingly, Sweden is in the first place by GDP and expenditure. Korea is in third place in terms of GDP, and it is in second place in terms of expenditure. Also, Japan ranks second in terms of GDP, and third in terms of expenditure.

Chart: 1, Sub-national Government Revenue in Selected Developed Countries (US$ %)
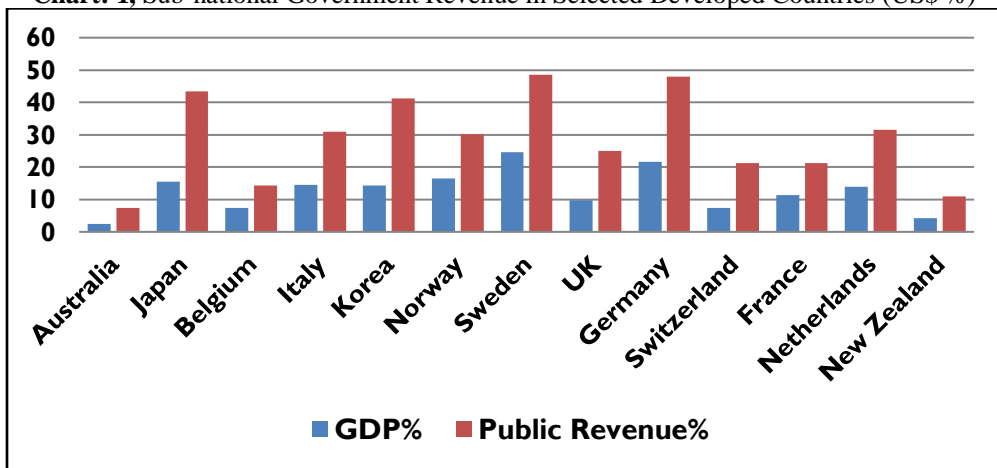
Source:(OECD, 2018)

The rest of this article is organized under several sub-sections as follows: The second section of the report presents the research objectives and methodology with ethnographic and sociological information on Japan. Section three contains a brief literature review based on theoretical and practical evidence, whereas section four covers the descriptive and rational explanation of the government service delivery's sub-national level based on the composition and role of the local governments with the research findings. The final section presents the conclusion.

Chart: 2, Sub-national Government Expenditure in Selected Developed Countries (US$ %)
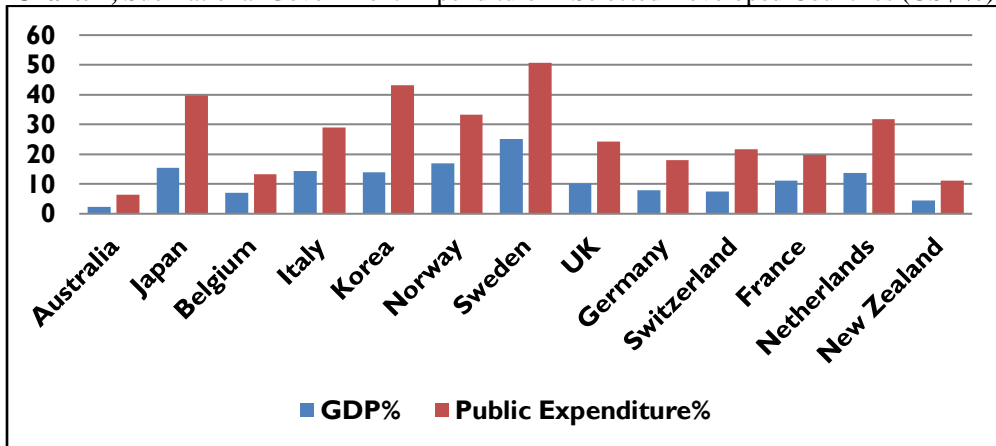
Source: (OECD, 2018)

Research Objectives

The overall objective of this article is to review the performance of decentralized local service delivery in developed countries, based on a case study of Japan. It also focuses on assessing the importance of the formal mechanism for local governments to provide services and the extent to which the people are involved in their decision-making processes at the local level. Besides, essential issues to consider are identifying the impact of local governments on financial governance and service delivery. In this regard, the article examines the correlation between the revenue and expenditure of local government institutions in Japan.

Research Methodology

It is particularly important to examine the performance of decentralized local service delivery in developed countries. In this context, this research is focused on the case study of Japan. On the other hand, it can get the same experience for mechanisms in countries with other decentralization systems. This research paper is written based on secondary data materials. These secondary sources of data consist of published and unpublished sources, including case studies, government statistics reports (Statistical Handbooks and Statistical Yearbooks of Japan), books, journal articles, research reports, working paper, the internet browsing sources, and OECD country reports. The data involves qualitative and quantitative characteristics. Hence, a qualitative and quantitative descriptive method has been applied to analyse the performance of local government decentralization in Japan. Accordingly, descriptive statistical methods helped to analyse the data. The correlation between revenue and expenditure, in particular, was tested by SPSS software and Excel.

Literature Review on Concept of Decentralization

The literal meaning of the word 'decentralization' in the Latin roots is "away from the centre" (Meenakshisundaram, 1994). There is no single definition of decentralization, but Rondinelli provided a clear description of decentralization as follows: "Decentralisation is defined here as the transfer or delegation of legal and political authority to plan, make decisions, and manage public functions from the central government and its agencies to field organizations of those agencies, subordinate units of government, semi-autonomous public corporations, area-wide or regional development authorities, functional authorities, autonomous local governments, or non-governmental organizations"(Rondinelli, 1981, p. 137). This definition further explains the centre-periphery relations in the state. According to these definitions, various scholars of public administration have defined decentralization as the transference of authority from a higher level of government to a lower level (Herath, 2009, p. 159). Various scholars have defined the concept of decentralization as a transfer of power from a higher level of government to lower level institutions. Accordingly, transferring decision-making power to the delegation, delegating authority power with responsibility, allowing the people to take necessary actions from their placement, distributing tasks from the centre to the periphery, plan formulation, and implementation them with the participation of the people (Hossain, 2005, p. 2).

Many scholars, including the World Bank, point out different types of decentralization. It is useful to understand the theory and practice of this concept, but the concept of decentralization overlaps considerably. Political, administrative, fiscal, and market and asymmetric decentralization can appear in many forms and combinations of countries, countries, and even sectors (Rondinelli, 1999). However, there is no common belief among scholars about decentralization forms. According to Meenakshisundaram, deconcentration, devolution, delegation, privatization, and deregulation are in this way (Meenakshisundaram, 1994, p. 11). Dennis A. Rondinelli and G. Shabbir Cheema have identified four primary forms of decentralization as deconcentration, delegation to semi-autonomous or parastatal agencies, devolution to local governments, and transfer of functions from the public to non-governmental institutions (Cheema & Rondinelli, 1983, p. 18). Edward Mugabi showed that decentralization could be divided into four types. This includes deconcentration, devolution, delegation, and divestment/privatization (Mugabi, 2005, p. 24). This proves the different views about the forms of decentralization.

Various scholars who have discussed the concept of decentralization categorize it into two waves, called as the *first wave of decentralization* and the *second wave of decentralization*. The first wave of decentralization or the

first generation of decentralization is based on the period from the late 1960s to the mid-1970s in many parts of the Asian and African regions (S. Chowdhury, 2017, p. 116). However, as Olsen points out, the first-generation decentralization failed due to several reasons. These include lack of people participation, lack of local administrative performance and capacity, and the distribution of power, wealth, and status has not changed. However, by the beginning of the 1990s, many developing countries were using the second wave or second-generation decentralization. The second generation of decentralization moved from reform to restructuring to shift the decision-making process from the centre to the periphery (Olsen, 2007, pp. 2-3). They pointed out that the second wave, or second-generation decentralization, can be observed in four categories, as political, administrative, fiscal, and market decentralization (S. Chowdhury, 2017, p. 117).

Many governments in the world use decentralization under different layers for various political, administrative, and economic purposes. Cheema and Rondinelli (1983, pp. 14-16) produced the best summary of those purposes: "Increase people's participation in local development, planning, and management, coordinate administrative functions, political and administrative "penetration", creating social equity, more effective coordination, allowing local "experiments", lead to more flexible, innovative and creative administration, isolated or backward areas of development, integration of regional economies, macroeconomic stability, improve political stability, decentralizing public goods and services, participation planning, monitoring, and evaluation, delivery of goods and services, local-level financial management and administrative efficiency, so on" (Mudalige, 2019, p. 120). In addition, Olsen (2007, p. 3) pointed out that the second wave, or second-generation decentralization reform, is aimed at state reform (state modernization), local governance, local democracy, and regional economic development. Thus, the countries in the world aim to solve many complex social, economic, and political issues related to governance through decentralization reforms.

According to Piccone, 2.28 billion people lived in democratic countries in 1989, which increased to 4.18 billion by 2014. The democratization of countries also leads to more decentralization. In 1989, there were 69 democratic countries, which rose to 125 by 2014 (Piccone, 2016, p. 2). Further, some countries have implemented decentralization systems for improving the governance mechanism within the state. Different types of decentralization methods are identified according to Table 1, as the political, administrative, fiscal, market, and asymmetrical decentralization. These decentralization methods have appeared in various countries and used as many combinations (Islam & Fujita, 2012, p. 5). Also, as mentioned above, it is vital to have an overview of the five types of decentralization.

Table: 1, Various Types of Decentralization

Forms and Dimensions	Privatisation	Delegation	Deconcentration	Devolution
Market/Economic				
Administrative				
Political				
Fiscal				
Asymmetric				

Sources: Steiner (2005, p. 10), Muriu (2013, p. 7), and Hossain (2005, p. 6)

Political Decentralization: The purpose of political decentralization is to empower citizens or their elected representatives to make public decisions at the sub-national level in the central government. John Mary Kauzya has given a more explicit definition for understanding political decentralization: Political Decentralization is "transferring the power of selecting political leadership and representatives from central governments to local governments, and transferring the power and authority for making socio-politico-economic decisions from central governments to local governments and communities" (Kauzya, 2007, p. 76). Thus, political decentralization means delegating authority to the sub-national body by the central government. Political decentralization can be identified as the most popular and most democratic system of decentralization. The method of devolution of power is carried out under political decentralization.

Administrative Decentralization: In general terms, the process of transferring central government structures and bureaucrats to the local level involves administrative decentralization. As defined by Rondinelli, "Administrative decentralization seeks to redistribute authority, responsibility, and financial resources for providing public services among different levels of government" (Rondinelli, 1999, p. 2). Administrative decentralization aims to redistribute authority, responsibility, and funds among different levels of government services. Administrative decentralization is often associated with civil service reform in a country. Similarly, decentralization models such as deconcentration and delegation are implemented under administrative decentralization.

Fiscal Decentralization: As per Work's definition, "Fiscal decentralisation means the reallocation of resources to the sub-national levels in a government." Arrangements on the resource allocation are often negotiated between the central and local government authorities based on various factors including interregional equity, availability of resources at all levels of government, and local fiscal management capacity (Work, 2002, p. 6). Sub-national governments have now become key actors of public goods and services to citizens of countries around the world. Therefore, it is

increasingly important to know the impact of fiscal decentralization on the economy, society, and politics. A wide range of socio-economic issues includes growth and development, poverty reduction and achieving the Millennium Development Goals (MDG), enhancing public sector efficiency and governance, or greater macroeconomic stability and fiscal sustainability (Vazquez, Peñas, & Sacchi, 2015, p. 1). Under fiscal decentralization, the emphasis is on strengthening sub-national finance capacity. This means that it is essential to give sub-national governments some revenue authority and a spending responsibility. Therefore, these sub-national institutions can determine the level and structure of their budget.

Economic or Market Decentralization: The processes of privatization and deregulation introduced through market decentralization are determined by the nature of economic liberalization and market development policies in countries. In a country, under economic decentralization, the responsibility shifts from the public to the private sector. Economic or market decentralization means transfer over the functions of the government to the private sector. It shows through privatization and deregulation. This kind of decentralization promotes the engagement of businesses, community groups, co-operatives, private volunteer associations, and other non-government organizations (Hossain, 2005, p. 5). In practice, the privatization of state enterprises and the deregulation of markets are relevant to economic or market decentralization.

Asymmetrical Decentralization: The creation of asymmetric decentralization begins when governments of the same sub-national level have different political, administrative, or fiscal powers (OECD, 2019, p. 20). Ronald L. Watts points out that asymmetric decentralization can be categorized into two methods: The first one of political asymmetry is seen as arising "from the impact of cultural, economic, social, and political conditions affecting the relative power, influences, and relations of different regional units." The second one is an asymmetry, which he labels as constitutional asymmetry, "relates specifically, to the degree to which power assigned to regional units, by the constitution of the federation are not uniform" (Amarasinghe, 2011, p. 145). In general, asymmetric decentralization of unitary states is more likely to occur in practice (Utomo, 2009, p. 19). However, asymmetric decentralization has become more common in the unitary and federal states.

Literature Review on Practices of Decentralization

This discussion focuses on the practical application of decentralization in countries based on local service delivery. Iritani and Tamaoka (2005) have discussed the Japanese fiscal structure between central and local governments. This study was based on the Japanese fiscal structure. It aims to evaluate the

inter-fiscal compatibility of the post-war period. This study revealed that problems are present in the entire financial redistribution system between the central and local authorities, which need to be regulated. Ikawa (2008) discussed Japan's fifteen-year decentralization reform. The study highlights the importance of training human resources in the long term of financial management.

Conversely, it is necessary to understand the local citizens to promote decentralization. At the same time, it is essential to involve citizens in the decision-making process of provincial governments. Moreover, the autonomy of the local government finance sector has not been satisfactorily achieved. Kimura (2015) studied the structure of the Japanese local revenue and the framework of the Japanese local tax system and emphasised that local preferences should be allowed to be sensitive when determining the tax rate and basis. Also, local authorities must be more sensitive to the needs of the community within the framework of financial autonomy. Shirai (2004) has studied the local allocation tax concerning local governments in Japan and investigated whether the income gap between prefectures decreased between 1980-2001. Also, this study reviewed the conditions of developing countries and their intergovernmental transfer system. Furthermore, Shirai pointed out that Japanese experience shows a need for careful planning of an intergovernmental transfer system so that it does not pose a moral hazard to the economically poor.

It is also necessary to promote private sector economic activity and regional economic growth. S. Chowdhury (2017) evaluated the process of participatory planning and participatory budgeting through local governments in Bangladesh. The findings revealed the importance of increasing people's participation, increase trust in elected representatives, change patterns of service delivery, and improve the validity of transferring funds directly to local governments. However, local resources constraints and local political interference have negatively impacted the performance of local governments. Thießen (2003) analysed his study of fiscal decentralization from an economic growth perspective. This has been used in per capita economic growth, capital formation, and overall factor productivity growth in high-income OECD countries. This analysis focuses on cross-sectional regressions based on the average of the annual time series data as 1973-98. The researcher found no significant difference in long-run investment performance among countries with low or high fiscal decentralization. Also, countries with low fiscal decentralization tend to have it increased, while countries with higher fiscal decentralization tend to have it decreased. Lin and Liu (2000) investigated the impact of fiscal decentralization on China's economic growth, widely using the empirical literature in this study.

A production-function-based regression analysis framework has been used for this research. The researcher used provincial-level panel data set from the 1970s to 1993. The findings of this research show that fiscal decentralization has positively contributed to economic growth. Bessho (2006) conducted a case study on the financial performance of Japan's central government and local governments. The purpose of this paper is to provide a preliminary analysis of the local public administration and functioning of the financial system of local governments, and, besides, it aims to analyse the financial balance in the aftermath of a fiscal shock in Japan. Based on quantitative data, the VECM approach has been employed for data analysis in this research. The study reveals that local governments can cover a 40% increase in their own source of income through a reduction in grants. Kimura (2017) examined the Japanese local revenue tax and its financial autonomy goals. The author points out several problems with the Japanese local tax system. They are to reduce the disparity in the local tax system, enrich the financial autonomy, and stabilize tax revenues. Also, he noted that the local governments should be more sensitive to the community needs within the framework of financial autonomy.

Davoodi and Zou (1988) investigated the relationship between fiscal decentralization and economic growth. In this research, a panel dataset of 46 countries was used for the period 1970-1989. The research findings indicate a negative relationship between fiscal decentralization and economic growth in developing countries. Woller and Phillips (1998) have presented an empirical investigation of the relationship between fiscal decentralization levels and economic growth rates based on across a sample of 23 less developed countries for the years 1974 through 1991. It agreed with Davoodi and Zou's view and disclosed a weak inverse relationship between economic growth rates and level of fiscal decentralization. Barrett (2000) has discussed the steps to promote decentralization in Japan and its results. The study points out the challenges to overcome many political, social, institutional, administrative, and financial obstacles to implement decentralization in Japan successfully.

Japan's local authorities do not have greater financial independence. As a result, localisation is no longer implemented as a target. Szabo (2017) examined the empirical relationship between fiscal decentralization and economic growth. It can be noted that he has used the research for an in-depth analysis of the independent and control variables used in the regression. He analysed over 30 variables that can be used in fiscal decentralization and over 60 control variables with an impact on economic growth. This study provides a significant literature background for qualitative data analysis.

Rahim and Shirazi (2018) have investigated citizens' satisfaction with the delivery of government services through local government in Pakistan. In this study, multiple-choice models have been used to identify citizen

satisfaction with service delivery. This research disclosed the devolution policy variables are statistically significant. The demographic and socioeconomic variables have also become important. It is revealed that devolution is heading in the right direction when it comes to reducing income disparities. Zhao (2009) has examined Chinese state-level fiscal disparities using financial and economic data for the period 1978 to 2016 and realised that some of China's primary education, public health, and welfare services had not been provided with decentralization, and fiscal disparities compound these problems.

Lewis, Mcculloch, and Sacks (2016) have investigated the measurement of service delivery of provincial governments in Indonesia. The study highlighted the importance of considering the reliability and validity of the indicators used. This study also provides some important indicators of education and health. The literature review demonstrated that in many countries of the world, the responsibilities of governance had been placed on the periphery. It has been implemented under the local government layer system. The introduction of local government layers is intended to make services at the local level more efficient.

Local Governments of Japan

The Japanese government system consists of three layers as the central government, prefectural governments, and municipal governments. There are 47 prefectural governments as the second layer. They are consisted of "to" (Tokyo), "do" (Hokkai), "fu" (Osaka and Kyoto), and 43 "ken." The prefectures of "Do," "Fu" and "Ken" are assigned the same functions. However, for special reasons, "to" has been assigned special functions. Tokyo is the capital city of Japan, with a large population in a small area-hence, Tokyo has been given a special status. The third layer is divided into Cities ("Shi"), Special wards ("Ku"), Towns ("Machi" or "Cho"), and Villages ("Son" or "Mura") (see figure 1). They operate from urban, rural, and regional institutions (Bessho, 2006, p. 5);(Yagi, 2004, p. 8). However, as of 1 January 2019, Japan has 47 prefectures and 1,718 municipalities Japan (CLAIR, 2019b, p. 7; Statistical Handbook of Japan, 2019, p. 194). Scholars commenting on the local government have recognized that the "local government is an umbrella term." In particular, considering this idea, a local government can mean country, a municipality, a city, a town, a township, a local public authority, a school district, a regional or interstate government entitles, or any agency or instrumentality of a local government (European Commission, 2007, p. 19). Thus, it is correct to recognize the prefectural government and municipalities of Japan as local governments.

The governor of a prefecture or the mayor of a municipality is the most influential chief executive of the local government in Japan. These top

executive representatives represent the local government and are directly elected by the people, and the term of office of the elected executive representatives is four years. These executive representatives are empowered to ensure the overall compliance of all government operations. In addition to that, they have the power to act as government representatives to the outside world. The executives have the authority to enact necessary regulations, make budgets, propose bills, and appoint or dismiss staff members. In addition to the governors and mayors in local governments, deputy governors or deputy mayors have been appointed to carry out their duties (Michihiro, 2010, pp. 11-12). The organizational structure of the prefectures and municipalities are shown in the Annexe, in 1 and 2, respectively. The executive bodies of local governments in Japan include boards of education, electoral administration commissions, personnel commissions, as well as prefectural governors or municipal mayors. The deputy Governors and deputy Mayors are appointed by the governors and mayors of local Governments with the consent of the legislative assemblies (Sasaki, 2014).

Figure: 1; Japanese Government Institutions by Level
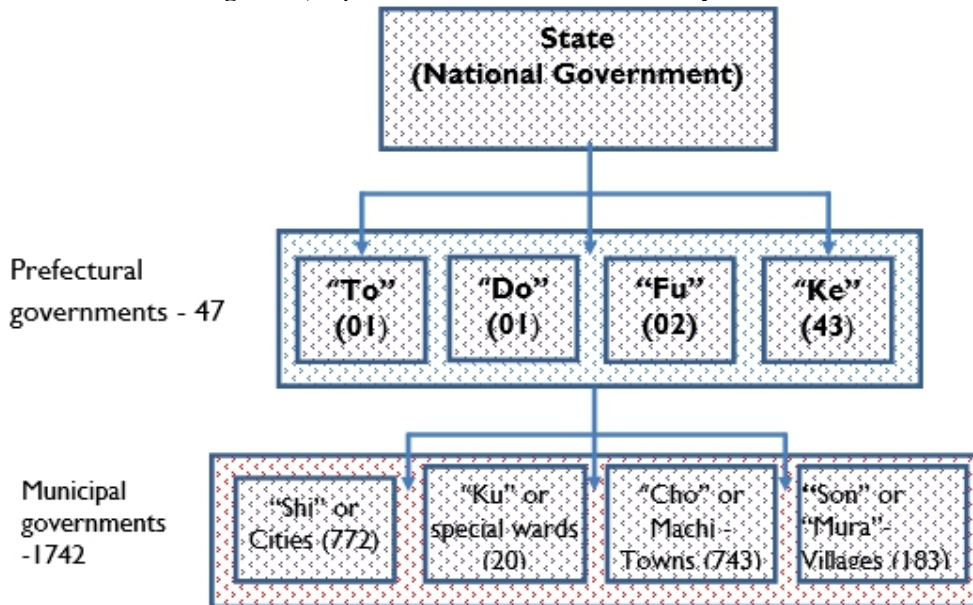
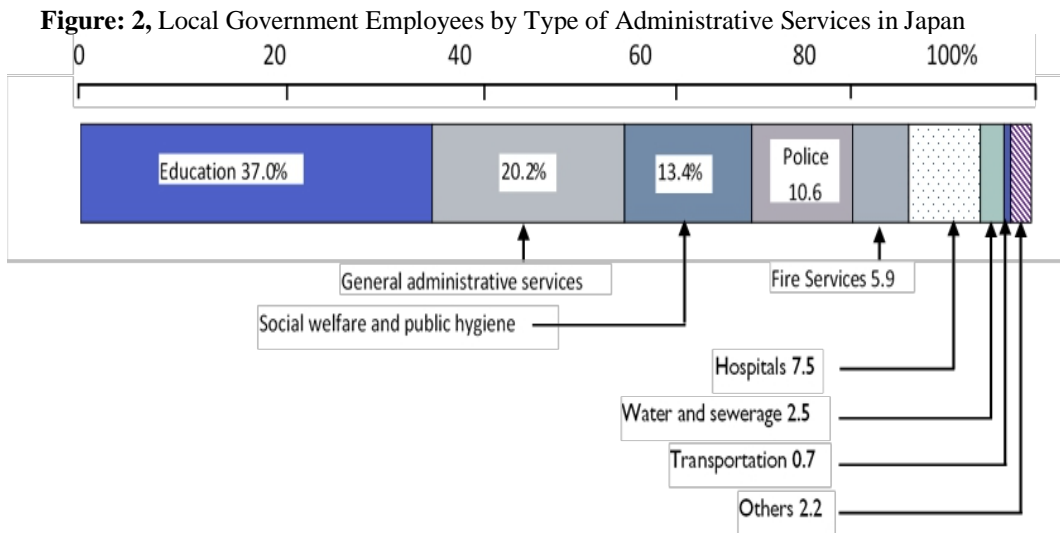Source: (Statistical Handbook of Japan, 2019, p. 194) and (UNCRD, 2014, p. 4)

Japan has many responsibilities to serve the people through local government. Thus, the local governments in Japan can identify some of the responsibilities and strategies used to meet their responsibilities. Accordingly, it is empowered to use a variety of tactics to perform its responsibilities. These facts are explained under several themes.

Discussion

Local Service Delivery: Local Services delivery has become an essential part of the relationship between government institutions and citizens. Also, local service delivery cannot be taken as an isolated matter, and it appears to be part of a complex relationship between government, society, and citizens. In general, citizen satisfaction, trust, credibility, and legitimacy must be ensured in government-led service delivery. Trust is a crucial element of the relationship between voters and their elected representatives, as well as part of the political system. Furthermore, the local service delivery is the determinants of the government's image, the position of the government, and the legal basis of its work (Eigeman, 2007, pp. 8-10). The European Commission has highlighted some advantages of local service delivery, such as more adequate to local needs, more flexible, more innovative, cheaper, sustainable, mobilizing the comparative advantages of local enterprises and the local non-profit sector, mobilizing local resources through taxation, and downward accountability (Olsen, 2007, p. 14).

According to Figure 2, considering the type of administrative services in Japan, the majority of local government employees applies to the field of providing education services. The general administrative services hold the second position while social welfare and public hygiene represent the third. Police service is the fourth important sector. It also identifies that a significant proportion of employees represents hospitals, fire services, water and sewerage, and transportation in the country.

Japanese local governments monitor over 70% of national works, but a majority of the standard public services are the responsibility of local governments. Local governments in Japan have a substantial role to play in fulfilling people's needs. Regarding broad responsibilities, prefectural roads, disaster restoration, harbours, agriculture, forestry, fisheries and river conservancy, public health affairs, vocational training, and police are prominent. They also include communication and coordination affairs, high schools, museums, hospitals affairs, commerce and industry, affairs relating to the fundamentals of residents' lives, fire service, garbage disposal, water supply, sewage, debt service, the welfare of residents, urban development, public halls, citizens' halls, day-care facilities, elementary and junior high schools, and libraries. Also, the above performances of prefectures and cities have been delegated to local governments (Ikawa, 2008). Local governments are implementing large administrative tasks that are locally important.

Figure: 2, Local Government Employees by Type of Administrative Services in Japan

Source: (Statistical Handbook of Japan, 2019, p. 195)

Local Governments Finance: In Japan, the local financial system (trinity reform) is restored with the objective of promoting local administration. It has three main goals: (1) Reduction of treasury disbursement, (2) Reduction of local allocation tax, and (3) Tax sources transfer from the central government to local government. Its objectives are (a) strengthening the autonomy in the local society and (b) reforming the public finance and administration in Japan as a whole (Kayama, 2007, p. 1). Local government revenue in Japan is compounded by several key themes. They are general revenue resources, local taxes, local transfer tax, special local grants, local allocation tax, national treasury disbursements, bonds for the extraordinary financial measures, local bonds, and other revenue resources (Kimura, 2015, p. 92). As per Table 2, Japan's local governments report higher revenue than expenditure. It contributes to the strength and autonomy of the local governments, as evidenced by the data from 2009 to 2017. A large portion of the local governments' expenses is directly related to the daily lives of the Japanese people. Several essential sources of such expenditure can be pointed out as, sanitation expenses such as medical services and garbage disposal; school education expenses; judicial, police, and fire service expenses; and welfare expenses that cover the development and management of welfare facilities for children, the elderly, and mentally- and/or physically-challenged (Statistical Handbook of Japan, 2019, p. 39).

Chart: 3, Relationship between Revenues and Expenditures Local Governments in Japan
(Millions of Yen)
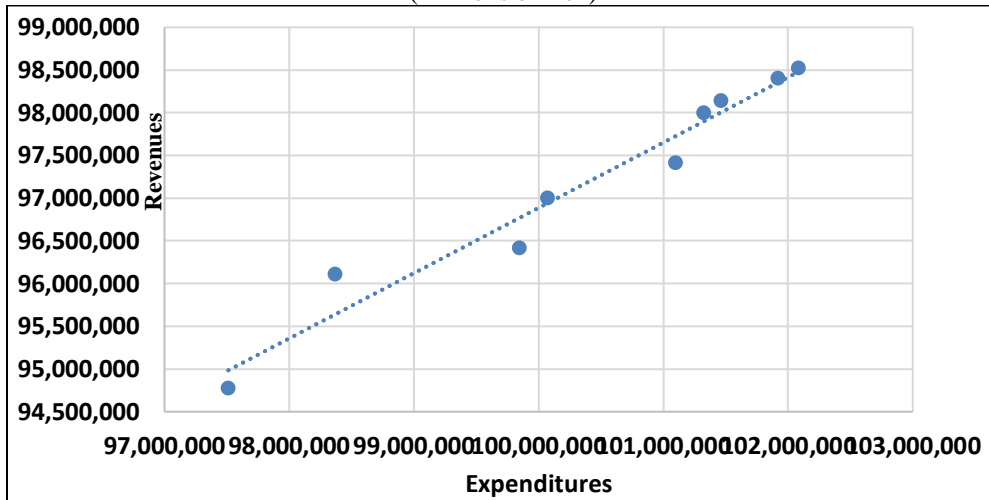
Source: (Author's calculations, 2020)

The scatterplot in Chart 3 shows a linear relationship between
revenues and expenditure of the local government in Japan

Table: 2, Correlations

		Revenues	Expenditures
Revenues	Pearson Correlation	1	.979**
	Sig. (2-tailed)		.000
	N	9	9
Expenditures	Pearson Correlation	.979**	1
	Sig. (2-tailed)	.000	
	N	9	9

Source: (Author's calculations, 2020)

According to Table 2, Karl Pearson's correlation value of revenue and expenditure is
0.979, and its P-value is 0.000. Hence, there is a strong positive correlation between
Revenues and Expenditure. Creating two hypotheses is necessary when calculating
this.

H_0: There is no significant relationship between Revenues and Expenditure.

H_1: There is a significant relationship between Revenues and Expenditure.

Also, in the above calculation, the p-value is less than 0.05. Hence, with 95%
confidence, it can be concluded that there is a significant relationship between
Revenues and Expenditure.

Table: 3, Descriptive Statistics on the Revenue and Expenditure of the Local Governments in Japan.

	Minimum	Maximum	Mean	Std. Deviation
Revenues	97511501	102083467	100408187.22	1600903.921
General administration (Expenditure)	8901591	10718365	9725424.67	549333.867
Public welfare (Expenditure)	19767874	26340756	23656917.11	2148233.968
Sanitation (Expenditure)	5812417	6743245	6163903.11	272527.170
Agriculture, forestry & fishery (Expenditure)	3171208	3552987	3302867.78	139431.352
Commerce and industry (Expenditure)	4901049	6575008	5862836.22	612388.418
Civil engineering work (Expenditure)	11242282	13292043	11955439.00	596815.982
Education (Expenditure)	16087778	16888597	16487264.22	301525.306

Source: (Author's calculations, 2020)

Table 3 shows the mean value of revenue and expenditure of local governments in Japan from 2009 to 2017. Also, the highest mean of expenditure was recorded for public welfare, which was 23656917.11. Furthermore, the mean of education expenditure came in second with 16487264.22. The lowest expenditure mean value is agriculture, forestry, and fishery, which is 3302867.78. As chart 4 shows, the period from 2009 to 2017 shows an increase in revenue over the expenditure of local governments of Japan.

Chart: 4, Local Governments' Finance Capacity in Japan - 2009-2017
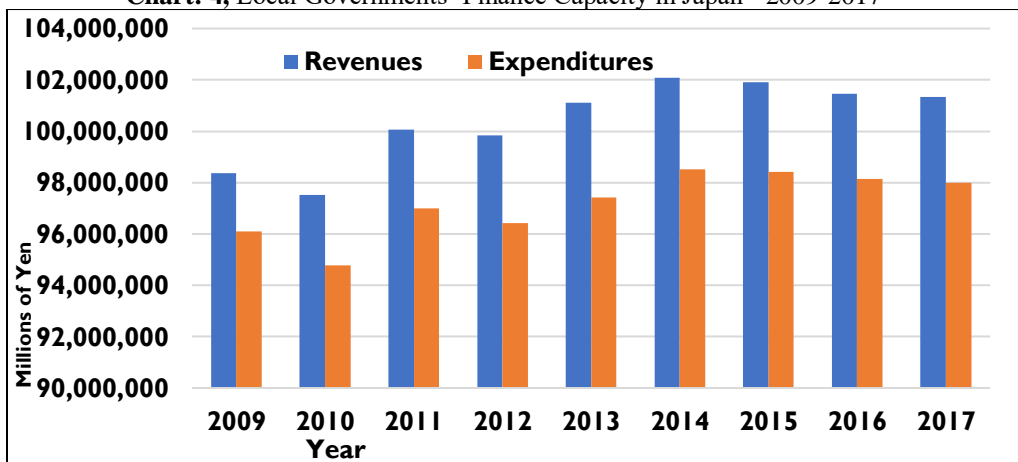
Source: (Japan Statistical Hand Books, 2009-2019)

Chart 5 shows the shape of revenue in Japan's local governments in 2016 and 2017. The largest share of local governments' fiscal 2017 (net) revenue came from local taxes, which accounted for 39.4 per cent of the total, and the second-largest source, 16.5 per cent, for local allocation tax. Similarly, the large portion of fiscal 2016 (net) revenue came from 38.82 local taxes and secondly the local allocation tax of 16.99. In addition to local taxes, the local allocation tax is also necessary, and it has contributed to increasing the financial capacity of local governments. Local allocation tax grants are the general objectives disbursed through the central government special account. According to the Ministry of internal affairs and communications, the goals of the local allocation grant are to adjust imbalances in tax revenue inconsistencies between local governments and guaranteed revenue sources. In Japan, local governments have a higher level of authoritative power to operate independent financial operations and access resources (Uddin, 2013, p. 940).

As per Chart 6, in Japan, the highest value of local government spending is on public welfare. It is followed by education, civil engineering works, and general administration, second, third, and fourth, respectively. Also, the lowest expenditure was reported on agriculture, forestry, and fishery.

Chart: 5, Local Government Revenues in Japan - 2016-2017

	Local taxes	Local transfer tax	Special local grants	Local allocation tax	National treasury disbursements	Local bonds
2016	39,392,39	2,340,232	123,300	17,239,00	15,687,14	10,387,27
2017	39,904,40	2,405,224	132,800	16,768,00	15,520,35	10,644,89
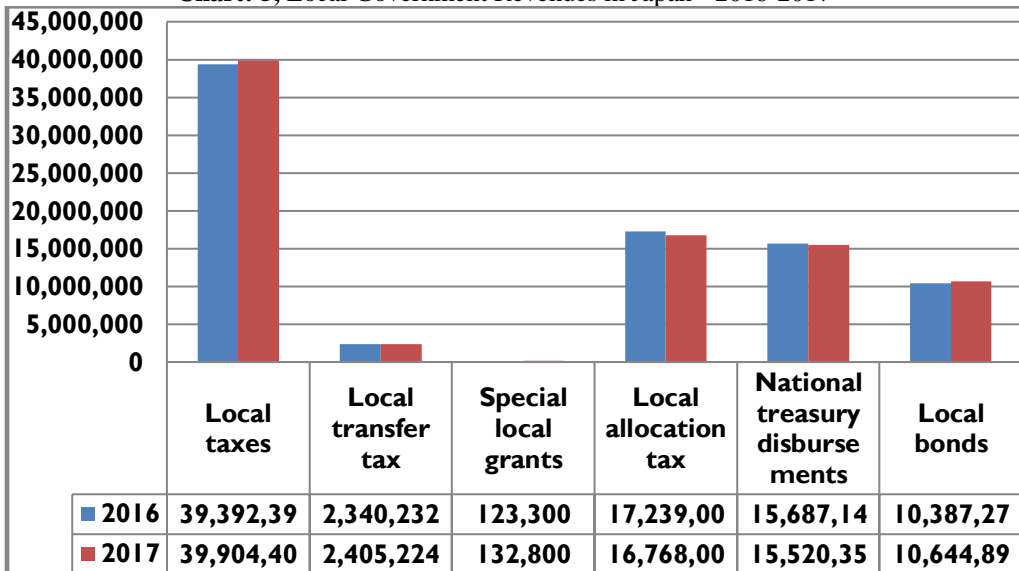
Source: (Statistical Handbook of Japan, 2019, p. 39)

Chart: 6, Expenditure on Subjects of Local Governments in Japan
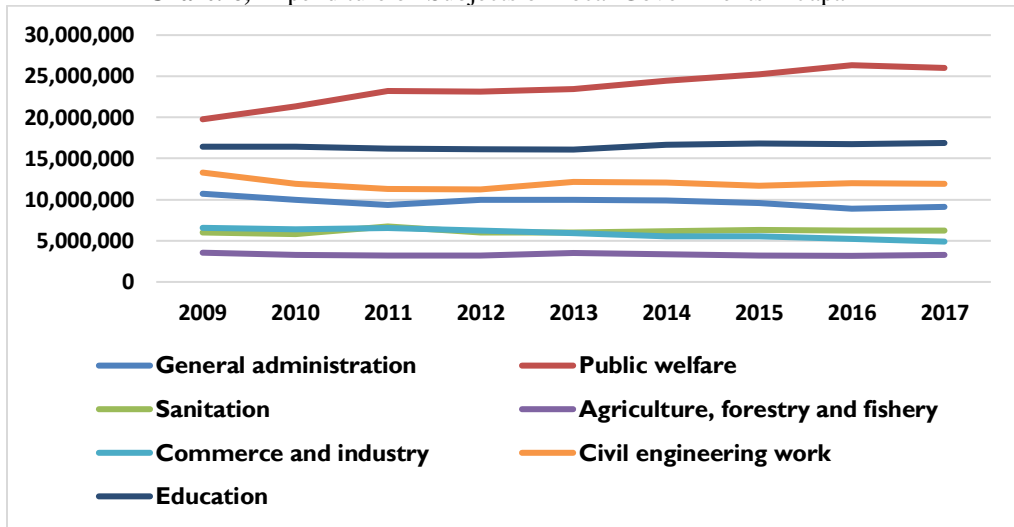
Source: (Statistical Handbooks of Japan, 2018, 2019).

Local Autonomy: A special feature of Japan's local governments is the recognition of "local autonomy" by the constitution. Articles 92, 93, 94, and 95 contained in Chapter VIII of the Constitution provide for the "local autonomy" of the local government. In addition to local Autonomy Law concerning local governments, various laws have been enacted such as the Local Public Service Law, the Public Offices Election Law, the Local Finance Law, and the Local Tax Law (CLAIR, 2019a, p. 2). The Local Autonomy Law 1947 describes the types of local authorities, residents, powers, responsibilities, and functions of organizations and the central-local relationship (M. S. Chowdhury & Hossienie, 2012, p. 25). Through the democratization program introduced in Japan in the late 20th century, local governments were able to gain local autonomy, allowing them to manage public policy aspects in areas such as regional development, welfare, environmental development, and government information disclosure. As a result, Japanese local governments have increasingly become active actors in the policymaking process (Patwar, 2014, p. 23).

Number of Administrative Layers: In general, prefectures and municipalities' Local Autonomy Law is defined as the two basic types of local government, while Japan's local autonomy system follows a two-tier prefecture system as regional government units and municipalities as basic local government units. Also, creating local governments in Japan has made it easier to provide services, taking into account the geographical conditions, the size of the population, the content of regional administrative services, and the degree of centralization of power (CLAIR, 2019a, p. 2). Figure 2 above shows the layers of local government in Japan. In Japan, local governments have

been established as part of the system of governance for the entire nation. Also, its central and local administrative institutions maintain a mutually dependent and mutually complementary relationship (Patwar, 2014, p. 26).

Central and Local Relation

There is a clear line of division of functions and responsibilities among the central, prefectural, and municipal governments in Japan. As such, there is no room for the central government to intervene in the local governments' activities. Moreover, local governments provide many services close to the daily lives of people. Therefore, the central government can focus on issues with national importance and other domestic needs of the country.

Japan's central government is always in the process of protecting local governments. Also, the local government prepares its own budget and the central government finances it with its own "local allocation tax" to ensure that the local people get a proper service (M. S. Chowdhury & Hossienie, 2012, pp. 32-33). "The local allocation tax grant" means an unconditional grant of the central government to local governments. The local allocation tax law outlines two main functions through "the local allocation tax grant." They are (1) equalization of local government fiscal capacity to compensate for regional disparities in fiscal sources, and (2) revenue guarantees for local governments to provide public goods and services. The central government assists the local government to overcome the revenue shortfall through the local allocation tax grant, thus enabling the local governments to manage its responsibilities (Aoki, 2008, p. 29).

Chart 7 illustrates the local allocation of tax to the local government layers by the central government of Japan. Furthermore, it shows that prefectural governments have been given more importance in the local allocation of tax. Local allocation tax grants are the general objectives disbursed through the central government special account. According to the ministry of internal affairs and communications, the objectives of the local allocation grant are to adjust imbalances in tax revenue inconsistencies between local governments and guaranteed revenue sources. Therefore, in some areas, administrative services can be provided with a certain level of administrative services.

Chart: 7, Grants of local allocation tax by central government - 2005-2016 (Billions of Yen).
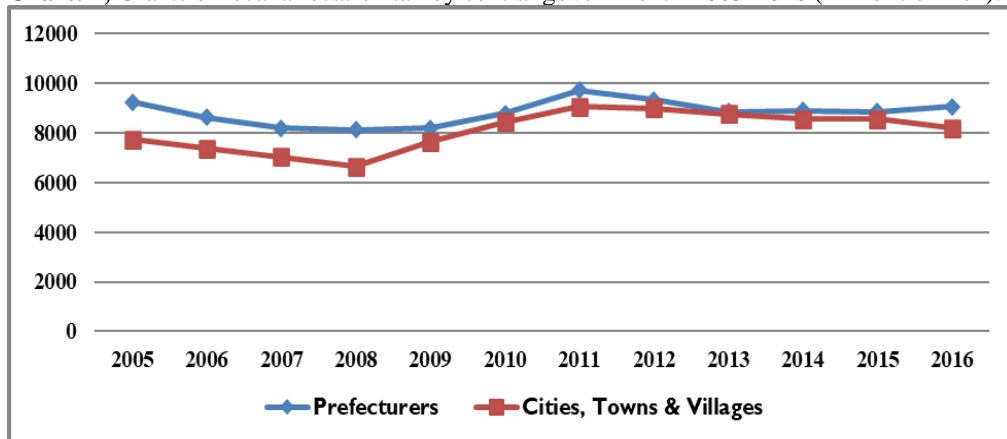
Source: (Japan Statistical Year Books, 2005-2016).

There are two types of treasury disbursements. First one is 'Disbursements of the national government to local governments,' and the second one is 'Disbursements of local governments to the national government.' However, the central government's national treasury disbursements process is discussed here. Japan's central government provides financial assistance for services or programmes offered by the local government through the national treasury disbursements. This could be classified into three: (1) National treasury obligatory share, (2) Central government subsidy, and (3) National treasury payment for agential tasks. The National treasury obligatory share means "the central government bears the whole or a part of the cost of a service or a programme provided or implemented by the central government and a local government under joint responsibility," for example, compulsory education. The central government subsidy means "the central government bears the whole or a part of the cost of a certain service or programme provided or implemented by a local government to encourage or facilitate it," for example, road development. National treasury payment for agential tasks means "the central government bears the whole cost of a service or programme provided or implemented by a local government on its behalf," for example, national census affairs. Nonetheless, unlike local allocation tax grants, the central government specifies the usage of national treasury disbursements (UNCRD, 2014, p. 42) (Aoki, 2008, p. 35). Treasury disbursements have a strong bond between the central government and the local governments.

Chart: 8, Trend of treasury disbursements (national & local) in Japan 2008-2019.
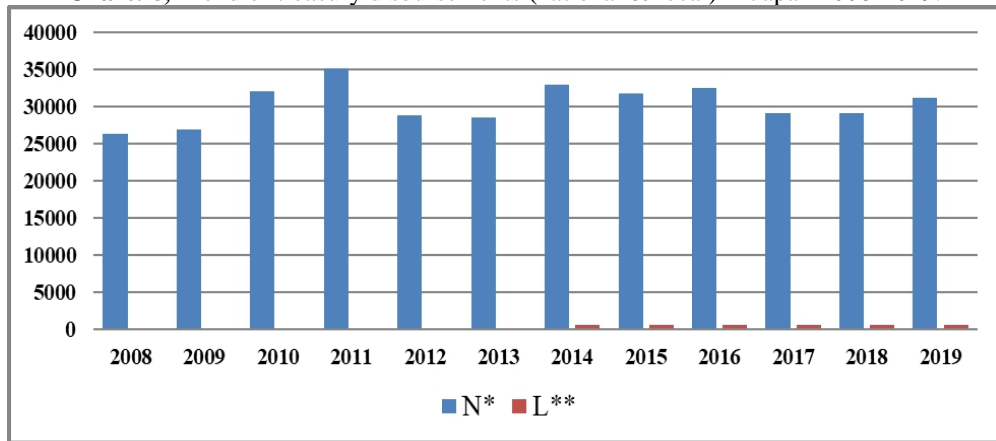
Source: (Japan Statistical Year Books, 2008-2019)

N* Disbursements of the national government to local governments, **L**** Disbursements of local governments to the national government.

Chart 8 presents Japan's trend of treasury disbursements from 2008 to 2019. The fund has created regional development efforts with the central government, and through this process, Japan's central government maintains a close relationship with local governments.

Local Government Assemblies: Japan's local government assemblies appear to have been formed based on a deep democratic system. These assemblies are deliberate bodies composed of members directly elected by the residents of the area. Similarly, representatives of elected local governments, based on a limited age group, are entitled to vote in their own council. The members submit bills to regulate the provision of services in their area, and they have to be approved by the assembly (CLAIR, 2019a, p. 11). There are many committees in the working of the local governments, some of them the board of education, public safety commission, and board of elections. The legal system and the constitution give a guarantee to the local governments in Japan. As a result, local governments can work independently and formulate and enforce the law within their jurisdiction (Patwar, 2014, p. 25).

Legislative Process of Local Governments: Local governments are empowered to enact "local ordinances" according to their requirements to strengthen Japan's local service delivery mechanism. Accordingly,

"Local public entities shall have the right to manage their property, affairs, and administration and to enact their own regulations within law-Article 94, Constitution."

By allowing it, provincial governments can enact two types of laws such as 'local ordinances' and 'regulations.'

Japan's local government structure provides a check and balance system that controls each other's activities, such as executive and legislative bodies. As a result, there is no room for any branch of local government to misuse power (Patwar, 2014, p. 25).

Residents' Rights and Roles: The local autonomy system of local governments in Japan are based on indirect democracy and giving residents the right to elect and be elected as members of the local assembly and chief executives - Governors and Mayors. In addition to their indirect democracy, residents are allowed to participate directly in politics at the local level. Accordingly, residents of the area can request through a petition to enact the following: for example, revise or abolish local ordinances, perform audits of government activities, dissolve the assembly, or remove assembly members or the chief executive (CLAIR, 2019a, p. 17). According to the constitution, there is provision for any local government to hold a referendum on any law. However, difficulties arise in implementing the above two methods. Collecting signatures of voters for direct petitions is not an easy task, and on the other hand, holding a referendum is a time-consuming and costly process (M. S. Chowdhury & Hossienie, 2012, p. 32).

Partnership with Private Sector

Most of the local governments collaborate with the private sector in Japan. In 2015, the public-private partnership (PPP) in Japan had made significant development. This trend was crucial regarding the service delivery of local governments. In the Japan-revitalization strategy, revised in 2015 by the Abe administration, the central government calls to local governments to provide the private sector with more opportunities to operate public (Sato & Okatani, 2016, p. 1).

Yuzawa town is a tourist attraction in the Niigata Prefecture, and the infrastructure needs to be developed. However, this city office alone cannot develop that area. Hence, in 1970, the city officials decided to improve this city with the private sector, and the infrastructure of Yuzawa town was developed. Due to the involvement of the private sector, Yuzawa government could improve the fiscal balance and continue a fiscal surplus since 1978. The public sector founded the trial "Kan ritsu min ei" hospital, managed by the private sector. This hospital, started in 1986 with the public and private sector, was developed to facilitate town people and foreigners. Accordingly, this hospital contributes to the tourism industry in the Yuzawa town and the region. The development of Yuzawa town was a joint venture with several other private sectors, and some of them are mentioned below:
Snowing region: Gala-Yuzawa skiing area in collaboration with JR East Japan, Transportation infrastructure (Turnpike & Shinkansen) for the tourism destination;

Hot spring resort: campaign for a tourism destination in Tokyo by the public sector, clean water and air; advantage for business activities of private companies including Japanese Sake and agro-industry companies.

Local government institutions could work with the private sector to gain many benefits. Many prefectures were transferred to the private sector such as Sendai Airport, Takamatsu Airport, Fukuoka Airport, Kobe Airport, New Kansai International Airport, Osaka International Airport, Toll roads, Water supply service, and sewage services (Sato & Okatani, 2016, pp. 2-3). Subsequently, the local governments of Japan managed to provide an efficient and quality service to the people.

Waste Management

In Japan, the central government has enacted and revised laws to deal with the waste problems that have evolved over the years. The central government collaborates with local governments to manage this waste problem (Ministry of the Environment, 2014, p. 3). Today, Japan's environmental administration is centred on the ministry of the environment of the central government. However, currently, many local governments enact necessary environmental by-laws as a framework for advancing environmental administration (CLAIR, 2008, p. 15). Local governments have prepared flyers and handbooks and illustrated how to dispose of waste in plain language and distributed it to residents to promote understanding of the waste collection. Also, the staff of the provincial governments are amicable and explain to the Japanese and non-Japanese residents about waste recycling in their respective areas.

In terms of waste management, the central government is primarily responsible for formulating basic policies, establishing waste management standards, the establishment of outsourcing standards, setting facility standards, and technical development and gathering information. In Japan, the prefectures perform several tasks with the support of the central government on waste management. These include the formulation of waste management plans, getting permission for the establishment of waste management facilities and industrial waste management operations, and administrative regulations. Also, municipalities are responsible for preparing municipal waste management plans and municipal waste management (Ministry of the Environment, 2014, p. 20). In this way, the problem of waste, which is a major local problem in Japan, is dealt with closely by the central government and the local governments.

Conclusion

The Japanese government system consists of three layers as the central government, prefectural governments, and municipal governments. Thus, Japan's prefectures and municipalities are recognized as local governments, and these institutions can engage in the delivery of local services as active political functional bodies with constitutional recognition. This article was designed to provide an empirical analysis of the performance of local service delivery under local governments in Japan. Concerning this objective, the theoretical and practical application of decentralization and local service delivery was discussed in the literature review.

The use of secondary data to analyse the revenue and expenditure of the local governments of Japan helped to identify its correlation. Karl Pearson's correlation value of revenue and expenditure is 0.979, and its P-value is 0.000. Also, there are two types of hypotheses; H_0: There is no significant relationship between Revenues and Expenditure, and H_1: There is a significant relationship between Revenues and Expenditure. Here, the calculated p-value is less than 0.05. It allows us to conclude with 95% confidence, that there is a significant relationship between Revenues and Expenditure.

Prefectural and municipal governments, along with the central government, provide services such as security, physical infrastructure development, education, welfare, health care, and economic development of the country. However, as a developed country, Japan's local governments have shown positive features, both fiscal capacity and power functional abilities.

Services such as waste management and sanitation are better implemented at the local level. Moreover, the highest value of local government spending in Japan is for public welfare. Education services, civil engineering, and general administration rank second, third, and fourth, respectively. As a result, Japan-revitalization strategy, revised in 2015 by the Abe administration, has made significant progress with the introduction of the Public-Private Partnership (PPP) to Japan's local governments. However, Japan's local governments are getting closer to the people and play a role in providing many services to them in their daily lives.

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Annexe 1: Administrative Organization of Prefecture

Governor	Deputy Governor	General Affairs Department
		Planning Department
Board of Education		Living and Environment Department
Superintendent		Health and Welfare Department
		Industry, Commerce and Labor Dept
Election Administration Commission		Agriculture, Forestry and Fisheries Dept
Personnel Commission		Public Works Department
Public Safety Commission		Accounts Department
Police Commissioner Chief of Municipal Police		
Local Labor Relations Board		
Auditor	Public Enterprise Manager	Enterprise Bureau

Source: (Sasaki, 2014)

Annexe 2: Administrative Organization of Municipality

Mayor	Deputy Mayor	General Affairs Division
		Taxation Division
Board of Education		Community Services Division
Superintendent		Commerce and Tourism Division
		Agriculture Division
Election Administration Commission		Health and Welfare Division
Personnel Commission (Equity Commission)		Construction Division
Agricultural Commission		Fire Department
Fixed Assets Assessment Examination Commission		Accounts Division
Auditor	Public Enterprise Manager	Enterprise Bureau

Source: (Sasaki, 2014)

ESJ Humanities

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Religions as Complex Systems: Features, Purpose and Structure

Abstract
Complexity is a paradigm whose relevance is currently expanding beyond the domain of 'hard' sciences. Humanities and social sciences could greatly benefit from using it as an antidote to reductionism, and religious studies in particular is a field in great need of defragmentation and a broader theoretical perspective. This paper's ambitious aim is to propose such a perspective while frequently crossing interdisciplinary borders and, by drawing inspiration from and criticizing the work of evolutionary anthropologist Richard Sosis, to offer an integrative analytical framework for the study of religions as allopoietic complex adaptive systems. Firstly, this paper describes the core features of complex systems (non-linear, autopoietic/allopoietic, entropy reducing, open, adaptive, emergent). Secondly, it identifies religions as abstract complex systems and their basic components as signal/noise distinctions of informational inputs from the environment. More importantly, it posits that they fulfill an entropy reducing function in psychic systems by the emergence of meaning. Lastly, it builds a model of religious systems and identifies six building blocks: rituals, myths, taboos, supernatural agents, authority and afterlife beliefs, following Luhmann in claiming that individuals are not part of the system, but of the environment. Consequently, the cooperative behavior of individuals to form social structures cannot constitute the ultimate output of the system, but only a behavioral effect of the actual one, meaning.

Keywords: Religion, Complex adaptive systems, Entropy, Meaning, Signal/Noise distinctions

Introduction

To say that the social world (or any kind of 'world') is complex represents a platitude we can undoubtedly do without in any scientific context. Unfortunately however, in humanities and social sciences we seem to actually do without the idea of complexity, despite an almost intuitive grasp most scholars have of this crucial ontological aspect of reality. Complexity theory has only recently gained some traction in social sciences, thanks, in part, to the scrutiny of the phenomena related to globalization and the subsequent development of the highly inter-disciplinary field of 'Global Studies'.

The Gulbenkian commission on the restructuring of social sciences recognized, in 1996, the (not merely scientific) necessity of a complexity turn as an antidote to reductionism:

> "*We come from a social past of conflicting certitudes, be they related to science, ethics or social systems, to a present of considerable questioning, including questioning about the possibility of certainties. Perhaps we are witnessing the end of a type of rationality that is no longer appropriate to our time. The accent we call for is one placed on the complex, the temporal, and the unstable, which corresponds today to a trans-disciplinary movement gaining in vigour.*" (Gulbenkian Commission, 1996, 79).

It is important to note, however, that 'Complexity Theory' differs from traditional theories in that it is not an explanatory endeavor that tries to establish linear causal connections, but should be understood as a scientific framework for organizing knowledge (Castellani & Hafferty, 2009; Byrne & Callaghan, 2014): "*...when we say complexity 'theory' we mean by theory a frame for understanding which asserts the ontological position that much of the world and most of the social world consists of complex systems (...)*" (Byrne & Callaghan, 2014, p.8)

Complexity will therefore be employed in this paper not as a theory *per se*, but rather as an approach to the analysis of religions, in an attempt to place them in the ontological category of **complex adaptive systems** and provide an integrative outlook on their structural and behavioral features. The first step in that direction should be to explain:

1.   What is a complex system and what does it do?

Because of the size and difficulty of the task, the description of complex systems will be limited to those characteristics that are of major concern to the current paper, leaving the elaboration of other fairly important features to a future one, in a more appropriate context.

Firstly, a system is any interconnected set of elements (Meadows, 2009). A system can be defined as **complex** when:

P1: **The level of interconnectedness between the elements of a system is so high that removing/modifying one of them disrupts the behavior of the system in ways that cannot be qualitatively and quantitatively predicted based on the analysis of the element on question** (Miller & Page, 2007).

This particular property is closely connected to **non-linearity**.

Linearity is a basic feature of the Newtonian paradigm, describing (usually by means of a nomothetic law) a type of causal relation that is constant in space and time and implies proportionality between the changes in the causal elements or the value of the parameters of a state and the consequences or effects of these changes (Byrne & Callaghan, 2014). Contrary to conventional quantitative scientific accounts, a large portion of the inanimate world, as well as all living systems are dominated by **non-linearity** (Urry, 2005). Any attempt at a convincing mathematical description of it would be an unnecessary risk (coming from a non-mathematician addressing a non-mathematician audience). For the purposes of this paper, and despite its underlying adversity towards reductionism, non-linearity will be 'reduced' to:

P2: [Non linearity is…] **A relationship between variables that is variable itself in unpredictable ways, changes in effects (outputs) being disproportionate to the changes in causal elements (inputs).** (Mosko & Damon, 2005)

P2 implies P1, as non-linearity implies complexity (and vice-versa).

Autopoiesis is a term coined by the biologists Maturana and Varela (1980) to express that:

P3: **Complex systems exhibit the capacity to self-organize and self-produce**. By regenerating the network of processes that produced them, they are autonomous from the environment and constantly change to maintain their organization. Sosis (2019, p. 438) observes that religious systems (or secular ones with religious features) appear spontaneously whenever humans live in a community.

Dekkers (2017) points out that **autopoiesis** is difficult to conceptualize because of the cognitive limitations of the observer and should therefore be applied with reservations, exclusively as an explanation for systems with a high degree of complexity. He further mentions **allopoietic systems** as a special class of autopoiesis that are produced by or emerge from systems external to them.

Systems can be classified as **closed** or **open**. A closed system does not exchange energy, matter, or has any kind of interaction with the environment, but only between its own elements, and therefore can only maintain or decrease in structure (thus maintaining or increasing entropy).

P4: **Open systems (such as all complex ones) exchange energy/matter/information with the environment under the form of inputs (from the environment towards the system) and outputs (from the system towards the environment), while being able to move towards negative *entropy* in the form of increasing levels of organization** (Walonick, 1993).

It is necessary at this point to introduce **entropy**, a term borrowed from thermodynamics:

P5: **Entropy refers to a measure of the predictability of systems. If one is able to predict the next state of a system, entropy is considered to be low and the system is considered to be organized** (Mavrofides et al., 2011).

Entropy has also been interpreted as **lack of available energy for the system**, which can lead to either disintegration or isolation (Mavrofides et al., 2011), but these effects can also be compatible with an informational approach (reducing the information received by the system narrows its horizon of meaning, resulting in isolation/disintegration).

P6: **Open complex systems (especially living ones) , are also *adaptive*, precisely because they exchange** <u>information</u> **with their environment and change as a result of experience** (Byrne & Callaghan, 2014).

Information is therefore a key aspect of complex adaptive systems, and Rappaport, following Bateson (1972) even describes them in entirely informational terms as being "*organized in ways that tend to preserve the truth value of certain propositions about themselves in the face of perturbations continually threatening to falsify them*" (Rappaport, 1999, p.6). This aspect will be discussed in a future paper, but it should be mentioned here that while in organisms these propositions are genetically encoded, Dawkins (1976) theorizes that in social systems they are culturally encoded in what he calls 'memes', namely units carrying cultural ideas, meanings, symbols and practices that spread by means of imitation and communication and have the capacity to mutate, self-replicate and adapt. Although it has received enough (justified) criticism to prevent this paper from following a 'memetical' approach, the concept of 'meme' could provide a useful analytical framework for the adaptive feature of social complex systems.   .

The concept of **emergence** has paradigmatic value in any complexity-based approach.

P7: **Emergence is exhibited by systems when their behavior cannot be described solely by the properties of their components. Emergent properties are relational, not constituent**; the whole is more than the sum of its parts. The link between emergence and non-linearity is expressed in the

contradiction of the principle of superposition. In a linear system the resultant (effect) of two causal forces is merely the addition or subtraction of the effects of each individual cause. In non-linear systems this principle does not hold, and new unpredictable effects can appear, signaling the onset of cooperativity between the elements and the arising of new properties of the system (Nicolis, 1995). Another feature of emergent causation is that the relationship between causes and effects is not unidirectional. Effects can 'cause' their own causes, recreating themselves in a process described above as autopoiesis. Byrne and Callaghan (2014) further argue that an emergent account of complex causality should not be restricted to the interactions between components, but should be extended to incorporate the causal influence of the whole over its elements.

The types of systems that we are studying are therefore open and adaptive, appearing as **solutions to** a problem, which is **the complexity of the environment**, also expressible as **entropy** or simply unpredictability (Mavrofides et al. 2011). Systems absorb complexity, but they also adapt in order to respond more efficiently to it, becoming more complex themselves and triggering the need for new complexity absorbing entities (systems) in a process known as evolution.

The subsequent task of this paper should be the analysis of the specific composition and features of religious systems, concurrently trying to corroborate it with the above (schematic, but hopefully consistent) description of complex systems.

2.   Religion as a complex adaptive system…of what?

Adapting concepts originated in natural science or mathematics to the study of social and psychological phenomena in an effort to borrow some 'scientificity', must always be done with the appropriate caution, as the risk of fitting reality to theory is significant. Cho and Squier (2013) relegate the religious application of systems theory to no more than a metaphor, though recognizing its analogical value, while other scholars, such as Sosis (2019) view religions as being complex adaptive systems in all aspects. Defining religion in terms of complexity (or otherwise) is a necessary but risky enterprise, as any definition (especially of a complex phenomenon) is bound to be reductive and therefore vulnerable to any sort of attack. Hopefully, the complexity framework will help avoid the traps of reductionism, linear causality or spurious correlations.

One obvious (but sometimes overlooked) source of caution is the significant difference between the non-reflexive agents (not self-aware) typical of natural systems and the reflexive agents (self-aware and linguistically capable) of social systems. Goldspink (2007) specifically links this difference to linguistic capacity, theorizing that our sensory surfaces detect differences in some dimensions of the environment, determining our cognitive apparatus to

operate **distinctions**. When these distinctions reach a certain complexity threshold, they can be represented in language, making possible "*the emergence of domains of interaction which can themselves become the target for further linguistic distinction and hence new domains. In other words, language allows the agent to make distinctions on prior distinctions […] These capabilities greatly expand the structural flexibility of the agents: they can now invent shared epistemic worlds. The phase space of agent cognition is now based primarily on constraints of ontogeny rather than phylogeny and is hence under the influence of the agent/s*". (Goldspink, 2007, p.52). Another important aspect mentioned by this author is that sufficient cognitive capacity determines **self-awareness** (the capacity to distinguish the self from others and treat it as an object) in agents, allowing them to exhibit reflexive behavior which participates in the construction and maintenance of identity as a part of the agent's world creation (Goldspink, 2007). The main consequence of reflexivity from a sociological perspective concerns the relationship between agency and structure, between the micro and macro levels of society. Social systems form a distinct class because the feedback process between macro and micro phenomena is different from that of other systems, as agents are able to modify their behavior based on the cognitive distinctions they make and the interpretation (meaning) they attach to these distinctions, thus redefining their own position within the system and potentially changing the structure they participate in generating (Goldspink, 2007). Byrne and Callaghan distinguish between agency and action, claiming that the latter: "*comprehends both the reflexivity of agency and the non-reflexive, reproductive elements that are consistent with the structural context. What people do is a contingent outcome of those structural and contextual elements working in interaction with conscious, rational and affective interpretations of meaning.*" (Byrne&Callaghan, 2014, p.111).

Despite the sustained efforts to steer clear of the type of theoretical controversy that could render our task interminable, there is one crucial aspect in need of clarification. It can be summarized in one question: If we consider religion to be/behave like a complex system, what are its components? It is a complex adaptive system of what?

The answer might seem obvious to some, as the mainstream complexity paradigm claims that individuals are agents for social systems and their interactions result in emergent social phenomena. Starting from an evolutionary perspective, Richard Sosis builds a convincing model of religious systems, clearly stating that "*individuals are agents of the model*" (Sosis, 2019, p.429), even though he never mentions reflexivity or makes any reference to the crucial distinction between natural and social systems that has been discussed here. He further writes that: "*Energy is introduced into the religious system through human action in the form of ritual. […] All systems*

transform energy; likewise, the religious system transforms the energy and information of human ritual behaviors into human cooperative and coordinated behaviors." (Sosis, 2019, p.430). Sosis models religion as a complex adaptive system, but this approach raises a number of questions: If religion is a complex adaptive system, it is necessarily an open one. If P4 holds true, it follows that energy inputs come from the environment towards the system, and energy outputs from the system towards the environment. If, as Sosis claims, individuals are part of the system, they cannot be the source of energy inputs (that can only originate in the environment) and the output cannot be their cooperative behavior (except if they are part of the environment). It is also important to notice the ontological distinction between **religions** and **religious groups**, which Sosis seems also to ignore throughout his paper.

Luhmann (1995) provides us with an alternative perspective and perhaps with a possible solution to this dilemma by excluding individuals (which he significantly calls 'psychic systems') from social systems, which he defines in terms of communications and interactions of meaning: "*A social system comes into being whenever an autopoietic connection of communication occurs and distinguishes itself against an environment by restricting the appropriate communications. Accordingly, social systems are not comprised of persons and action but of communications*." (Luhmann 1995 quoted in Byrne &Callaghan, 2014, p.98). Individuals thus become the medium (environment) of the communications constitutive of the system.

Luhmann does not deny the fact that organisms are the carrying substratum for psychic systems, which in turn are the carrying substratum for social systems, but he sees these levels as operationally closed, existing only as environments to each other. Organisms are systems that reproduce by using energy and matter from the environment, but in psychic and social systems "*autopoiesis does not consist of biochemical processes but of self-referential distinctions, which occur in the medium of meaning. Within psychic systems the operations take the form of consciousness and experiences; within social systems they take the form of communication.*" (Luhmann, 1995 quoted in Gren & Zierhofer, 2003, p.617).

To make matters even more complicated, Geertz, one of the pioneers of the systemic approach in the study of religion, defines it as a "*system of symbols, which acts to establish powerful, pervasive, and long-lasting moods and motivations in men...*" (Geertz, 1973, p. 90).

At the risk of being overwhelmed by the avalanche of distinctions, introducing yet another one seems inevitable at this point:

> "*A real system is any system of matter and/or energy. An abstract or analytic system is a pattern system whose elements consist of signs and/or concepts. Unlike the real system, which can only exchange*

information, abstract systems <u>are</u> information." (Wallonick, 1993, para. 8).

In conclusion, is religion a system of individuals, a system of communications, a system of information (symbols) or none of the above? Building on Bateson's (1972) definition of adaptive systems and on Shannon's (1948) view of information as uncertainty, religion is understood in this paper as an **information processing system functioning to reduce the uncertainty (entropy or complexity) of the environment**. Brioullin (1962) and Leydersdorff (2002) define "*'information' as 'meaningful information' or 'neg-entropy', but that can only be said about signal, which is processed information, and does not apply to noise, which is also information, albeit meaningless. Reduction of uncertainty, or the meaningfulness of information, however, can only be defined with reference to a system. In general, a system can be defined as a unity that is able to retain information by updating.*" (Leydersdorff, 2002, p. 131). Updating as a result of information absorption means adapting (P6). Do religions adapt? It is certain that they undergo changes, especially when exported to other cultural contexts, and these changes increase their compatibility with the local abstract (cultural) systems and, implicitly, their level of acceptance. In other words, religious complex systems update, being therefore adaptive.

Considering psychic systems as the environment for abstract ones (such as religion) seems to suggest that the latter belong to the category of allopoietic systems (P3), because, as Dekkers (2017) mentions, they are 'created' by other systems/entities (psychic/social systems) to serve a particular function expressed through their output: "*The dependency on the external systems for justifying its existence means also that it depends on the perceived need of the output or function by the external entities*" (Dekkers, 2017, xxiv). It is therefore justified to ask ourselves at this point: what is the output of religious complex adaptive systems?

The concept of **meaning** appeared throughout this paper in reference to the work of Dawkins, Mavrofides, Goldspink, Byrne and, of course, Luhmann, who specifically states that "*psychic and social systems, unlike machines and organisms, can be characterized by their use of meaning*" (Luhmann, 1995, p. 3).

Meaning is central to the understanding of religion as a complex adaptive system, which can be resumed in the following points:

1. Religious systems are solutions to the complexity of the environment.
2. As such, religion decreases entropy and increases predictability by means of organizing the information received from the environment (P4, P5)
3. Religion provides reflexive agents with a system of reference for

operating distinctions in the environment, which coagulate around symbols, themselves structured, in turn, around **building blocks** (see below).

4. The basic form of distinction is operated between 'signal' and 'noise'. Signal is understood as meaningful information, or information that reduces uncertainty/increases predictability, while noise is random and useless information in terms of predictive capacity. As no information can be strictly neutral, noise can be considered as increasing uncertainty by obscuring signal.

5. Meaning is understood here as **the emergent** (P7) **teleological structuring of reality** (ecological environment) **aimed at making it coherent, purposeful and significant; it is the resultant of the interaction of multiple cognitive operations consisting of distinguishing between signal and noise, based on one or multiple systems of reference, which, most of the times, are non-binary, instead assuming different levels of significance** (what is considered signal at one level can become noise at another level).

6. As religion acquires and turns information into meaning, it becomes more complex, thus gaining freedom (an increasing variation of responses results in higher adaptability, which is why universal religions such as Christianity, Islam or Buddhism manage to adapt to a variety of local contexts and can respond homeostatically to different kinds of historical perturbations just by the change of some subsystems. However, when the complexity level becomes too high and the system, through accumulating freedom, becomes more unpredictable and therefore more entropic, the emergence of new complexity absorbing systems is inevitable; religions thus splinter into sects that usually emphasize only one or a limited number of doctrinal aspects. Ex. Nichiren Buddhism focuses on the practice of chanting the mantra *Nam Myoho Renge Kyo* and reciting the Lotus Sutra as sufficient means to reach enlightenment and Pentecostalism emphasizes spontaneous, direct and personal experience of God through baptism with the Holy Spirit, as opposed to the theological subtleties of Catholicism)

7. Religion is an abstract complex system and takes other abstract complex systems (political, economic etc.) as environment, interacting with them in a process called co-evolution (Maturana & Varela, 1980).

8. The distinctions that religion operates with refer to specific domains (immanent/transcendent if we are to follow Luhmann, or sacred/profane for Eliade etc.), thus differentiating itself from other systems (Ex. Politics operates with power and hierarchy distinctions such as legitimate/illegitimate). It is important to emphasize that, as

the brain's processes are not separate, these domains are also not strictly separate (for example, the concept of 'religious authority' also implies the basic political domain distinction of legitimate/illegitimate). Religious systems are also **expansive** in that their domain tends to absorb others, partly due to the existential weight of the questions they address.

9. Similar, but not identical to Luhmann's position, individuals (psychic systems) are not considered to be a part of the religious system, but constitutive of the environment as carrying substratum for abstract systems (religious, political, economic, etc.). Religion operates as an information processing system both within psychic systems and social systems. The 'meaning' that emergences from interactions between cognitive operations is both individually and socially constructed, according to feedback loops that are characteristic of nonlinear, complex causality. In other words, individual meaning is created within a psychic system, and the convergence of individual meanings results in the emergence of social meaning, which in turn reinforces and influences individual meaning in an ambivalent cause-effect dynamic.

10. Religious systems manifest a special type of autopoiesis, as they emerge from/are created by entities external to them (that are part of the environment; in this case, psychic systems). They belong therefore to the class of **allopoietic systems**, as well as being **adaptive**. Their adaptations/mutations are driven by external enactment (Dekkers, 2017), depending on changes in the perceived need of their output.

In conclusion, **religions are abstract, allopoietic, adaptive and complex systems that mediate the nonlinear relationship between the <u>ecological environment</u> and <u>psychic systems</u> by processing and organizing informational inputs from the former in order to contrive outputs for the latter in the form of <u>meaning</u>, thus reducing the perceived entropy/complexity.**
This perspective is not far from some of Luhmann's later ideas:

> "*In its origins, religion can best be understood as semantics and praxis concerned with the distinction between the known and the unknown. This distinction classifies the world without considering that this classification differs for every observer, every settlement, every tribe. By allowing the unknown to appear in the known, giving access to the inaccessible, religion formulates and practices the situation in the world of a societal system aware of being surrounded in space and time by the unknown.*" (Luhmann, 2012, p. 139).

The two positions (this paper's and Luhmann's) seem to converge, especially regarding the construction of meaning. However, clearly identifying the patterns of this construction process is a difficult (if not impossible) task, especially because of the permanent and unpredictable feedback between individual and collective meaning. In other words, while it initially emerges within psychic systems, it is communication that establishes a rough, negotiated, collective structure of meaning, expressed through symbols, which can be otherwise called **culture**. The bidirectional nature of the feedback process contributes to the heterogeneity of beliefs, even within the same cultural/religious community, as confirmed by cognitive science: "*The specific composition of religious beliefs varies within denominations, and is probably unique to every practitioner*" (Smith, 2014, p. 215).

This point might bring to the reader's memory Luhmann's eminent debates with Habermas (1971). Bausch (1997) synthesizes their contrasting positions, showing that while Habermas bases his theory of communicative rationality on the intersubjective creation of lifeworlds, cognitive reference systems which condition human action (otherwise defined as shared social horizons of meanings and culturally transmitted and linguistically organized patterns, meaning thus resting upon interpersonally accepted norms based on a number of unspoken premises, such as rightness, truth and truthfulness), Luhmann "*holds that meanings are a cumulation of past selections made in the course of the system's survival*" (Bausch, 1997, p. 317), being both a process and a result. It is a result of contingent selections made by social systems (understood as organized patterns of behavior) in order to proceed amid the complexity of the environment, and a system's dynamic process for "*making its future and its memory of those selections* […] *it builds up a unique backlog of selections made and selections negated. It uses this accumulation of selections, its meanings, as values for making future selections.*" (Bausch, 1997, p. 316).

There is undoubtedly strong compatibility between this paper's approach (which can be described as informational and cognitive), and Luhmann's view (as summarized by Leyersdorff) that "*the observable events have to be provided with meaning—that is, <u>understood</u> by a psychological system—before they can be made relevant at the level of the social system.*" (Leydesdorff, 2000, para.5). The idea that information is initially provided with meaning at an individual level has been inspired by the anthropological fieldwork the author of this paper undertook in Japan, at the Sogenji Zen Buddhist temple, extensively observing and interviewing several monks of European, North-American and South African origin. They not only practiced Rinzai Zen (a particularly demanding form of Buddhism) in a different way compared to the Japanese monks, but also had various personal interpretations of Buddhist concepts and perceived meanings associated with this practice that

reflected their own experiences, spiritual objectives and cultural backgrounds, being ultimately inconsistent with both the official 'doctrine' and the views of the other practitioners.

Luhmann's contribution to complex adaptive systems theory is underestimated, because, as Lenartowicz et al(2015) show, in this research paradigm (including the work of Sosis) it is "*typically taken for granted that, in the case of social systems, the basic components are human beings that interact in a 'nonsimple', context-dependent, non-deterministic manner that gives rise to complexity*" (Lenartowicz et al., 2015, p.2). The German sociologist not only offered an alternative perspective on social systems that "*assumes basic components that are not people, but sense-making, meaning-processing communications"* (Lenartowicz et al., 2015, p.3), but also, by frequently describing a system's activity in its environment using terms such as 'observing' and 'coding', fueled an interpretation of social systems as cognitive systems and provided the current paper with a theoretical cornerstone. Moving beyond this starting point lead to the claim that the basic components of religious systems are not communications, but signal/noise distinctions that reduce the complexity of the environment for and within psychic systems (individuals), a legitimate conclusion if we understand religions (as well as any social systems) as cognitive complex adaptive systems. Their dynamic and adaptive aspect (how and why religions change?) has not been sufficiently discussed here, as it deserves a more thorough approach in a future paper. However, the structural features of religious systems cannot be ignored if the objective is to offer a coherent initial outlook:

3. How are religious complex adaptive systems structured?

In this paper's theoretical perspective, Geertz view of religion as a system of symbols is only partially valid. It has been proposed here that religions organize informational inputs from the environment into signal/noise distinctions, which are the basic components of the system. However, Holland (2012) shows that components of complex adaptive systems interact according to patterns that persist when disturbed, maintained by a set of rules for interaction that constitute a formal grammar. In a network, frequent, recurrent interactions coagulate into nodes and clusters of nodes, which "*become building blocks for the regularly changing topology of the network […] Building blocks underpin the emergence of complexity in all closely examined complex adaptive systems*" (Holland, 2012, p.51). In the case of religions, these nodes are synonymous with **symbols**, defined by Geertz as "*tangible formulations of notions, abstractions from experience fixed in perceptible forms, concrete embodiments of ideas, attitudes, judgments, longings, or beliefs*" (Geertz, 1973, p. 91). There is essentially nothing to object to regarding either this definition , the aforementioned one of religion, or his

view of culture as "*an historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which [human beings] communicate, perpetuate, and develop their knowledge about and attitudes toward life*" (Geertz, 1973, p. 89), all of which being compatible with the complex, informational, cognitive and meaning centered approach presented in this paper. The only issue that can be taken with them is the exclusive focus on one (intermediate) order of organization, ignoring both the system's basic components (signal/noise distinctions) and the emergence of higher order structures, because, according to Holland, "*building blocks at one level of complexity are combined to get building blocks for structures at a higher level of complexity*" (Holland, 2012, p.110).

In conclusion, the behavior of elements (building blocks) at one level emerges (P7) from the interactions of lower level components (s/n distinctions or other building blocks) following a formal grammar (set of rules) that specifies allowable combinations. Geertz is right in considering religions a "*cluster of sacred symbols, woven into some sort of ordered whole.*" (Geertz, 1973, p. 129), as this ordered whole is 'glued' together and given coherence by the output of the system, meaning. He disregards, however, both the lower and higher levels of organization. If the former has been discussed in the previous section, we will proceed by analyzing the specific building blocks that not only vary in content from religion to religion, but also combine in different ways to create the religious system, resulting in considerable variation.

Sosis (2019) also draws inspiration from Holland, identifying eight building blocks of religious systems: ritual, supernatural agents, myth, sacred, taboo, authority, meaning and moral obligation. Although it will be used as a starting point, Sosis' model differs in some important aspects from the one proposed in this paper, which retains five of the building blocks and adds one: **Ritual**, defined in Rappaport's terms as "*the performance of more or less invariant sequences of formal acts and utterances not entirely encoded by the performers*" (Rappaport, 1999, p. 24). It is precisely this physical (human) action that makes ritual the central building block of Sosis' religious system, because it introduces energy into the system, as well as social information. Although they are "*typically stylized, repetitive and stereotyped*" (Sosis, 2019, p. 425) and do not confer information in Shannon's terms (they imply no uncertainty), the performance of rituals, according to signaling theory (Irons, 2001; Shaver & Bubulia, 2017), provides signals of the performer's commitment to the group/religious community and its religious norms and traditions. This idea is inspired by Zahavi's 'handicap principle', that states that the cost of signals is indicative of honesty (Zahavi, 1975). Although the informational approach adopted in this paper refutes Sosis' idea that human action through ritual performance introduces energy into the religious system

(it might happen relative to religious groups/communities, but religion is seen as an informational system, not a real one), signaling theory, supported by his earlier studies, is consistent with it. Ritual performance is signal, which is interpreted systematically in a way that reduces entropy (P5), by making the performer's behavior, motivations, attitudes, emotions predictable, as well as by providing regularity to communal life.

The importance granted to rituals in the modeling of religious complex systems is not exaggerated, for, as Geertz notices:

> "*…it is in ritual […] that this conviction that religious conceptions are veridical and that religious directives are sound is somehow generated, […], that the moods and motivations which sacred symbols induce in men and the general conceptions of the order of existence which they formulate for men meet and reinforce one another. In a ritual, the word as lived and the world as imagined, fused under the agency of a single set of symbolic forms, turn out to be the same world…*" (Geertz, 1973, p.112)

This seems to confirm not only that rituals are a central building block of religious systems, made of sacred symbols and their interactions, but also that they are such a crucial generator of meaning that they validate the entire system by fueling its acceptance as a convincing, unerring worldview and, implicitly, by optimizing its entropy reducing function.

In addition, rituals have a strong transactional aspect that is not always compatible with theology and official doctrines. They are performed in order to obtain a particular desired effect from an entity that has the capacity to produce it, which also translates into an attempt to bring reality under control, reducing the myriad of possible developments to a strictly defined set of outcomes dependent of the efficient performance of ritual acts. One could argue that the effects of ritual are nor 'real', as the entities in question are not 'real', but that is irrelevant to our theory because religion exists only in the medium of what Luhmann calls 'psychic systems' and their cognitive operations. If religion reduces complexity in psychic systems' perception of reality, then it is efficient, as long as it manages to maintain the value of truth of its own core propositions in the face of perturbance, as mentioned before in Bateson's definition of adaptive systems. That is not to say that religious people live in a fantasy world. Starke and Finke (2000) write in their seminal work 'Acts of Faith' that "*Humans persist in efforts to find ways to gain rewards, to find procedures or implements that will achieve the desired results. Those that don't seem to work will be discarded; those that appear to work, or those that work better than some others, will be preserved. As a result of this process, humans accumulate culture*"(Stark &Finke, 2000, p. 87). This accounts for evolutionary change and it is also compatible with Dawkins'

meme selection theory. Rituals introduce <u>patterns</u>, <u>distinctions</u> (between sacred and profane, pure and impure) and <u>boundaries</u>, thus organizing reality and reducing entropy. Ritual performance further contributes towards absorbing and internalizing beliefs through enactment of new roles and building new identifications (Smith, 2011). Furthermore, countless psychological studies have shown that rituals reduce anxiety and increase performance (Brooks et al., 2016). The idea that humans fear the unknown is certainly not new. Psychic systems respond to uncertainty with anxiety, with the latter motivating efforts to reduce the former and therefore incentivizing the allopoiesis of abstract social systems, such as religion, as well as ritual behavior, religious or not.

<u>Supernatural agents</u> are, according to Sosis, "*beings that exist and operate outside of physical reality, although they typically have impacts on the physical world. They are agents in the sense that they are ascribed actions and motives for those actions*." (Sosis, 2019, p. 426). An excellent work on the subject is Tremlin's 'Mind and Gods' (2006), which explains the emergence of 'God' concepts in cognitive terms. The author identifies two mental tools that were selected for different evolutionary purposes, but nevertheless created the context for the construction of supernatural agents: **Agency Detection Device (ADD)** that tries to recognize the presence and activity of other beings around us, constantly scanning the environment in search of agents, sometimes with minimum or inexistent informational input from the senses and the **Theory of Mind Mechanism (ToMM)** which "*ascribes sentience to agents and tries to interpret their intentions*" (Tremlin, 2006, p. 75). Put in informational terms, this is a tendency to interpret random events, states and features as 'signal' and not 'noise', triggering the necessity to ascribe meaning to it, and therefore to bring these elements under cognitive 'control', reduce anxiety/ increase predictability, as mentioned in the previous section when discussing rituals. These interpretations ultimately solidify into concepts of supernatural beings (gods, ghosts, ancestor spirits, demons, jinn etc.) which are eventually culturally integrated, fixed and transmitted. Moralistic, knowledgeable and punitive gods seem to be associated with increased cooperation, trust and fairness towards co-religionist strangers (Shaver et al., 2016), which also indicates higher levels of perceived predictability (reduced entropy) in the environment/other individuals' behavior.

<u>Myths</u> serve, according to Sosis, to "*provide a contextual narrative for many of the other building blocks of religious systems*", being "*the fundamental form of religious discourse*" (Sosis, 2019, p. 425). In Eliade's view, "*The main function of myth is to determine the exemplar models of all rituals and of all significant human acts*" (Eliade, 1998, p.8). This idea is compatible with this paper's approach, as the author further writes: "*Through myth, the World can be apprehended as a perfectly articulated, intelligible and*

significant Cosmos." (Eliade, 1998, p. 145). Myths benefit from the potential of narratives to connect emotions and memory, also engaging symbols and rationalizations in a process of constructing a perceived role in a greater, more significant ensemble that integrates one's individual existence, thus contributing to the creation and sedimentation of meaning.

Taboos limit the types of possible social engagements, often being conceived as "*anti-rituals*" (Sosis, 2019, p. 425). Some are perennial (the Muslim *haram* on certain types of food) others are temporary (fasting during Ramadan), and they regard a wide range of activities, mostly of a pleasurable nature (else they would not need restricting): sexual activities, social contacts, consumption of certain food and drinks, smoking, gambling etc.

Authority is a structural aspect of religious systems, and refers to the distinction between individuals who claim privileged/legitimate access to knowledge/supernatural agents/other realms and the rest of the faithful who do not enjoy such direct access, which is sanctified (legitimized) by the performance of specific rituals. Authority is also responsible for the regular performance of rituals and observance of taboos, resulting as a stabilizing factor in the system, and also usually organizes the response to perturbances (like the COVID-19 pandemic). Rappaport (1999) suggests that malfunctions of regulatory hierarchies resulting in long-term or abrupt worsening of social and economic conditions lead, sooner or later, to their de-sanctification (usually by decreased participation in the rituals that sanctify them), and eventually replacement, sometimes as a result of prophetic (charismatic) movements.

Sosis (2019) adds **Moral Obligations**, **Sacred** and **Meaning** to complete his eight building block model. On the contrary, he does not consider **afterlife beliefs** as essential, but rather as secondary forms of one or another of the identified building blocks.

Afterlife Beliefs are arguably omnipresent across religious systems. Although this position has been contested, the universality of afterlife beliefs is empirically supported by what is known as the **Terror Management Theory (TMT)**. According to the sociologist Ernest Becker (1973) and the experimental psychologists inspired by his ideas (Solomon et al., 2015), humans are caught in a paradox between the biological instinct of self-preservation and the enhanced cognitive abilities that make them aware of their inevitable death, resulting in existential anxiety (terror). Methods to alleviate such anxiety include raising one's self-esteem by perceiving oneself as a valuable member of society (living up to its norms and standards) or as a part of a significant cosmological narrative, as well as creating a sense of literal (through religious concepts of afterlife for example) or symbolic (through one's life work in arts, politics, science etc.) immortality. Feeling a part of something greater (nation, political party, religious group, terrorist

organization, football team fan club etc.) not only raises our self-esteem and allows us to cope with existential 'terror', but also involves survival through the endurance of the respective entity. Looking at TMT through the conceptual lens of this paper, the source of the anxiety triggered by mortality salience could be identified in entropy, as death by definition increases both real (physical) entropy and perceived (psychological) unpredictability regarding the posthumous 'fate' of the system. Afterlife beliefs can be considered an **adaptation**, providing selective advantages to individuals and/or groups (for example the belief in the survival of the mind implies the existence of immortal supernatural agents that make us behave in a socially responsible manner just by 'observing' our actions (Bering, 2006), or can be rather seen as an **evolutionary by-product** (of death anxiety, like TMT clams, of simulation constraints -the inability of the mind to imagine its' non-existence (Bering, 2002) or of the above-mentioned ToMM). Finally, afterlife beliefs can also be regarded as **memes**, the cultural equivalent of genes, promoting their own continuance, not necessarily to the benefit of the individual or group hosting it (Dawkins, 1976; Stewart-Williams, 2018). Whether they involve personal survival or not, this paper claims that beliefs in some form of posthumous survival are central to religious systems, possibly representing their very *raison d'etre*, as death represents, after all, the ultimate victory of entropy and therefore naturally places itself at the heart of any entropy reducing endeavor.

      In conclusion, although recognized as a valuable starting point for the current paper, there are significant points of contention between Sosis' model and our own (Figure 1):

Figure 1. The Religious Complex System and its building blocks.
(Only the highest level of organization is shown)
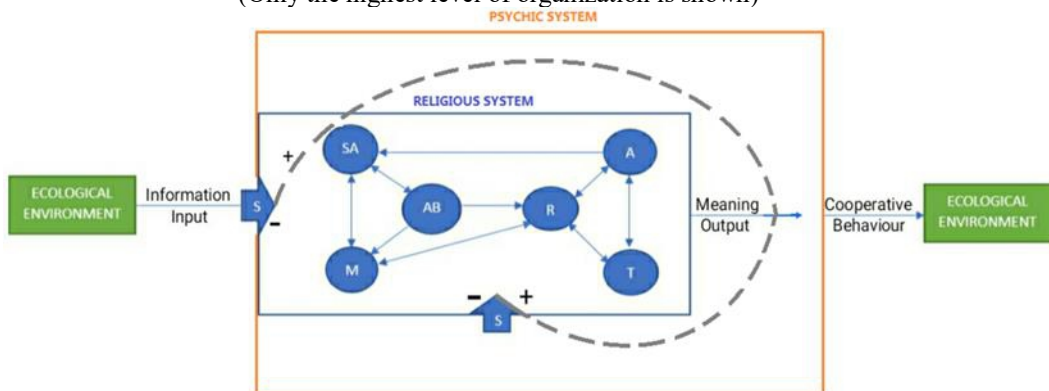
S=stressor/perturbance
SA=supernatural agents
M=myths
AB=afterlife beliefs
R=rituals
A=authority

T=taboos

- Implies a negative reaction to stressors that shows the fragility of the system (a concept that will be discussed in a future paper)

+ Implies a positive reaction to stressors that leads to the reinforcement of the system by solving cognitive dissonances and further increasing the output (meaning)

1. Sosis considers the individuals as part of the religious systems. This paper gravitates towards the Luhmannian approach of considering psychic systems (individuals) as the medium (carrying substratum or environment) for the mental operations (and their interactions) constitutive of religious systems.

2. Connected to the previous point, Sosis does not mention what the building blocks are composed of, merely stating that "*complex adaptive systems consist of categories of elements that combine to create the system*" (Sosis, 2019, p. 424). What are those elements if individuals are the agents of the system? The difference between agents and components is, in computer science terms, that "*the component is apt to be the entity of computation; however, the agent is not only the computing entity, but also has such characters as mobility, intelligence and mind properties etc.*"(Li et al. 2006, p. 546). The model proposed here requires components, not agents (individuals are the ones producing its components –computations- while being part of the environment).

3. For Sosis (2019), the input is represented by the energy introduced into the system through the action of individuals under the form of rituals. This paper claims the input to be exclusively informational, as religious systems are abstract and not real.

4. Sosis, as well as most cognitive scientists that study religion, considers the output to be the emergent cooperative behavior that represents an evolutionary advantage, leading to better chances of procreation and consequently perpetuation of the religious system. This paper claims that the output is represented by **meaning**, which cannot be considered as one of the building blocks, but as an <u>emergent resultant</u> of the system. As previously mentioned, meaning can only represent an output if we consider psychic systems as part of the environment, because an output is by definition a unidirectional transaction between the system and its environment (P4). It forms the base of identity, cooperative behavior, individual motivation, emotional engagement etc.

5. Both the **sacred** and **moral obligations** are not building blocks of the system. Moral obligations are not specific to religion, as they originate and operate within various social contexts. In any case, they are not central to religious behavior and beliefs, but rather derive from

meaning, as they always have to be consistent with the worldview that an individual/group adheres to, usually support cooperative behavior and are submitted to frequent changes and revisions brought by historical circumstances, decisions of religious authorities and generally strong perturbances. Even though it can be sanctified, morality has a much higher mutability compared to core aspects of religion (Rappaport, 1999). The sacred, on the other hand, is a reference for signal/noise distinctions that is specific to religion, being identified by numerous authors as the main feature of religious life. In the words of Durkheim "*religion is a unified system of beliefs and practices relative to sacred things that is to say, things set apart and forbidden*" (Durkheim, 1915, p. 47). While Sosis is right in mentioning that: "*In the context of religious systems, to say that something is sacred is to suggest that it has particular emotional valence for individuals living within that system*" (Sosis, 2019, p. 426) also pointing out that sanctity is created by ritual, it is nevertheless important to distinguish between the ontological category of building blocks and the epistemic category of reference systems. The former are structures 'imposed' on reality by performing and organizing signal/noise distinctions, while the latter define the context within which these distinctions are made. It is certainly not difficult to match the term **hierophany**, popularized by the work of Mircea Eliade (1957, 1987, 1998) with this approach: in his 'Encyclopedia of Religion' (1987), the author defines it as a "*manifestation of the sacred […], a reality of an entirely different order than those of this world becomes manifest in an object that is part of the natural or the profane sphere*" (Eliade, 1987, p. 313), further emphasizing that "*whenever the sacred is manifest, it limits itself. Its appearance forms part of a dialectic that occults other possibilities […] In other words, a hierophany always implies a singling-out*" (Eliade, 1987, p.314). If hierophanies, as Eliade claims, "*directly affect the situation of human existence, the condition by which humans understand their own nature and grasp their destiny*", altering "*the fundamental structures of space and time*" (Eliade, 1987, p.315), it is because they provide the human existence with meaning, which emerges from the signal/noise distinctions operated in the fundamental dimensions of it, space and time, reducing their perceived entropy (chaos) through the self-limiting aspect of the sacred.

6. **Afterlife beliefs** are regarded as an essential and universal part of religious complex systems and can thus be considered as an independent building block, constantly interacting with others, primarily myths, rituals and concepts of supernatural agents.

The scheme presented in Figure 1 should be regarded, however, as no more than a working theory. The complexity paradigm this paper subscribes to involves porous boundaries, intractable feedback loops and a number of subsystems that continuously change to preserve the core identity of the system.

Conclusion

Complex systems are sets of elements that manifest such a high level of interconnectedness that changes in their components, causal forces, variables or inputs result in disproportionate changes in the emergent behavior of the system and its output, a property called non-linearity. The complex systems that are of interest to this paper are also abstract, open and adaptive being both made of information, exchanging it with the environment, and changing as a result of experience.

It has been proposed here that religions are complex adaptive systems, and that their basic components are signal/noise distinctions, which interact and coagulate at different levels of network organization into nodes and clusters of nodes, such as sacred symbols, and subsequently into six building blocks: rituals, myths, taboos, supernatural agents, authority and afterlife beliefs. The interactions between these components are complex and non-linear in nature, resulting in the emergence of meaning. These processes take place within the psychic system (Figure 1), which 'creates' allopoietic systems (such as religions), and uses their output (meaning) to fuel their own entropy reducing operation. This ultimately motivates cooperative behavior and leads to a further elaboration of meaning by communication. The sequence is fuzzy, as there is permanent feedback and reverse (as well as complex) causal relationships between these levels in all directions.

Meaning, the cornerstone of this theory and output of the religious system, is seen as the catalyst of assembling reality into the 'ordered whole' that Geertz mentioned. Identifying our existential locus within the axiological topology of this newly created, non-physical and very human dimension of a universe imbued with coherence, purpose and significance, as well as maintaining the anxiety buffering illusion of both this world's comprehensibility and our capacity to gain control over it are the main benefits of a meaningful holistic perception of reality.

In conclusion, religions are understood as information organizing, abstract allopoietic complex systems, while ecological, psychic and social systems, as well as other abstract ones, act as their environment, as well as the object of their function, namely to decrease the environment's (perceived) complexity.

Despite numerous points of contention with respect to previous work in the field, this paper promotes the utility of Complex Adaptive Systems

Theory towards the study of religions, although 'theory' is perhaps an improper term to describe what will hopefully represent a new paradigm in social sciences and humanities, as predicted by the Gulbenkian Commission.

While there is still much to clarify concerning the applicability of modeling, as well as the applicability of the more mathematical aspects of complexity to social sciences and humanities, there is little doubt that this approach would help counter reductionism, put an end to some of the sterile definitional controversies that have historically plagued religious studies (Sosis, 2020) and, above all, provide a broader, contextual perspective in a field that has ultimately produced so little progress towards the etic and emic understanding of religious phenomena. Complexity could help 'simplify' religions.

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ESJ Humanities

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Finding 'Reasons to Stay' Amidst Issues of Well-Being: A Case Study of Two Underserved Communities in Colombo

Abstract
This paper attempts to explore the factors that attract and encourage individuals to live in low-income neighbourhoods in Colombo in spite of the many socio-economic issues that are associated with such communities. Data was collected through 30 face-to-face in-depth interviews with residents from two underserved communities consisting of individuals with different migration experiences. The collected data was then analysed using the three-dimensional well-being model introduced by Pouw and McGregor (2014). The study revealed a situation of material and relational well-being intersecting to create a more practical kind of well-being in the communities studied. Of the two, material well-being had the strongest power to attract and retain residents in the neighbourhoods while relational well-being played a supportive role in terms of pulling people into the community. Subjective well-being, on the other hand, was identified as the strongest reason with a capacity to push people away from the community. However, this single push factor was not strong enough to overpower the pull effect of material and relational well-being, particularly because of the residents' low-income status. The material benefits of living in the location facilitated by social ties offered by the neighbourhood kept these residents attracted and attached to these underserved communities.

Keywords: Migration, low-income settlements, well-being, Sri Lanka

Introduction

Migrating into cities has always been viewed as a more lucrative option throughout history across the globe. Colombo city is no exception in this regard. Historically, migration has contributed to growing numbers of residents in Colombo and this trend is likely to become even more significant in years to come with large numbers of rural poor coming into Colombo looking for more lucrative possibilities (Arularasi and Alikhan 2015). The highest number of lifetime internal migrants found in Colombo district is 26.5 per cent; among them 42.8 per cent of migrants move to Colombo for employment (Department of Census & Statistics 2015).

Colombo has been the central hub of political, economic, and administrative affairs of Sri Lanka since 1815, when the British brought the entire island under single administrative control. As in many countries in the Global South, low-income neighbourhoods in Colombo have their origins in the Colonial Period. The British colonial officers made Colombo a hub of economic and administrative functions, which increased employment opportunities. The expansion of the port in 1883, and its associated industries, was a primary instrument that stimulated the rise of a particular clustering of working-class tenements and small businesses (Van Horen, 2002), . A survey conducted by the Colombo Municipal Council (CMC) and the Sevanatha Urban Resource Centre in 2011 studied 77,612 families living in 1,614 underserved settlements in Colombo. According to a report by Sevanatha (2013), these low-income neighbourhoods contain nearly half of Colombo's population. Since the British period, various attempts have been made to find solutions to issues of congested low-income settlements in Sri Lanka. Unhealthy and overcrowded living standards of the low-income working class have grabbed the attention of the CMC since 1910 (Perera 2008).

This paper attempts to explore the factors that encourage individuals to continue living in these low-income neighbourhoods in spite of the overcrowded living standards that have been recorded by many researchers as leading to certain difficult life situations (D'Cruz, McGranahan, and Sumithre 2009; Horen 2002; Silva and Athukorala 1991). The paper opens with a discussion on the living conditions of people in underserved communities followed by a discussion of the methods of data collection employed in the study. The discussion of findings, guided by Pouw and McGregor's (2014) well-being model, is presented under three main titles, namely material well-being, relational well-being, and subjective well-being.

Living Conditions of Low-income Neighbourhoods:

Underserved communities in Colombo have been recorded to be laden with problems such as drug abuse and dealing, petty theft, abuse of alcohol, frequent verbal and physical fighting and other deviant behaviours. These

problems are looked upon by residents in these communities as threatening the educational opportunities available to their children and the general well-being of all residents (Lakshman, Ekanayaka, and Lakshman 2016; Lakshman, Herath, Alikhan, and Ekanayake 2016). In fact many residents mention a desire to move out from these neighbourhoods. In spite of this desire, some researchers highlight that residents are reluctant to move out from these neighbourhoods even when they are offered free housing or houses at subsidized prices by the Government (Lakshman, Herath, Alikhan, and Ekanayaka 2016). Their dissatisfaction about such kinds of relocation is mostly related to the fact that they feel socially disjointed when their former social relations get disrupted due to relocation/resettlement. This indicates that residents in underserved communities enjoy strong social bonds.

People in low-income neighbourhoods individually and collectively make various attempts to meet essential needs in their everyday life. Roy (2011) considers the slum as a place of collective action. For Roy (2011: 223) the slum is "a terrain of habitation, livelihood, self-organization and politics." In certain places, everyday engagement and interaction among dwellers in low-income neighbourhoods take place for common tasks such as basic infrastructural improvements, security and work (Amin 2013).

The congested nature of urban underserved neighbourhoods, a condition never appreciated by residents, creates the background for a unique kind of social networking. In contrast to wealthier neighbourhoods, interaction between individuals in low-income neighbourhoods is hard to avoid in poorer parts of cities where space is typically limited. Bayat (2008: 180) outlines "proximity" and "interaction" as factors which help different people to socialize with each other. However, generally, underserved settlements are looked at as problematic places, which contain dystopian elements, such as prejudice, violence, drugs, and organized crime (Blau 1960; Brennan-Galvin 2002; Felbab-Brown 2011; Lakshman, Herath, Alikhan, and Ekanayake 2016).

The contrast between the dystopian elements and the existence of strong social bonds within the same community needs some further clarification. Even though slum dwellers are capable of providing for themselves on their own to some extent, working collectively through residential associations and/or community-based organizations help them sustain as individual family units and as communities. Local leaders and politicians manipulate this unstable economic situation coupled with strong communal ties to further their individual and party agendas. The dystopian elements are the result of this kind of manipulation. Congested physical environment and the marginalized social structure of these communities encourage its youth to engage in the abuse of drugs, violence and crimes. As a result emotion and antagonism develop as parts of everyday slum culture.

Even under these problematic conditions, everyday engagements in these neighbourhoods are observed as leading to well-being and happiness. As pointed out by Datta (2012), the commonly found negative perceptions of underserved settlements fail to recognize the valuable characteristics of such places. Well-being and happiness are broad and vague notions which differ according to people and cultures. Gough and McGregor (2007: 4) state that "well-being is an umbrella concept, embracing at least 'objective well-being' and 'subjective well-being'." Objective well-being is determined by factors external to the respective human community. In contrast, the community's internal characteristics and features determine subjective well-being. Both lead to happiness and are mutually dependent. We all have different meanings for happiness, pleasure, being engaged, and life satisfaction. Well-being and happiness are essential for every human being for ensuring psychological and physical well-being which help to reduce health risks and enhance the lifespan. The more common view is that well-being and happiness are luxurious conditions of life experienced exclusively by wealthy people. People living in low-income neighbourhoods also experience well-being and happiness in everyday life. For example, although per capita income in Bangladesh is low, the level of happiness in Bangladesh is higher than in many other countries including some developed nations (Camfield, Choudhury, and Devine 2009). Another comparative study illustrates that the average life satisfaction was fairly negative among Americans but positive for street inhabitants in Calcutta (Biswas-Diener and Diener 2006).

Rojas (2005: 261) describes that many factors influence overall quality of life and happiness. He states that different people have different definitions of what a happy life is. However, happiness depends on socioeconomic and demographic conditions of a person. People consider that higher levels of income are closely associated with higher levels of well-being as it leads to material accumulation. However, studies show that income does not have a strong influence on well-being and happiness of people (Diener and Suh 2003; Fuentes and Rojas 2001). Another study concludes that income has a close interaction with happiness in developing countries like Bangladesh (Mahmud and Sawada 2018). This study suggests that material well-being should also be uplifted in order to enhance happiness.

Pouw and McGregor (2014) argue that economic growth alone does not improve well-being. In their three dimension of well-being intersecting model, they highlight that other aspects of well-being may suffer when material aspects of well-being improve. Pouw and McGregor (2014: 16) define human well-being as "a state of being with others and the natural environment that arises where human needs are met, where individuals and social groups can act meaningfully to pursue their goals, and where they are satisfied with their way of life." According to this definition they explore well-

being through three important aspects, namely material, relational, and cognitive/subjective aspects of people's needs and goals in life (Figure 1).

Figure 1. The three dimensions of well-being intersecting
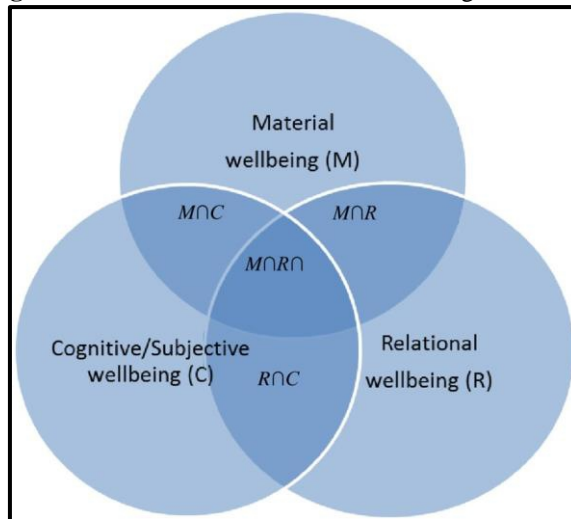
Source: Pouw and McGregor (2014)

The three aspects of well-being can be distinguished according to the above Venn diagram. People's needs and goals may not be satisfactorily fulfilled by means of material (M), relational (R) or cognitive/subjective (C) taken separately. Some people may be satisfied about their life if two of the above aspects are fulfilled, i.e., (M∩R) or (R∩C) or (M∩C). However, Pouw and McGregor (2014) illustrate that most realistic well-being is found through a combination of all three dimensions (M∩R∩C).

Methods of Data Collection:

Two underserved settlements with relatively high numbers of migrants were selected for this study, namely Sammanthranapura Grama Niladhari Division from Colombo Divisional Secretariat Division and Wadulla Grama Niladhari Division from Kolonnawa Divisional Secretariat Division (see Figure 2.) These sites consist of multi-ethnic, multi-religious people with different migration experiences such as interurban, intra-urban and rural-urban. These migrants have arrived in these sites voluntarily or involuntarily as relocatees during different periods due to various relocation projects. 1976 city development project for the Non-Aligned Summit and the Peliyagoda bridge expansion project of 1990 are such projects that led to the development and expansion of the two settlements under discussion. Findings reveal employment, marriage, accompanying family members, and relocation as key reasons that brought families into these lands.

Figure 2. Study sites
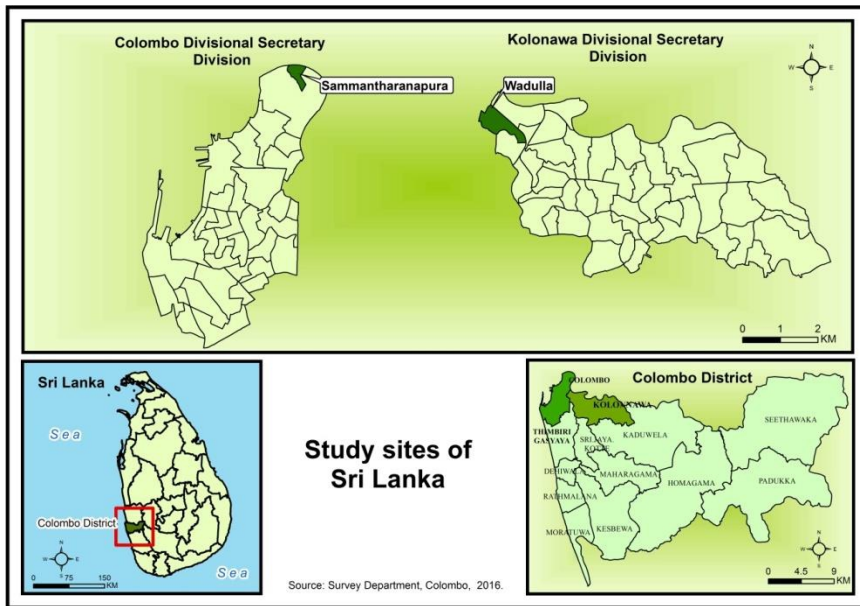
Source: Survey data

Data for this paper was collected mainly through interviews. The activity was ethically cleared[1] before fieldwork and informed consent received from respondents. Many authors have highlighted benefits of using interviews in a research study of this nature. Qualitative approaches are seen as significant in understanding people's experiences of well-being (Camfield, Crivello, and Woodhead 2009). Interviews have a significant potential to dig deeper and gather more appropriate information when compared with other data collection methods in the qualitative trajectory. Interviews provide space for ordinary people, especially the marginalized, to freely explain their life situations in their own words (Cook 2008; Kvale 2006). It is also a notable method to understand the ways people live in and create their day-to-day lives and social world (Warren 2004). Atkinson (2003: 567) expressed that "a life story narrative can be a valuable text for learning about human endeavour, or how the self evolves over time, and becomes a meaning maker with a place in society, the culture, and history."

Thirty face-to-face in-depth interviews with a purposively selected sample were employed in this research. This paper explores the nature of well-being and happiness in the two selected underserved communities in Colombo. The research approached well-being and happiness through the

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[1] Ethics clearance for engaging in research with human participants was obtained from an independent committee appointed by the Centre of Migration Research and Development.

three dimensions of the well-being model introduced by Pouw and McGregor (2014). Questions were formed to address each of the three dimensions and answers received were thematically analysed according to the same three dimensions/ themes. The researchers explored the material dimension of respondents through housing condition, physical environment, and tenure. Subjective well-being was understood through feelings of shame, fear, and tension. Finally, the relational aspect of well-being was understood through social and family networks.

The Study Sites:

Wadulla Grama Niladhari Division is located in Colombo North, near the Kelani Bridge, which is one of the main entrances to Colombo. Figure 3 highlights the neighbourhood and its prominent features which are demarcated by natural and social boundaries. The northern part of this neighbourhood extends to an abandoned railway track and the southern part goes up to a canal. In addition to residents' settlements, this area has some important government institutions such as the Sri Lanka Atomic Energy Board, Automobile Engineering Training Institute, Kelanitissa power station complex and combined cycle power plant.

Figure 3. Map of Wadulla Grama Niladhari Division
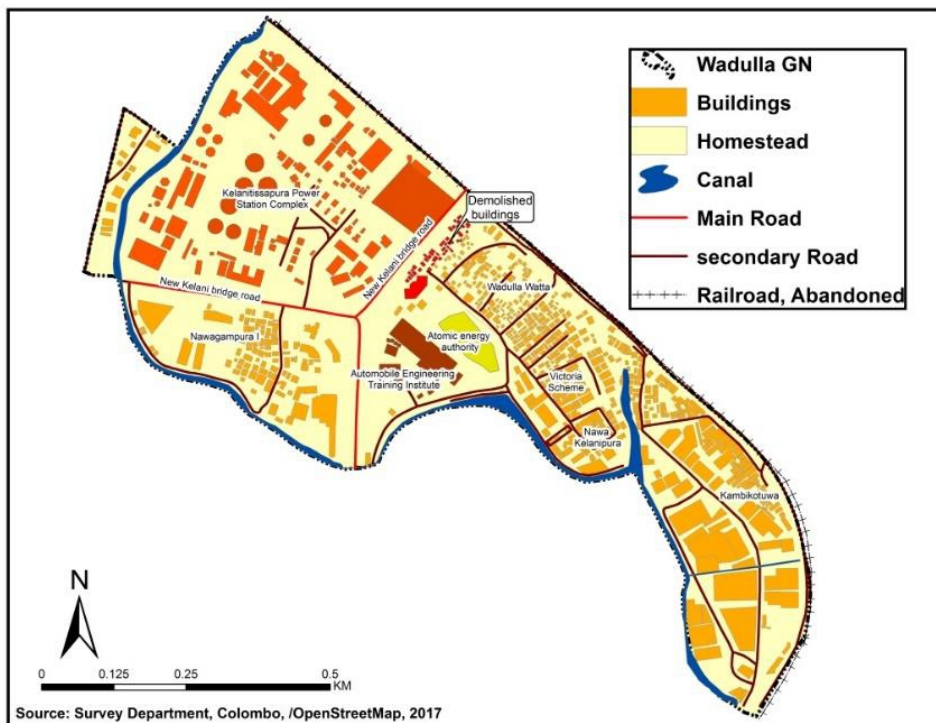
Source: Survey data

Earlier, this area looked like a forest; thus people referred to it as "Wadulla" (meaning forest in Sinhala). In 1964, there were five Tamil families, five Muslim families, and around 30 Sinhalese families living in this neighbourhood. Over the years people from in and out of Colombo migrated to this neighbourhood. Currently, five to ten perches of land can be categorized as homestead land. This area is regularly affected by flooding of the Kelani River partly as a result of many environmentally sensitive places including the canal been encroached and covered by concrete to fill-up for building houses. Such illegal encroachments help create much needed space/land for building or expanding houses. During floods residents are either forced to live in the upper floor of their house or to move temporarily to safe places.

Sammanthranapura Grama Niladhari Division is located in Mattakkuliya adjoining Kelani River in Colombo 15 (see Figure 4). This settlement was established in 1976 for people who were evicted from their places of residence for infrastructural developments that took place for the hosting of Non-Aligned Summit. The name Sammanthranapura derived from 'Summitpura', literally meaning 'the town where the summit was held'. Earlier, this area was a marshy land and it was filled with debris/garbage when it was given to evicted people. More than 1000 families were evicted in this manner for the Summit and they moved to various areas within Colombo. Sammanthranapura is one such settlement.

Figure 4. Map of Sammanthranapura Grama Niladhari Division

Source: Survey data

According to the Grama Niladhari, in 2017, this neighbourhood consisted of around 2000 families. Among them approximately 700 families lived in encroached lands. This multi-ethnic community consists of people from all main ethnic groups in Sri Lanka, with a Sinhalese majority.

Findings and Discussion:

Data generated from in-depth interviews were subjected to a manual thematic analysis to identify the material, subjective, and relational well-being of the residents. Data was analysed to see if the said well-being aspects were significant in the person's decision to migrate to the selected communities and to remain there.

Material Well-being:

One of the key factors that attract migrants to these underserved neighbourhoods is the "location". Both sites have prompt transport facilities which make it possible for the residents to comfortably reach any destination for employment and other services. The majority of residents consider Wadulla the "best place for poor people" (*Nethi beri ayata hondama thena*)

because of various factors, particularly the economic benefits of living in the location. Researchers working in similar underserved communities in other locations have made similar findings (Mitra 2010; Owusu, Agyei-Mensah, and Lund 2008). Employment, transport facilities, affordable house rent, and daily consumables are some key elements that encourage low-income people to move into these neighbourhoods.

> *We looked for a house in many places. According to our financial status at the time, this was the only house we could afford. We didn't get any house in the other areas. The rent was low in this area only. If we want to rent a comfortable house, we need to pay around 17,000 rupees (Female, 34 years)*

The location makes it possible for residents to get informal employment in nearby warehouses, container yards, factories, and markets. Most of these places can be reached on foot from the locations under study. Some other places like the Peliyagoda fish market and the Pettah Manning Market, which are located five to six kilometres away, can be reached easily by public transport. According to the Grama Niladhari, around 75% of Sammanthranapura residents are labourers and their livelihood depends on the informal sector.

> *I don't think big. I just want to live in peace with the children. If there is a house and a good job, that is all I need. I can provide for my family with a good job. (Male, 43 years)*
> *There are lots of jobs available. Like packaging work… this and that… There are lots of jobs around here, which I am planning to do. (Female, 38 years)*

Some residents opted to stay in these neighbourhoods with the intention of educating their children in Colombo. Having an address in Colombo opens up the possibility of educating one's children in a "Colombo school" because, in Sri Lanka, schools are allocated based on the distance from home to school. Preference for a school in Colombo by residents of underserved communities, due to the better physical and human resources available in these schools, has been recorded previously (Lakshman, Ekanayaka, and Lakshman 2016).

> *We have our own house elsewhere. We have rented this house here. Everyone close to us is far away from us. They stay in Wattala and so on. We are living here because we want to educate our children. (Female, 38 years)*

Some residents were attracted to the material well-being that was provided in their current residence to the extent that they refused to move out of the current location even if the Government provides them housing facilities.

> *I don't like to live in the flats given by the Government. It will be like poultry shed... they will build multi-storey buildings and we cannot live there. If they force us to leave from here, we will leave only if they provide compensation for this place. (Male, 44 years)*

Three housing patterns can be observed in these neighbourhoods, namely 1) permanent; 2) semi-permanent; and 3) temporary. The floor area of these houses range from 150 square feet to 600 square feet. Some dwellers build two storeyed houses which keeps them safe during floods. The majority of houses have pipe-borne water, electricity, and latrine facilities. Public water and toilets are also available for those who do not have these facilities in their houses. The majority of respondents live in their own houses. There are various types of documents that people highlight to claim house ownership. Only a few respondents have a housing card (*Kudumbi patha*) issued by the government and the rest of the people claim ownership through the tax number, i.e., a "T" number (which is a temporary number issued by the Grama Niladhari to get electricity and water supply), and utility bills.

Residents' satisfaction and happiness about house ownership and the general location seemed to differ based on these different housing types and conditions. For example, those with T numbers were concerned about their house being demolished one day and were, therefore, keen to move out of the neighbourhood.

> *We paid little by little… we purchased it for 250,000 rupees and I did some repair works. If they say T…. this is T….. There are three houses here with T numbers. For these riverside houses, they have given this T number. So, they will demolish. (Male, 42 years)*

The above example of 'T numbers' also depicts the way in which these people continue to be pushed around against their will by government policies. Even though they are likely to be paid compensation when their houses are demolished, it is very unlikely that they will be offered the worth of their current house or if they will be able to settle in a location as convenient as the current one.

Residents with their own houses, except the ones with 'T numbers, seemed relatively happy with their housing arrangement and satisfied with the benefits offered by the location. Previous researchers also have found house ownership to provide an anchor in the community for the respondents

(Carpenter, Daniere, and Takahashi 2004; Glaeser and Sacerdote 2000; Sampson, Raudenbush, and Earls 1997). The present research also found house owners to be happier and have a stronger hold in the community.

> *This is my own house. When we were living in Wattala, we had to search for money to pay the monthly house rent. The income… Now, I am thinking that... it is good we came here... be it a good place or bad place. We have a place to live. (Male, 67 years)*
>
> *I was born in one place and now living in another place. But, actually I love this place very much. Because, the people are so good. There are people who live in the same place for 50 years, but they don't even know their neighbours. In my case, you will not be able to find a single person here who doesn't know me. If a person doesn't know me here, he must have been born yesterday or come to this place yesterday. (Male, 60 years)*

Figure 5. Housing quality in community

Significant numbers of residents live in rented houses. There are two systems of rent in practice. The monthly rent system requires people to pay advance money for two or three months and then pay the promised rent every month. When the tenant leaves that house in one or two years the landlord has to return the advance money after deduction of any dues. The other system is the "long lease" (*Baddha*). Here, the tenant pays a bulk of money at once and pays a small amount as rent (this rent is very low compared with the current rent rate in the area). In most cases, the landlord uses this money to either invest in some business or to settle debts. The landlord has to return that bulk

amount to the tenant at the completion of the agreement period. Residents living in such leased houses were keen to have their own house.

> *We have taken this house by paying 400,000 rupees and we are paying 1,000 rupees rent per month… If we want to be happy we need a house and a vehicle. That is the only happiness. (Female, 43 years)*

House ownership, for these residents in underserved communities, is not simply a matter of owning a house or not. It is a deciding factor that determines if a resident's name will appear in the voters' list. The resident has to provide documents to prove house ownership or a no objection letter from the landlord to the Grama Niladhari (GN)[2] to ensure entry into the voters' list. In general, landlords are reluctant to give no objection letters to tenants because of a worry that the tenant may take over the house after residing in it for several years. Due to this same reason landlords do not usually extend the lease contract for more than two years. This necessitates the tenants to find a house every two years. Residents are denied several facilities such as school admission, and certificates of residence from the Grama Niladhari if their names do not appear on the voters' list.

> *We do not have voting power – we have not voted for a long period. House owners panic that tenants may claim house ownership if they live in the house for 5-10 years and get GN certification/letters for this address. Therefore, no house owner allows the tenants to take any type of letter with this address. (Female, 47 years)*

Residents in these neighbourhoods enjoy not only affordable house rent but also daily consumables at cheaper prices. This is another factor which motivates people to remain in this type of underserved settlement.

> *In this neighbourhood you can get everything cheap for the amount that you have in your pocket. You can even get half a coconut, green chillies worth Rs. 10, ½ ounce milk powder. In this place, anyone can get their daily needs at affordable prices.* (*Male, 65 years*)

A migrant mother had the following to say about affordable prices that match their daily needs:

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[2] Government official in-charge of a Grama Niladhari division.

> *There is something affordable to eat here. In Kurunegala, we have to buy a whole packet of milk. Here we can buy some milk powder for 20 or 50 rupees. (Female, 44 years)*

There were some respondents who felt that the prices in Colombo are high and difficult to manage. However, these comments were made mostly based on a comparison between the "village" and "city" life with a sense of nostalgia. For example, the woman who made the following statement has moved into this neighbourhood after her marriage and has had to live in her husband's house built by his parents. This is more a case of "inheriting a house" rather than voluntarily opting to live in this location.

> *In terms of differences... Our village was good. For everything... we didn't feel any difficulties. In Colombo, people face difficulties. The price levels are high here. Those things are not a problem in the village... (Female, 39 years)*

Hitherto, we examined the pull factors that stimulate people to move and live in these neighbourhoods. Residents were able to "find" enough "material reasons" to confirm their desire to migrate to and stay in the neighbourhood. Even with issues such as house ownership, inability to get their names into the voters' list and possibilities of forced relocation, these residents were satisfied with the material benefits offered by the location.

Additionally, there were some other negative elements, not directly connected with house ownership that created concerns for the residents about their material well-being. Lack of infrastructure facilities such as a proper drainage system and sub-roads were mentioned by many respondents during interviews. These infrastructural issues are usually associated with further problems such as diseases and pollution (Rashid 2009). Respondents were of the view that the living conditions of this neighbourhoods will drastically improve if the Government paid proper attention to infrastructural issues.

> *Our only hope is that the Government would fulfil its responsibility towards us by making and maintaining the roads, drainage system etc. If they do these things properly... that is enough. (Male, 44 years)*
> *Lack of development is the problem... when we enter into this area... you can see open drains... It creates some odd feeling... other than that... the flood. If proper roads are available... the problem will be solved. (Male, 44 years)*

Figure 6. Environment during the rainy season

In spite of these infrastructural problems that create various health and other difficulties for the residents (See Figures 5 & 6 for quality of housing), they continued to appreciate the material benefits brought in by the "location". The following statement by one of the respondents clearly shows that material well-being is the strongest factor that keeps them attracted to the neighbourhood.

> *We don't want to stay here continuously. Even now we are searching for a suitable house. Recently also we tried to move from here. If we can get the income correctly according to our needs, we have the idea to change the place. (Female, 38 years)*

The resident is clearly stating that her current location is the best place for them given their 'current' income. Easy access to informal economic activities and the low cost of living seemed to be the two main factors appreciated by the respondents in terms of their material well-being.

Relational Well-being:
Statements by many respondents reveal that they enjoy strong social networks with family and friends. However, the extent of community engagement and strength of social networks are decided by dwellers' migration period (Carpenter, Daniere, and Takahashi 2004) and their employment. Non-migrants' and informal sector employees' networking ability is higher than that of migrants and formal employees. Non-migrants and informal sector employees seem blessed with a more advantageous position to ensure possibilities of anchoring themselves in the community strongly (Carpenter, Daniere, and Takahashi 2004) than their migrant, formal sector employee counterparts. Non-migrants have the advantage of knowing

the area and community well while the informal sector employees have the (relative) advantage of time availability to socialize with fellow community members. People use their social networks for various reasons such as child care, finding jobs (particularly informal labour work), accessing instant loans, getting support in emergencies, organizing religious festivals and New Year celebrations. Migrants also gradually adapt to this atmosphere and mingle with other community members in the neighbourhoods.

> *When I first came here, I was unaware of their way of life. Now I have a better understanding. When I started constructing the house I actually realized how helpful they were. (Female, 44 years)*

The above statement by a female migrant indicates that migrants and non-migrants gradually mingle with each other over time. Both research sites contain ethnically and culturally diverse groups of people and in some cases their social networks cut across ethnic and cultural boundaries. Inter-ethnic marriages are also common and they stimulate inter-ethnic coexistence.

> *No, nothing like that. No discrimination. Nothing like that. We mingle with Muslims, Sinhalese and Christians. Nothing like that. If we don't have any problem with anyone, we can have a good life anywhere. (Male, 44 years)*
> *The people in the area like us very much. If we say that we are going to move out from this place, they will plead with us not to go. People are that much closer to us. Even though they are not our relatives, they mingle with us in such a way. (Female, 46 years)*

However, some respondents, particularly those who have migrated from villages, struggle to come to terms with the lifestyle of these communities. This is clearly a case of migrants not being able to anchor themselves in the community due to the contrasting lifestyles in urban and rural settings (See Figure 7 for how members of the community gather for festive celebrations and cleaning of the surrounding area).

Figure 7. Cultural and social life

We have to be little cautious as well, because it will be dangerous for us to mingle with certain people. (Female, 33 years)
Even now... this place... I don't like it. The people here are not good. They don't have the willingness to help others... not like our village people. If you have a problem, the people in the village come quickly to help… The people here are not friendly, not suitable to associate… I don't know any good thing here… Even during an emergency situation, no one here will come to help. The people in this place are like that (Female, 36 years)

Likewise, people in formal employment too had practical difficulties of engaging in social relationships largely due to time constraints imposed by their employment. Furthermore, the guarantee of a fixed income that comes from formal employment may also be creating a weaker need/ desire to integrate with the community.

I don't waste much time here. I go to work at 8.00 a.m. in the morning.... I stay at home only on Sundays. I don't have much spare time… I cannot say that all the people living here are not good. Good people also live here. Everyone takes care of their own business and stay. We also live here. We don't mingle with others that much here. We go to our work and come back home. That's it. (Male, 44 years)

There was clearly a gendered dimension to social relationships in the two locations. Women were sceptical about forming widespread social

networks across the community. They preferred small-scale relationships which were formed with, for example, their immediate neighbours. Such neighbours would come to their aid for childcare, money borrowing, kitchen help etc.

> *They come to help in emergencies. I am alone in the afternoons. Husband is away, working. If someone from outside comes and shouts here, they will come and silence him… They will come to my aid. (Female, 44 years)*

This pattern was identified by previous researchers too (Lakshman, Herath, Alikhan, and Ekanayake 2016). On the other hand, men were more concerned about forming wider relationships that ran across the community. Such relationships took the form of community associations.

> *If you want to create unity among communities... we have to start a society with at least four people... a society in name only... regardless of whether it functions or not… We have to use a popular person to initiate a society. So, the old aged people stay behind us. Also, we need to form a sports club by using the youth. So, the youngsters are also behind us. Thereafter, a tuition centre for the kids. So that the kids also come to our side. So, the community comes under our control and they will listen to what we say. Also, we have to do something for them. Rather than running a society for fun, we should do something. (Male, 60 years)*

Respondent's views were divided on how their social relationships were useful for their well-being. However, even the one's holding negative attitudes about their social relationships did not bring it up as a reason for wanting to move out of the community. Those who were not appreciative of the kind of relationships that were possible in the community would keep to themselves and continue to co-exist in the community without forming strong relationships. "No one tells anything to us. We earn and eat. We don't depend on anyone" is a statement by a 67 year old male respondent that clearly depicts this attitude. People possessing this kind of non-integrative attitude seemed "afraid" to form relationships due to the subjective assessment they had about their fellow residents. The widely known violent nature of people in these underserved communities seemed to create this reluctance towards forming social relationships.

Subjective Well-being:
In both neighbourhoods, unlike with material and relational well-being, people struggle with subjective well-being. Here, subjective well-being

can be interpreted as a type of psychological stress experienced by the residents as a result of the social and physical surrounding in their neighbourhoods. People feel uncomfortable about their lifestyle due to many factors. Some people are not satisfied with their house, especially those living in temporary and semi-permanent houses. They always attempt to upgrade their housing condition but this is very difficult to achieve with their income. This is a common concern pertaining to their physical environment. Some people are not satisfied with their social networks, i.e., the social environment. They often complain that the kind of social environment in which they have to manage gives a bad impression about them to the outside world even if their house looks nice.

> *The children go to school. They should be able to go on the road. We feel like we are prisoners. Our children should have the ability to live freely. That is my expectation. We may just live for a few years and then die. Our children will have to live afterwards. (Male, 43 years)*

Having to live in a neighbourhood with unwelcome subjective weel-being can have a detrimental impact on people's self-esteem (Suh, 2003). People who were not comfortable with their physical and/or social environment preferred to remain hidden from their relatives and friends; that is, they were embarrassed to bring friends and relatives to the house. Even the children were reluctant to bring their friends.

> *Even my children tell me to plaster this house. They say that they are unable to bring their friends here. (Female, 39 years)*

Urban underserved communities across the world have a reputation for violence and criminal activities (Blau 1960; Brennan-Galvin 2002; Felbab-Brown 2011; Lakshman, Herath, Alikhan, and Ekanayake 2016). Respondents from the two study locations commonly complain about underworld thugs, gangsters, and illegal drug dealers and abusers. Activities of gangsters are much higher in Wadulla than in Sammanthranapura. In the early 1980s, notorious underworld figures and gang leaders have lived in Wadulla and their reputation is still remembered by non-members of the community. Whenever "visiting" these communities is brought up, people still make reference to these incidents to discourage the visit.

> *Nowadays, there are no gangsters and thugs like those days, but still outsiders have bad impressions about this area. That's why decent, educated people will not remain here. People go abroad and try to earn money to move from here to other places like Wellawatta, Colpetty or Bambalapitiya (Female, 74 years).*

Illegal activities in these neighbourhoods sometimes lead to physical fights which end up in shooting or stabbing. Illegal drug dealing is one key factor causing this kind of gang fights.

This place is not good. Some people here kill other people for money. Even hiring a three-wheeler to get here is challenging sometimes. They refuse to drive here because of this reputation. If we say "Mattakuliya", no one will come. (Female, 39 years)

Many respondents with children are under pressure about the future of their children. They feel this environment, both physical and social, are not suitable for their children because it restricts their potential.

It is difficult to raise our children. Lot of filthy words… those things are too much. We cannot raise them indoors everyday… can we? (Male, 42 years)

Although they manage in these neighbourhoods, the above factors promote an invisible existence.

Wherever I go, I always mention my residence as Yatiyanthota. It is not suitable to mention Mattakkuliya as this is a problematic area. (Female, 39 years)

It is worrying. Three brothers… the sons of my father's younger brother…. They are having good lives… All of them are better off… But, they never come to my house… When they come they say that they fear coming to Samithpura… Mostly my relatives. Even if the people from his side come here, they would say the same. They will say that…"you stay the same as in the village, here." Then it would be very hurtful to our hearts. (Female, 38 years)

These concerns pertaining to subjective well-being were also related to identity formation of individuals, particularly the young, in the community. They did not wish to be identified as coming from the said neighbourhoods.

It is meaningless. Wherever we stay, our place is always our place. My grandson, he was born here. If I go to our village and mention him as a Colombo native, he becomes angry. He asks, "Why you are saying like that granny? Please say my place is Nawalapitya, Don't say like this again." (Female, 67 years)

There is no stature here. The society rejects us. The child might have a problem at a certain time by associating this place as home. Those who stay will stay on. Some say that the

background has nothing to do with a child's development. (Female, 44 years)

Resident's future aspirations seem to be formed around the dissatisfaction felt about "social attitude" held by outsiders about the physical and social environment of the community. These aspirations confirm the dissatisfaction felt by residents in terms of subjective well-being. Some of them desire to build their own house, while others want to reconstruct the existing house. Some others desire to completely move out of the current location. Residents also aspire to educate their children to make sure that their life circumstances are better than that of the parents. The current location does not seem to provide the environment necessary for such possibilities. Factors that promote their material well-being seem pivotal towards attracting and retaining them in the neighbourhood. Relational well-being facilitates this attraction to some extent. However, the combination of material and relational well-being does not seem to necessarily bring about subjective well-being. Even some residents with positive attitudes about the social relationships in the neighbourhood aspired to leave the community because of concerns pertaining to subjective well-being. In other words, relational well-being alone did not seem like an adequate factor that could keep the residents attracted to the neighbourhood.

If I can buy some other house, I will leave here…because of the environment here. Although the neighbours are good, it is not just about that. (Male, 43 years)

The material well-being found in these neighbourhoods seem to compensate for the inadequacies of subjective well-being felt by the residents. Coping with these inadequacies was made possible by material benefits offered by the location.

In any way… we don't like to stay here. We are looking for an opportunity to go out anywhere. But, we don't have that much of capacity. If we want to go out, we have to give key money to take a shop… Even if we want to take a house, we have to pay this key money. There are no places available in other areas for a low cost as here... Because of that, anyway… we are continuing here. It will be difficult to raise our children in this place. (Male, 42 years)

It is difficult to say that the "realistic" state of well-being outlined by Pouw and McGregor (2014) exists in the neighbourhoods studied. At the same time it would be misleading to assume that these individuals continue in these communities in a zero well-being setting. Though they do not have the three

dimensions of well-being intersecting perfectly, they do have at least two dimensions, i.e., material and relational well-being intersecting well enough to "retain" them in the community. Even the ones who explained their existence in the community as one of "desperation" were able to "find" reasons to remain in the community, particularly focusing their attention on the affordable nature of daily life in the neighbourhood.

Conclusion

The paper analysed data obtained through 30 in-depth interviews with residents in two underserved communities in Sri Lanka using the well-being model presented by Pouw and McGregor (2014). The three dimensions of well-being, namely 1) material, 2) relational, and 3) subjective, were analysed by looking at 1) housing quality, quality of physical environment, employment, and educational opportunities and cost of living; 2) nature and use of social relations; and 3) external perceptions of the community and its impact on the emotions of residents.

Considering the fact that most of the residents belonged to the low-income category, it was evident that they were attracted to the location by cheap housing, low cost of living, better opportunities of informal employment and educational opportunities for the young. Even though there was some discontent in terms of physical environment, they still coped with these neighbourhoods because of its location and affordability. Many who wished to leave the neighbourhood could not do so because life outside of these communities was too expensive for their income. This ideal match between their income and expenses seemed to provide adequate conditions for the residents to be content, or at least 'find' a suitable reason for remaining in the community.

Relational well-being and subjective well-being was affected mostly by the violent reputation that is usually attributed to these underserved communities. Residents, particularly new migrants to the location, were reluctant to form relationships with others in the community because of this concern. These neighbourhoods have had thugs and gangsters living amongst them in the past. Even though the threat is currently either absent or weak, migrants still seem reluctant to believe that these areas are safe. However, over time, they too seem to get accustomed to and be happy with the kind of social relationships that are formed in these neighbourhoods. People in formal employment also seemed to hold reservations about social ties in these neighbourhoods. But this was mostly a situation caused by the unavailability of time to socialize as a result of being in formal employment. Therefore, in terms of social relationships, there was clearly a difference in the strength of relationships formed by migrants as opposed to non-migrants and the informally employed as opposed to the formerly employed. In general, the

residents seemed to be coping well, though they may not be happy, with the kind of social relationships offered by the neighbourhood.

Subjective well-being seemed to be the area with which the residents felt the most amount of discontent. They were clearly struggling to come to terms with the identity of their community and the social recognition offered by the neighbourhood. They were not at all happy with how their neighbourhood was perceived by people living outside the community. They were always made to feel that they lived in an unsuitable place which offered bleak opportunities of improved living conditions. These sentiments clearly made the residents feel a desire to move out of the neighbourhood.

Instead of a situation where the three dimensions of well-being outlined by Pouw and McGregor (2014) intersecting perfectly to create a realistic well-being, the authors observed a situation of material and relational well-being intersecting to create a more practical kind of well-being in the communities studied. Of the two, material well-being had the strongest power to attract and retain residents in the neighbourhoods while relational well-being played a supportive role in terms of pulling people into the community. Subjective well-being, on the other hand, was identified as the strongest reason that has the capacity to push people away from the community. However, this single push factor was not strong enough to overpower the pull effect of material and relational well-being, particularly because of the residents' low-income. The material benefits of living in the location facilitated by the social ties offered by the neighbourhood kept these residents attracted and attached to these underserved communities.

Acknowledgments

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Communication et Eco-Citoyennete de la Population du District d'Abidjan Face a L'insalubrité Environnementale

Résumé

L'insalubrité environnementale que subit aujourd'hui le district d'Abidjan est une réalité qui résulte en grande partie des actions posées par l'homme sur son espace de vie. Les objectifs de cette recherche étaient dans un premier temps d'identifier les causes liées au comportement de la population et dans un second temps de proposer des stratégies communicationnelles dans le but de l'amener à avoir des gestes éco-citoyens. Une étude a été menée dans la commune de Cocody, Yopougon et Abobo. La collecte de données de ce travail a été possible grâce à une observation non participante, une recherche documentaire et à un entretien directif sur quarante-deux (42) personnes. De cette étude, il ressort que le manque d'informations ou de connaissances sur la gestion de l'environnement était à la base du mauvais comportement de la population. Cependant, elle n'est pas la seule raison; les normes subjectives, le laxisme d'un type de population, la projection psychologique que certaines personnes font sur les autres sont aussi des facteurs qui amènent cette population à mal agir. De ce fait, un changement de comportement s'avère nécessaire à travers des stratégies comme l'Information, l'Education, la Communication (IEC), la communication participative et la communication persuasive.

Mots clés: communication, éco-citoyenneté, insalubrité, environnementale, Abidjan

Communication and Eco-Citizenship of the Population of the District of Abidjan in the Face of Environmental Insalubrity

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Abstract

The environmental insalubrity that the district of Abidjan undergoes today is a reality which results in large part from the actions taken by man on his living space. The objectives of this research were firstly to identify the causes linked to the behavior of the population and secondly to propose communication strategies in order to get them to take eco-citizen actions. A study was carried out in the towns of Cocody, Yopougon and Abobo. Data collection for this work was made possible through non-participant observation, documentary research and a structured interview with forty-two (42) people. From this study, it emerges that the lack of information or knowledge on environmental management was at the root of the poor behavior of the population. However, she is not the only reason; subjective norms, the laxity of a type of population, the psychological projection that certain people make on others are also factors which lead this population to act badly. Therefore, behavior change is necessary through strategies such as Information, Education, Communication (IEC), Participatory Communication and Persuasive Communication.

Keywords: Communication, eco-citizenship, insalubrity, environmental, Abidjan

Introduction

L'épineuse question de la gestion de l'environnement dans les zones urbaines est un problème sanitaire et écologique impactant dangereusement sur la santé et la qualité du biotope. La croissance des ménages dans les grandes agglomérations a faovrisé une surconsommation dont les retombées sont la proliferation des ordures. Si dans les pays développés la gestion des déchets issus des ménages semblent correct, il est très courant de voir dans les pays en voie de développement, des décharges d'orudres ménagères à ciel ouvert mettaant en évidence une insuffisance dans leur traitement (Assako

Assako Joly René et al., 2010).

Abidjan, la capitale de la Côte d'ivoire ne fait pas l'exception. Il y'a eu de nombreux écrits sur l'impact sanitaire et environnemental de l'insalubrité sur la population; dans ce travail de recherche, nous ne ferons pas l'exception des choses en éludant cet aspect car il est indéniable. Toutefois, il est également important de préciser que nous pousserons plus notre réflexion sur l'implication de la population abidjanaise à la gestion de son milieu de vie. A cet effet, une enquête exploratoire a été menée et nous a permis d'observer les faits suivants: l'omniprésence des ordures dans la plupart des rues de la métropole. Sur les voies, dans les caniveaux, nous avons vu des gens jeter des emballages de toutes sortes et autres déchets, sans compter les dépôts sauvages d'ordures à tous les coins de rues. Dans des quartiers, nous avons vu l'eau usée des toilettes sortir des fosses septiques et couler dans des ruelles et les résidents marchaient là-dedans. (Coulibaly Moussa et al., 2018) énonceront que:

> « *La prolifération dans les rues des déversoirs d'eaux usées, des dépôts sauvages d'ordures ménagères, la stagnation des eaux, associée aux sources insalubres d'approvisionnement en eau renforcent la gravité de la situation sanitaire des populations vivant dans ces quartiers précaires* » p 48.

De même, il y'avait des personnes qui, pour contourner les frais de ramassage des ordures les brûlaient eux-mêmes. Soulignons le danger d'un tel geste car les matières plastiques brûlées à l'air libre sont très nocives pour l'homme et pour l'atmosphère.

Cependant, au regard de ce que nous avons vu dans la ville, il est difficile d'imputer cette insalubrité environnementale uniquement aux quartiers précaires car de plus en plus de quartiers aisés sont gagnés par ce phénomène des temps nouveaux. Dans cet article, lorsque nous évoquons la notion de l'éco-citoyenneté de la population du district d'Abidjan face à l'insalubrité environnementale, il s'agit de découvrir et d'analyser la responsabilité de la population abidjanaise face à la question de la gestion environnementale dans toutes les communes et tous les quartiers du district d'Abidjan.

Nous postulons que la cause ou les causes liées au comportement de la population sont entre autres le manque d'informations par rapport aux bonnes pratiques environnementales. Vu le comportement des individus qui posent ces actions néfastes lesquels sont pour la plupart des adultes, nous avons l'impression qu'ils ignorent les connaissances relatives à la protection de leur milieu de vie. C'est pourquoi l'objet de cet article est de montrer sur la base d'une analyse essentiellement qualitative, l'importance des stratégies communicationnelles portant sur le changement de comportement pour amener la population à avoir une perception positive et constructive de

l'environnement pour une qualité de vie saine et durable dans le district d'Abidjan.

1.   Cadre de Référence Conceptuelle

La définition des mots clés dans cette partie de l'article est une étape très importante dans la mesure où son but consiste à définir les mots dans leur contexte original et ensuite à les adapter selon leur évolution à la réalité donnée.

1.1.   L'insalubrité

Selon « le dictionnaire de poche Larousse», l'insalubrité se définit comme: « *Etat de ce qui est insalubre* » (Insalubrité 2020). Il ressort de cette courte définition que l'insalubrité est relative à une hygiène environnementale malsaine et nocive pour la santé ainsi que pour le bien-être. Dans les années 1850, selon Yankel Fijalkow (2000), la notion d'insalubrité relevait de l'état des logements c'est-à-dire des conditions d'hygiènes des habitations de nature à mettre en danger la vie et la santé de ses habitants. Par ailleurs, il énonce qu'à cette époque, pour qualifier une maison d'insalubre il fallait faire référence au mode de construction, à la ventilation, à l'humidité etc. Cependant, cette notion connaîtra une première évolution et au-delà des habitations, elle s'étendra à d'autres éléments tels que: « *(.....) amas d'immondices, stagnation d'eau pour cause de mauvais pavage, défaut d'entretien des conduites d'eau ménagères, mauvaise odeur des fosses et cabinets, saletés des murs, corridors et escaliers.*» p 5. Plus tard, elle prendra en compte d'autres facteurs comme la distribution d'eau potable dans les immeubles, l'espacement des pièces à vivre, les hauteurs de plafond, l'apport de ventilation dans les habitations etc.

1.2.   L'éco-citoyenneté

L'éco-citoyenneté est une attitude respectueuse des règles d'hygiènes de vie et de bien-être dans la société. Très souvent associé à l'expression de développement durable, l'éco-citoyenneté consiste chaque jour à mettre en pratique des gestes qui répondent aux principes de l'écologie.

Selon Jean-Pierre Leleux (2014), être éco citoyen c'est:

« - *Prendre conscience de son appartenance à un territoire, de ses droits et devoirs vis-à-vis de ce territoire et plus globalement vis-à-vis de son environnement;*

- Prendre conscience que son action individuelle a un impact global;

- Prendre en compte, dans ses pratiques quotidiennes, les conséquences que ses actes sont susceptibles d'avoir;

- Contribuer, au travers de son action individuelle, à diffuser ces prises de conscience et ces pratiques autour de soi. » p7.

A travers cette définition, l'éco-citoyenneté est perçue comme une identité écologique que l'on s'approprie ou encore une appartenance à des valeurs avec des responsabilités portant sur la protection de l'environnement. Elle est caractérisée par la prise de conscience de contribuer au développement de l'humanité.

2.   Methodologie
2.1.   Terrain et participants
2.1.1. Terrain

Nous avons décidé de faire une étude qualitative et le choix de la ville d'Abidjan se justifie par le fait qu'elle est la plus polluée de la Côte d'Ivoire, vu la densité des activités humaines (industries, commerces, exploitations agricoles, écoles, universités, décharges publiques d'ordures, trafic dense etc.). Les communes de Yopougon, Cocody et Abobo sont celles que nous avons choisies pour mener nos investigations. Ce choix se justifie par les perceptions différentes qu'ont les populations de l'insalubrité.

2.1.2. Participants

La population concernée par cette étude est composée dans un premier temps d'un spécialiste en environnement appartenant au ministère de l'assainissement et de l'insalubrité dont le critère de choix est essentiellement basé sur ses connaissances en rapport avec notre sujet. Nous lui avons posé des questions relatives à la problématique de l'insalubrité dans le district d'Abidjan et aux actions menées par le ministère pour combattre ce phénomène. Dans un second temps nous sommes allés vers la population et avons décidé d'interroger quelques personnes selon des critères bien précis. Il s'agit:

−   Des hommes et des femmes dont l'âge varie entre 18 et 70 ans ;

−   Ces hommes et ces femmes résident dans les communes de Cocody, Abobo et Yopougon ;

−   Parmi eux il y'a des gens qui ont un niveau d'étude élevé, certains un niveau d'étude moyen, d'autres un niveau d'étude bas et des illettrés ;

−   Au niveau professionnel, nous avons interrogé des fonctionnaires du secteur public et privé, des personnes exerçant dans le secteur informel, des étudiants, des personnes sans emplois ;

−   En ce qui concerne la classe sociale, nous avons choisi la classe supérieure, la classe moyenne et la classe ouvrière.

Au total quarante-deux (42) personnes ont été interrogées. Les investigations se sont étendues sur deux (02) mois; c'est-à-dire du 19 novembre 2019 au 20 janvier 2020.

2.2.   Techniques de collectes de données

Pour la collecte de données, nous avons utilisé l'entretien directif, l'observation non participante et la recherche documentaire.

2-2-1- l'entretien directif

Ce type d'entretien s'apparente sensiblement au questionnaire, à la différence que la transmission se fait verbalement plutôt que par écrit. Dans le cadre de cet entretien, l'enquêteur pose des questions selon un protocole strict, fixé à l'avance (il s'agit d'éviter que l'interviewé ne sorte des questions et du cadre préparé). L'entretien directif que nous avons effectué a permis de recueillir l'opinion de la population sur l'état de l'insalubrité dans la ville, les perceptions sur le comportement de la population par rapport à la gestion de l'environnement et les raisons liées à ces agissements.

2-2-2- l'observation non participante

L'observation non participante consiste à appréhender le comportement ou la psychologie d'une cible tout en restant en dehors du contexte d'observation. Notre observation non participante a consisté à observer les gestes de la population en activité sur son environnement.

2-2-3- la recherche documentaire

La recherche documentaire est une démarche systématique, qui consiste à identifier, récupérer et traiter des données publiées ou non. Cette identification des informations est une étape indispensable à toute synthèse des connaissances dans tous les domaines de la recherche. Elle nécessite donc une parfaite connaissances des différentes sources d'information; la maîtrise des outils et des stratégies de recherche. Dans le cadre de cette étude, la recherche documentaire nous a permis d'identifier, de recueillir et d'analyser des données actuelles relatives au problème de l'insalubrité à Abidjan, au problème de la gestion environnementale face à l'industrialisation, à la définition des mots clés.

2.3.   Méthodes d'analyse

Dans cet article, il était question de découvrir et d'analyser l'implication de la population abidjanaise sur son environnement. De ce fait, nous avons opté pour la méthode descriptive; elle nous a permis d'identifier, de décrire et d'analyser les différentes attitudes de la population face à l'environnement.

Pour le traitement des données, étant une étude qualitative, nous avons opté pour une analyse de contenu. Elle a consisté à classer et organiser la diversité d'opinions recueillies auprès de nos enquêtés selon les variables et ensuite à faire une analyse lexico-thématique des données.

Par ailleurs, pour mieux comprendre les comportements de la population, nous avons fait appel à la théorie la théorie de l'action raisonnée (TAR) de Fishbein et Ajzen (1975), la théorie de l'action raisonnée (TAR) d'Ajzen et Fishbein (1980), la théorie de contrôle du locus de Rotter (1982).

3.   Presentation des Resultats
3.1.   Identification des comportements de la population du district d'Abidjan

Le comportement de la population vis-à-vis de l'environnement se caractérise par plusieurs gestes. Il s'agit dans un premier temps de citadins qui jettent systématiquement toutes sortes d'emballages dans la rue après usage malgré la présence de poubelles publiques. Cette attitude est commune à de nombreux riverains. Ensuite, du mauvais entretien de l'environnement immédiat et du cadre de vie. Il suffit de regarder devant des habitations et aux alentours pour s'en rendre compte: bacs à ordures ménagères mal entretenus, emballages et détritus à même le sol ou emportés par le vent. De plus, à cela il faut ajouter l'écoulement des eaux de toilettes qui débordent des fosses septiques et qui ruissellent le long des voies. En effet, certains propriétaires de maisons ne vident pas régulièrement leurs fosses et lorsqu'elles sont remplies, le surplus d'eaux usées déborde et se répand dans des espaces de vie. Enfin, il y'a des riverains qui urinent dans les lieux publics; dans les caniveaux, dans les broussailles, dans les rues, sur les façades, les trottoirs etc.

L'un de nos enquêtés qui est une sécrétaire déclara que: « *les ivoiriens sont irresponsables, ils jettent les ordures partout et urinent dans les lieux publiques* ».

Par ailleurs, une assistance sociale dira: « *mes voisins n'ont pas un comportement éco responsable. Ils n'entretiennent pas leur environnement immédiat ; ce qui attire les cafards et favorise la repousse de mauvaises herbes* ».

Aussi, une manan au foyer énoncera que : « *la population n'entretient pas son environnement. Elle mange et jette ses emballages dans la rue au lieu de les mettre à la poubelle* ».

Ces agissements sont de nature à dégrader l'environnement, à diminuer les capacités de l'écosystème à produire les apports naturels du biotope et à impacter sur la santé de la population.

3.2.   La cause ou les causes liées au comportement de la population

La population manque d'informations et d'éducation en matière d'assainissement de l'environnement. En effet, elle méconnaît dans son ensemble les attitudes typiques liées à la protection de l'environnement.

Une étudiante affirma que : « *le comportement de la population est lié à un manque d'information et d'éducation. Ce sont des personnes qui n'ont pas grandi dans un environnement sain d'où ce comportement.* ».

Un dentiste, assura que : *« le comportement de la population est lié à un manque d'information et d'éducation.* ».

Un enseignant répondra que : « *le comportement de la population est lié au manque d'éducation, à l'ignorance et à la cupidité.* »

Ce déficit informationnel et éducationnel amène beaucoup à poser des actions nuisibles de manière presque naturelle sans réellement penser aux conséquences de leurs actes qui sont la pollution du sol, de l'air et la prolifération de maladies dangereuses.

4.   Interpretation

Pour voir si réellement l'ignorance ou le déficit communicationnel peut impacter sur le comportement de l'homme, nous avons fait appel à la théorie l'action raisonnée (TAR) de Fishbein et Ajzen (1975). Dans cette théorie, le postulat de départ est que l'attitude dérive des croyances et de l'information disponible.

4.1.   Manque de connaissance

Pendant nos investigations, lorsque nous avons énoncé à certaines personnes que le jet sauvage d'ordures, le déversement d'eaux usées, la combustion des ordures, l'urine sauvage à des endroits inappropriés etc.; sont des attitudes malsaines qui contribuent à la dégradation de l'environnement, nous nous sommes rendus compte qu'elles étaient stupéfaites et en même temps douteuses sur leur éventuelle contribution à la détérioration de l'environnement. En effet, beaucoup reconnaissent leur implication dans les mauvaises pratiques vis-à-vis de l'environnement et confient que cela a tendance à rendre leur cadre de vie insalubre mais rejettent toute responsabilité par rapport à la détérioration du sol, de l'air et du biotope à travers leurs gestes. En un mot ils reconnaissent que leurs actions ont tendance à rendre insalubre l'environnement mais ne pensent pas que cela contribue à la pollution et à la dégradation système environnemental. Ces réactions montrent que cette population manque de connaissances appropriées sur l'environnement car, elle ignore les conséquences de ses actes. Ce manque de connaissances pourrait expliquer leurs comportements environnementaux malsains amenant certains enquêtés à parler d'irresponsabilité, de négligence ou encore de manque de volonté de leur part.

Néanmoins, la réalité est que le manque d'informations que nous évoquons ne peut qu'en partie expliquer leurs agissements. En effet, pendant les investigations, nous nous sommes rendu compte qu'il existait d'autres facteurs explicatifs de l'attitude de la population.

4.2.   Les normes subjectives liées aux croyances normatives

Les normes subjectives selon la théorie de l'action raisonnée (TAR) d'Ajzen et Fishbein (1980), sont des idées, des opinions véhiculées par des personnes qui sont considérées au sein de la société ou de la communauté comme des références ou des modèles. Ces personnes influentes véhiculent des perceptions qui sont les leurs auprès d'autres individus et qui par la suite deviennent des croyances normatives pour ces derniers. Au cours de–nos investigations, nous avons parcouru de nombreuses rues et artères dans la ville d'Abidjan et nous avons vu des adultes uriner dans des lieux publics, aux abords des voies, jeter des papiers ou sachets pendant qu'ils sillonnaient à pied dans les rues ou en étant dans des véhicules. Par ailleurs, il y a ceux qui déversaient les eaux usées sur les voies publiques; généralement ces personnes exerçaient dans de petits commerces ou dans la restauration. D'autres jetaient leurs ordures ménagères dans les caniveaux ou encore les laissaient trainer aux abords des routes au vu et au su de tous. En conséquence, les voyant agir de la sorte, d'autres les reproduisent en pensant que c'est qui est normal à faire dans la société.

4.3.   Le laxisme de la population

Un autre fait non négligeable que nous avons observé est le laxisme de la population face aux comportements environnementaux malsains. Certes, beaucoup de personnes sont contre ces agissements peu nobles mais n'osent pas interpeller les individus qui les posent. Ils préfèrent aller plutôt crier leur indignation face à leur famille toutefois cela n'a aucune portée. Ce comportement passif contribue à la mise en mal de la qualité de l'environnement. Pour expliquer cette attitude, nous nous sommes servis de la théorie du locus de Rotter (1982).

Le locus de contrôle de Rotter (1982), est une position qui émane de l'homme en général. Cette attitude a trait à la capacité de ce dernier à réagir face à une situation donnée. Ainsi, il y a deux tendances liées à cette théorie: lorsqu'une personne considère que par ses propres actions, elle peut atteindre un objectif, on parle de locus interne. Cependant, lorsqu'elle pense que ces attributions doivent venir de l'extérieur et donc ne dépendent pas d'elle, on parle de locus externe. Dans le cadre de cette étude, on pourrait attribuer au comportement laxiste de ces riverains, le caractère de locus externe car, le fait de ne pas réagir face à ces personnes malgré leur mécontentement suppose qu'elles comptent sur une aide venant d'ailleurs.

4.4.   Mécanisme de défense inconscient

Aussi, un autre fait qui a attiré notre attention est le comportement des personnes soumises à nos questions. En effet, ces personnes ont toutes affirmé dans leur argumentation avoir des comportements environnementaux décents.

Cependant, relativement à l'attitude environnementale de leurs proches, leur position est plutôt négative. Ainsi, pour elles, si le milieu environnemental est insalubre, c'est à cause de ces personnes. Cette manière de rejeter la faute sur les autres est une projection psychologique qui selon la théorie freudienne de l'inconscient (1896) est un mécanisme de défense inconscient par lequel le sujet projette sur autrui les craintes et les désirs qu'il ressent comme interdits et dont la représentation consciente serait chargée d'angoisses ou de culpabilité. Ce mécanisme de défense est beaucoup plus détaillé dans la publication de Sophie Berger (2016). En effet, elle énonce que la projection psychologique nous permet de nous défendre en attribuant aux autres des perceptions, des pensées ou autres attitudes lesquelles en temps normal semblent inadmissibles pour nous. Pour elle, ce mécanisme de projection se met en place lorsque nous sommes confrontés à des expériences difficiles ou lorsque nous ne nous sentons pas en sécurité en interne comme en externe, suscitant en nous un conflit émotionnel. Le fait de toujours rendre autrui responsable d'une situation dans laquelle nous ne reconnaissons pas notre propre responsabilité est une attitude de faiblesse dont nous tentons de nous protéger par des accusations.

Dans notre étude nous nous sommes rendus compte que même si nous avions pris l'initiative d'interroger toute la population ivoirienne, les réponses seraient les mêmes. Chacun chercherait à se dédouaner de son mauvais comportement. Selon la théorie de l'inconscient de Freud (1896), les gens en agissant ainsi n'ont pas conscience d'appliquer ce mécanisme car il relève de sentiments négatifs ou perçus comme tels.

5.   APPROCHES COMMUNICATIONNELLES

L'analyse et l'interprétation de cette étude nous amené à opter pour trois approches communicationnelles qui sont l'Information, l'Education, la Communication (IEC), la communication persuasive et la communication participative.

5.1.   Déficit communicationnel

En effet, le premier problème mis en évidence dans ce travail de recherche est le comportement défavorable de la population face à la gestion écologique de l'environnement. La première cause relative à ce comportement est un déficit communicationnel lié au manque de connaissances de la population abidjanaise sur la gestion de l'environnement. En effet, notre étude nous a montré que certaines personnes posaient des actes incongrus sur leur milieu de vie sans réellement prendre conscience de leurs conséquences sur la nature et leur bien-être.

De ce fait, nous proposons l'Information, l'Education et la Communication (IEC). A travers une sensibilisation, il faut inculquer à la

population des messages sur les conséquences des actions de l'homme sur son milieu de vie, sur les dangers sanitaires et environnementaux auxquels nous nous exposons par la pratique de comportements malsains. Il faut également l'éduquer sur les attitudes et gestes éco-citoyens à avoir tels que le tri d'ordures ménagères, le stockage adéquat de ces ordures, l'entretien efficace du milieu de vie, l'économie de l'eau et de l'électricité, l'abandon de certains produits chimiques nocifs pour la santé et pour l'environnement, la création et la protection d'espaces verts, etc. Enfin, il faut échanger avec cette population pour s'enquérir de son état d'esprit par rapport au nouveau comportement à adopter. Prendre en considération ce dernier aspect permettra de prendre en compte les préoccupations, les craintes et les peurs de la population et d'adapter la stratégie communicationnelle à leur sensibilité.

5.2.   L'influence des normes sociales

La deuxième raison que nous évoquons est l'influence des normes sociales sur la perception de la population. Les normes sociales que nous avons identifiées dans cette recherche sont de nature à dégrader l'environnement. Le jet sauvage ou le brûlage d'ordures, l'urine sauvage, la négligence dans l'entretien de son environnement etc. sont au fil du temps, des gestes malséants qui s'installent dans les communautés et par manque de jugements et de sanctions, ils deviennent des habitudes et sont désirables ; pourtant, ils ne sont pas un critère de vérité. Ainsi, nous proposons une communication participative dont le but est de mobiliser des personnes vivant dans des communautés à l'adoption d'une attitude saine pour le développement. Selon (Guy Bessette et C.V Rajasunderam ; 1996), cette communication est une stratégie qui vise à encourager la participation des personnes issues des communautés et groupes sociaux à leur propre développement par la prise en main de leurs propres préoccupations. Ils énoncent que cette manière de procéder amène les personnes concernées à s'impliquer d'avantages à la discussion; à la prise de solutions communes et à la responsabilité.

Dans cette étude, nous pensons que si cette approche est mise en pratique au sein des communautés touchées par le problème, elle contribuera à briser beaucoup de perceptions négatives, à une prise de conscience, à la volonté de ces personnes de discuter et de résoudre par elles-mêmes les problèmes , à l'acquisition de connaissances et à leur autonomisation face aux difficultés.

Par ailleurs, étant dans un contexte relatif à la protection de l'environnement, nous pensons qu'on peut introduire dans cette approche communicationnelle, le « Commuinity Approaches to total Sanitation », (CATS) ou approches communautaires pour l'assainissement total. Cette stratégie développée dans le domaine de l'assainissement de l'environnement énoncé par Thérèse Dooley et al., a pour spécificité de modifier les normes

sociales des personnes vivants dans les communautés afin de rendre plus durable les projets liés à l'environnement. En effet, selon ces auteurs, « *Certaines personnes assimilent les normes sociales à des styles de comportements récurrents et observés (……). Une norme sociale est une règle de conduite telle que les individus préfèrent s'y conformer à condition de croire que: (a) la plupart des gens à l'intérieur de leur réseau de référence s'y conforment (attentes empiriques) et (b) que la plupart des gens à l'intérieur de leur réseau de référence pensent qu'ils devraient s'y conformer (attentes normatives)* » (2017; p2). Citant Bicchieri (2010-15, 2016), qui énonce qu'on peut créer de nouvelles normes sociales en se basant sur : les changements de croyances et d'attitudes, la décision collective de changer, les actions concertées pour faire appliquer le changement, la création d'une attente normative et le renforcement par un changement des attentes empiriques ; ces auteurs affirment qu'à travers ces différentes étapes des actions collectives peuvent être créées pour favoriser des discussions de groupes qui feront émerger des prises de décisions communes. Aussi, ils affirment que c'est un processus qui encouragera des engagements publics qui amèneront la population à assumer leurs nouveaux comportements aux yeux de tous et une coordination de l'ensemble de la communauté dans la prise de sanctions quand les lois imposées ne seront pas respectées. Par ailleurs, ils disent aussi qu'il faut afficher des messages liés à l'assainissement de l'environnement qui rappellerons aux uns et aux autres les bonnes attitudes à avoir et enfin la récompense publique des personnes qui adoptent les bons gestes (2017).

Ces principes développés par ces auteurs sont applicables au processus de changement de comportement de la population abidjanaise. Ainsi, il est nécessaire d'impliquer toutes les communautés religieuses, ethniques, culturelles et autres dans la bonne marche du processus de changement des normes sociales. Aussi il faut une écoute et une prise en compte des préoccupations des uns et des autres et des prises de décisions communes. Par ailleurs il est important de renforcer les activités communautaires qui consolideront à leur tour les relations humaines.

5.3.   L'indifférence face aux comportements non écologiques

La troisième raison est le manque de réaction de la population en général face aux gestes non écologiques; par rapport à cette impassibilité qui contribue à la mise mal du système environnemental, nous proposons la communication persuasive. Dans la mise en pratique de cette théorie, il serait important de convaincre les personnes aux bonnes pratiques de s'engager à véhiculer des informations constructives sur l'environnement auprès des autres personnes. Par leurs actions elles peuvent contribuer à leur prise de conscience et les amener à poser des actes significatifs.

Enfin, corrélativement à l'attitude des personnes qui font une projection psychologique sur les autres, nous proposons aussi une communication communautaire laquelle portera sur la modification de leur perception. Dans les messages communautaires, il faut leur véhiculer le savoir-vivre ensemble, l'importance du relationnel communautaire, le partage de connaissances et de savoir-faire, l'écoute et la prise en compte des préoccupations des autres. En effet, il est important de dire à ces personnes d'avoir une bonne perception de l'attitude des autres et de considérer leurs comportements environnementaux malsains comme une opportunité pour leur apprendre les bonnes pratiques. Ces informations partagées peuvent amener ces derniers à les relayer auprès d'autres personnes et peuvent occasionner un changement de comportement à grande échelle.

Conclusion

Cet article portant sur la communication et l'éco-citoyenneté de la population du district d'Abidjan face à l'insalubrité environnementale nous a permis de découvrir l'effectivité de l'implication de la population dans le problème d'insalubrité que connait aujourd'hui le district de par leurs mauvaises actions. Les investigations qui ont été menées nous ont permis de voir que le manque d'informations n'était pas la seule cause liée aux agissements de la population face à son milieu de vie; le laxisme, les normes sociales, la projection psychologique jouent également un rôle important dans l'attitude de la population. Cette réalité exige de l'ensemble de la population des comportements éco-citoyens. Pour ce faire, nous avons proposé des approches communicationnelles comme l'Information, l'Education, la Communication (IEC), la communication participative et la communication persuasive.

Parallèlement à cela, le gouvernement ivoirien doit se pencher véritablement sur une vraie politique de l'environnement qui consistera à l'application des textes et des lois relatifs à la protection de l'environnement et une éducation nationale à l'éco-citoyenneté qui sera imposé à toutes les couches sociales. Aussi, il doit réorienter sa politique de consommation en matière d'énergie en promouvant l'usage d'autres types d'énergies que ceux que nous connaissons (énergie hydraulique, énergie thermique). En effet, aujourd'hui, l'énergie renouvelable semble être une alternative partout dans le monde dans la lutte contre le changement climatique; la proposer à la population en vue d'un changement peut contribuer à améliorer la qualité du biotope.

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Déterminants de la stabilité politique en Afrique : rôle de la fragmentation et d'abondance des ressources naturelles

Résumé

Ce papier analyse empiriquement les facteurs qui influencent la stabilité politique dans quelques pays africains. Pour y parvenir, nous spécifions un modèle logit en panel dans lequel la stabilité politique est mesurée par l'indice de la bonne gouvernance. Ce modèle est estimé sur un échantillon de 45 pays africains sur la période 1991-2018. Les principaux résultats montrent que la fragmentation ethnique améliore la stabilité politique dans le contexte des pays pétroliers. Comme suggestions, les pays africains doivent, premièrement, mettre en œuvre des mesures qui favorisent la démocratie afin de réduire les méfaits de la fragmentation linguistique et religieuse sur la stabilité politique. Deuxièmement, ils doivent poursuivre leurs efforts du respect de l'alternance au pouvoir exécutif afin de limiter la violence civile et améliorer la stabilité politique.

Mots clés: stabilité politique, fragmentation, rentes pétrolières et minières

Determinants of Political Stability in Africa: Role of Fragmentation and Abundance of Natural Resources

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Abstract
        This paper empirically analyzes the factors that influence political stability in a few African countries. To achieve this, we specify a logit panel model in which political stability is measured by the index of good governance. This model is estimated on a sample of 45 African countries over the period 1991-2018. The main results show that ethnic fragmentation improves political stability in the context of oil-producing countries. As suggestions, African countries should, first, implement measures that promote democracy in order to reduce the effects of linguistic and religious fragmentation on political stability. Second, they must continue their efforts to respect the alternation of executive power in order to limit civil violence and improve political stability.

Keywords: Political stability, fragmentation, oil and mining rents

1.   Introduction

        Avant le premier choc pétrolier, survenu dans les années 1970, les pays d'Afrique riches en pétrole bénéficiaient généralement des conditions macroéconomiques favorables : des taux de croissance économique positifs, l'inflation modérée, des déficits budgétaires et la dette extérieure soutenables, de compte courant excédentaire (FMI, 2006).

        Les politiques visaient à utiliser le pétrole au profit du développement économique et social, ainsi qu'à encourager la diversification économique. Ces objectifs n'ont malheureusement pas été atteints : des déséquilibres économiques ont provoqué une grave crise lorsque les cours du pétrole se sont effondrés dans les années 1980, et ces cours sont restés bas pendant plus d'une décennie (FMI, 2006, *Op.Cit*). Ce fut aussi le cas pour la plupart des

exportations d'autres minéraux (métaux et non-métaux), sauf pour quelques pays, tel que le Botswana (FMI, 2006 *Op.cit.*).

De ce qui précède, les pays africains n'ont pas suivi le modèle de développement observé dans d'autres pays en développement (UNIDO, 2016). En Asie par exemple, le secteur manufacturier n'a fait qu'augmenter bien avant la hausse des prix des matières premières. En Afrique, par contre, le secteur manufacturier continue de représenter une part du Produit Intérieur Brute (PIB) moindre que celle observée au début des années 1970 (UNIDO, 2016 *Op.cit.*).

Ce papier revient sur un problème que pose la stabilité politique dans les pays africains riches en ressources. La littérature récente sur la malédiction des ressources naturelles montre qu'à chaque fois que les ressources naturelles sont présentes, une diversité ethnique conduit en réalité à une plus grande propension au conflit intra-Etats (Wegenast et Basedau, 2014). Autre problème africain, c'est le faible nombre de régimes démocratiques. Même si la démocratie n'est pas toujours nécessaire à la croissance comme en témoigne le succès exceptionnel de la Chine (Collier, 2008). On observe cependant que la démocratie est importante pour la performance économique lorsque la société a une forte diversité ethnique (Collier, 2008 *Op.cit.*). La Chine peut croître sous un régime autocratique. Mais en Afrique, autocratie et diversité ethnique constituent un désastre, avec un pouvoir accaparé par des militaires ou des minorités ethniques étroites (Collier, 2008 *Op.cit*).

L'aspect sociopolitique de la géographie africaine et sa forte diversité ethnique qui est beaucoup plus importante que dans n'importe quelle autre région. Par exemple, nous retenons les pays tels que le Nigeria et la Norvège ou l'Angola et le Botswana (Alesina et al., 2003). Le Nigeria est l'un des pays le plus fragmenté au monde avec des fragmentations ethniques, mesurées par l'indice de fragmentation ethnique égal à 0,85 (Alesina et al., 2003, *Op.Cit*). En Norvège, par contre, la fragmentation ethnique est seulement de 0,06 car presque tout le monde (97%) appartient au même groupe ethnique (Alesina et al. 2003, *Op.Cit*).

Une analyse économique de la fragmentation conduit à s'interroger sur la stabilité politique. Elle permet l'étude des systèmes institutionnels encadrant la production des biens publics et contribue à déterminer les limites à l'unité constitutionnelle d'un Etat (Rodrik, 1998 ; Persson et Tabellini, 2006 ; La Porta et al., 1999). En effet, ce papier se réfère d'une certaine littérature qui considère les institutions politiques comme exogènes (ou prédéterminées). Plusieurs études de cas ont déjà abordé la question de l'hétérogénéité ethnique dans un environnement riche en ressources de manière plutôt qualitative (Par exemple, Le Billon, 2001 ; Aspinall, 2007 et ; Collier, 2008, *Op.Cit.*). Il existe par contre peu des preuves empiriques de la relation entre la stabilité politique et la fragmentation en Afrique.

Ainsi, cette recherche s'inscrit dans cette logique. Son objectif n'est pas de présenter des spécificités africaines dans les études jusque-là menées sur la malédiction des ressources, mais plutôt de mettre en évidence ou d'établir des nouvelles validations empiriques sur la probabilité qu'une diversité ethnique affecte la stabilité politique dans un contexte d'abondance des ressources naturelles. Pour y parvenir, nous structurons la suite de notre réflexion, après cette introduction en trois sections additionnelles. La section première présente une synthèse de la littérature entre la fragmentation et la stabilité politique. Puis, la section deux présente l'approche méthodologique. Enfin, la section trois, discute les résultats. L'article se termine par une conclusion.

2.   Fragmentation et la stabilité politique : synthèse de la littérature

L'analyse de la fragmentation et la stabilité politique fût développée pour la première fois par Canning et Fay (1993), Mauro (1995), Hodler (2006). Ils montrent que l'impact de la fragmentation ethnolinguistique et religieuse sur la qualité des institutions est plus important. C'est au cours de l'année 1999 que La Porta et al. (1999, *Op.Cit*), dans une vaste étude empirique des déterminants de la qualité du gouvernement, suggèrent que la fragmentation ethnique est un facteur qui influence la bonne gouvernance en Afrique.

La fragmentation mesure la probabilité que deux individus sélectionnés au hasard d'un certain pays appartiennent à des groupes ethniques (linguistique ou religieux) différents. La littérature économique, distingue généralement les indicateurs de la bonne gouvernance selon les agences de notation. Les premières qui nous intéressent dans le cadre de cet article sont captées selon les institutions par plusieurs indicateurs : (i) la stabilité politique et la violence (*Political Stability PS*) ; (ii) expression et responsabilité démocratiques, (*Voice and Accountability, VA*).

Kaufmann et al. (2003) distinguent les indicateurs de gouvernance selon leurs aspects administratif et politique : (i) le premier aspect est présenté par trois indicateurs qui sont la qualité de la bureaucratie, la corruption et les droits de propriété. (ii) le deuxième aspect est présenté par les indicateurs de la stabilité politique et la liberté civile. Cet aspect est présenté par les indicateurs suivants : la qualité de la bureaucratie, la primauté de la règle de droit et la corruption. Les trois indicateurs sont fournis par « *Political Risk Services, Internationales Country Risk Guide*).

En Afrique, le Cameroun, la Guinée équatoriale, la République Centrafricaine, la République Démocratique du Congo, la République du Congo et le Tchad figurent au bas du classement des indices de gouvernance (Kaufmann et al., 2007). Car, ils obtiennent des très mauvais résultats en ce qui concerne les indicateurs de gouvernance et de fragilité. Notre hypothèse principale est que la disponibilité de la rente des ressources importantes peut

expliquer pourquoi, dans certains cas, la stabilité politique ne s'améliore pas dans les pays fragmentés en Afrique.

Dans les travaux empiriques sur la fragmentation et les conflits, des auteurs tels que Humphreys (2005), Wegenast et Basedau (2014) trouvent que la fragmentation est à l'origine des conflits. Par contre, dans ce papier, on évalue le contexte de la fragmentation sur la stabilité politique, ce qui n'est pas soulevé dans cette littérature Ce papier revisite aussi la question des effets de la fragmentation ethnique, linguistique et religieuse sur la démocratie, comme indicateur de la qualité des institutions (Kaufmann et al., 2007, *Op. Cit*).

Il existe une abondante littérature tant théorique qu'empirique suffisamment documentée sur les conséquences de la fragmentation dans les pays riches en ressources (Wucherpfennig et al. 2012, Wimmer et al., 2009). Toutefois, le rôle de la fragmentation comme facteur de réduction et d'amplification de la stabilité politique en Afrique est insuffisamment analysé dans le contexte africain. Pourtant, la fragmentation peut jouer un rôle important dans l'amélioration de la qualité des institutions politiques d'un pays. Car elle peut favoriser la décentralisation et contribuer à accroitre l'intérêt des groupes pour l'action publique.

Au cours de ces dernières années. La littérature économique soulève trois mécanismes majeurs qui relient la fragmentation dans le contexte des pays riches en ressources. Premièrement, les pays fragmentés ont tendance à croître plus lentement (Mauro, 1995) et ont un faible niveau de fourniture de biens publics (Habyarimana et al, 2007). Les deux effets peuvent indirectement augmenter le potentiel de conflit et réduire la stabilité politique. Deuxièmement, les identités des groupes ethniques sont une ressource pour la mobilisation. Les soi-disant «instrumentistes» affirment que les identités ethniques sous certaines conditions circonstancielles particulières peuvent servir d'outils. Et, que les responsables de groupes individuels peuvent les utiliser pour leurs activités politiques (Ostby, 2009). De cette manière, le problème de l'action collective peut être évité et les gens peuvent être mobilisés (Gurr, 2000). Troisièmement, le rôle de la fragmentation ethnique dans le contexte de durée de la guerre civile met l'accent sur les acteurs dans les guerres civiles (Wucherpfennig et al. 2012).

Toutefois, en analysant l'article d'Easterly et Levine (1997) sur la « *tragédie de la croissance de l'Afrique*», il ressort que ces auteurs ont produit l'indice nommé la PREG afin de rendre compte des effets politiques des conflits ethniques sur la croissance économique en Afrique. Cet indice le fait mieux que l'indice ELF (indice de fragmentation ethnolinguistique). Ils ont constaté que le passage d'une ethnie à un pays homogène avec une diversité de communautés ethniques correspond à une diminution des taux de croissance économique de plus de 2%. Enfin, une raison distincte qui explique

que l'intensité de conflit dans les Etats Africains est la recherche de la rente des ressources naturelles. En effet, plus un pays est riche en ressources, plus la fragmentation augmente le risque de conflit. Par contre, pour un pays moins riche en ressources, la fragmentation diminue le risque de conflit (Wegenast et Basedau, 2014).

Cependant, l'abondance de ressources naturelles et leur répartition inégale au sein d'un pays ne suffisent pas pour que le pays soit fragmenté et présenté de mauvaise qualité des institutions. Au Canada et aux Etats-Unis, les réserves de pétrole se concentrent dans quelques régions. Pourtant, ces pays présentent un indice de la stabilité politique supérieur à 1 (Banque Mondiale, 2017). De même, le Botswana est riche en ressources naturelles. Mais le pays affiche une longue histoire de stabilité politique et de solide performance économique.

3.   Approches méthodologiques et données

Il existe plusieurs méthodes de modélisation économétrique de l'impact de la fragmentation dans le contexte des pays en abondance de ressources. Ces méthodes privilégient l'impact de la fragmentation sur les conflits. Une bonne partie des travaux empiriques a recours à des modèles logit, notamment les modèles binaires logit et probit (Humphreys (2005), Fearon et Laitin (2003)), pour analyser la probabilité qu'un pays fragmenté et riche en ressources soit politiquement stable ou ait une meilleure indice de bonne gouvernance. Nous recourons, pour la vérification de la robustesse, à des modèles permettant de tenir compte de l'interdépendance entre les variables. Un des modèles les plus utilisés est le probit bivarié (Diallo, 2001).

Il est donc important d'identifier les mécanismes causaux qui lient la fragmentation ethnolinguistique et religieuse à la stabilité tout en utilisant un modèle Logit. Différentes spécifications ont été proposées dans la littérature. Fearon et Laitin (2003, *Op.Cit*), comme Humphreys (2005, *Op.Cit*) estiment des modèles Logits basés sur des données annuelles. En appliquant des régressions logits avec comme variables dépendante la stabilité politique, le modèle se présente comme suit

$$STAT\ pol_{ti} = \alpha_0 + \alpha_1\ X_{ti} + \alpha_2\ F_i + \alpha_3\ R_{ti} + v \quad \textbf{(1)}$$

STAT pol désigne la stabilité politique qui sera expliquée par l'indice de la stabilité politique et l'absence de violence. Si l'on suppose que la plupart des pays africains démocrates sont stables politiquement. X est un vecteur de l'habitude qui prend les autres variables telles que la croissance, l'inflation, la mortalité infantile et l'espérance de vie. F_i est l'indice de fragmentation ethnique, linguistique et religieuse et R mesure les rentes pétrolière et minière. Enfin, v est un terme d'erreur. Le principal coefficient d'intérêt est α.

Pour la vérification de la robustesse, il nous a semblé important de prendre en compte également l'estimation de Probit bivariée, vu les objectifs de l'étude et afin de prendre en compte l'interdépendance entre la stabilité politique et le type de régime politique comme indicateurs de la bonne gouvernance. Ce modèle permet, non seulement, de tenir compte de la causalité des variables en évitant le biais d'endogénéité, mais aussi d'étudier l'impact que la fragmentation a sur le régime politique. D'où le modèle suivant :

$$STAT\ pol_{ti} = \propto_4 + \propto_5 X_{ti} + \propto_8 F_i + \propto_7 R_{ti} + u \quad \textbf{(2)}$$
$$Régime\ Pol_{ti} = \propto_8 + \propto_9 X_{ti} + \propto_{10} F_i + \propto_{11} R_{ti} + e \quad \textbf{(3)}$$

Les variables Stat pol et Régime pol, peuvent être respectivement définies comme la stabilité politique et le régime politique et sont inobservées.

Il est construit un panel de 45 pays africains entre 1991-2018[1]. Puisque la majorité de pays riches en pétrole ou en minerais sont fragmentés. Les variables suivantes : fragmentation ethnolinguistique et religieuse, rentes pétrolière et minière sont incluses comme les variables principales exogènes de l'analyse. Concernant la variable dépendante, il est choisi de mesurer la stabilité politique par l'indice de la bonne gouvernance tiré par Kaufmann et al. (2007, *Op. Cit*).

Les études récentes sur la fragmentation ethnique s'appuient presque exclusivement sur les données d'Alesina et al. (2003, *Op. Cit*). Comme l'indicateur de Fearon est construit à partir d'énumération des groupes ethniques indépendamment du fait qu'ils soient ou non pertinents sur le plan politique et ne contiennent pas davantage toute information sur l'exclusion ethnique, il est décidé de compter plutôt sur l'ETHN publié par Alesina et al. (2003, *Op. Cit*), un ensemble de données qui couvre 190 pays inclus dans le rapport de la Banque Mondiale (1997). De plus, ils fournissent un indice de fragmentation linguistique (LANG) et un indice de fragmentation religieuse (REL).

La revue de littérature économique (Kaufmann et al. (2003)) a permis de mettre en évidence les déterminants essentiels de la stabilité politique. Sur cette base, nous avons mobilisé douze (12) variables susceptibles de générer de la stabilité politique. Ces variables sont issues de plusieurs sources : la Banque Mondiale (WDI, 2017), la base de données « *Polity IV* » (2015) et la base de données « *The Quality of Government Institute* » (2015). Le tableau Un présente les différentes variables exogènes utilisées, qu'il s'agisse d'indicateurs macroéconomiques, de la qualité des régimes politiques. Nous avons ajouté des variables additionnelles telles que la démocratie, l'inflation,

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[1]Voir Annexe sur la liste des pays

la mortalité infantile, la croissance économique, l'espérance de vie, l'ethnie, la langue, la religion, la rente pétrolière et la rente minière.

Table 1. Variables et sources

Variables	Définitions	Sources
Démocratie	L'indicateur de la démocratie est mesuré sur une échelle ordinale, qui représente le niveau de la démocratisation des institutions par lesquelles les citoyens peuvent exprimer les préférences concernant les choix politiques ainsi que la garantie des libertés civiles à tout citoyen dans sa vie quotidienne et dans les actes de participation politique.	Polity IV[2]
	Le taux de l'inflation calculé sur la base de l'indice des prix à la consommation.	WDI (2015)
Inflation	Le taux de *mortalité infantile* est le rapport entre le nombre d'enfants décédés à moins d'un an et l'ensemble des enfants nés vivants.	WDI (2015)
Mortalité infantile	Le taux de croissance du PIB par tête au prix de référence de 2000.	WDI (2015)
	Est un indicateur de la santé de la population.	WDI (2015)
Croissance	Reflète la probabilité que deux personnes choisies au hasard dans un pays donné n'appartiennent pas au même groupe ethnique. Plus le nombre est élevé, plus la société est fragmentée.	Alesina et al. (2003)
Espérance de vie	Reflète la probabilité que deux personnes choisies au hasard dans un pays donné n'appartiennent pas au même groupe linguistique. Plus le ' nombre est élevé, plus la société est fragmentée.	Alesina et al. (2003
Frag ethnique	Reflète la probabilité que deux personnes choisies au hasard d'un pays donné n'appartiennent pas au même groupe religieux. Plus le nombre est élevé, plus la société est fragmentée.	Alesina et al. (2003)
	Représente la valeur de la production de pétrole brut aux prix mondiaux en pourcentage du PIB.	WDI (2015)
Frag linguistique	Représente la valeur de la production des minerais bruts aux prix mondiaux en pourcentage du PIB.	WDI (2015)
Frag religieuse		
Rente pétrolière		
Rente minière		

[2]Polity IV:Les indicateurs du régime politique de Marshall et Jaggers (2015), connus sous le nom de «Polity IV »

Le tableau Deux présente les statistiques descriptives sur les variables en considération dans la présente étude. Ce résultat s'explique en partie par le fait que les transitions démocratiques sont inhérentes au fonctionnement des institutions. En outre, la fragmentation ethnique est plus prépondérante que la fragmentation linguistique et celle religieuse. Par ailleurs, la rente pétrolière est en moyenne de 16 ans sur notre échantillon, comme les ressources naturelles dominent l'économie de nombreux pays africains et la rente pétrolière constitue l'une des principales sources des recettes publiques et de richesse nationale (Banque mondiale, 2015).

Table 2. Statistiques descriptives : 1991-2018

Variable	Observation	Moyenne	Ecart-type	Minimum	Maximum
Stabilité politique	1260	.1952381	.3965413	0	1
Rente minière	1205	1.983598	5.002016	0	54.16282
Rente pétrolière	753	11.45939	18.55703	0	79.51369
Esperance de vie	1175	55.08896	8.303512	26.81871	76.693
Inflation	1186	54.06276	813.7923	-31.56591	26762.02
Religion	1232	.4976978	.2672441	.0035	.8603
Langue	1204	.636203	.2740439	.0124	.9227
Ethnique	1204	.668052	.2183755	.0394	.9302
Mortalité infantile	995	79.08633	30.56253	13.4	171.2
Croissance	1215	4.181259	8.602773	-62.07592	149.973
Démocratie	1208	.6738411	.4690004	0	1

4. Estimation des déterminants de la stabilité politique

L'équation de la stabilité politique est estimée en distinguant, d'une part, les pays riches en ressources minières et, d'autre part, les pays riches en pétrole. Afin de limiter le biais de multi colinéarité, nous n'introduisons pas toutes les variables exogènes simultanément. Le tableau Trois présente les résultats mettant en évidence les déterminants de la stabilité politique. De façon globale, les régressions possèdent un potentiel explicatif appréciable compte tenu des valeurs des tests de Wald qui sont significatives et les modèles de régression qui sont globalement significatifs.

Les résultats obtenus pour les huit (8) équations de la stabilité politique sont proches, mais des différences restent à noter dans l'amplitude des effets. Par exemple, la fragmentation ethnique améliore la stabilité politique dans les pays africains mais d'une proportion très marginale dans les pays pétroliers. La fragmentation linguistique affecte négativement la stabilité politique pour les pays riches en ressources minières et la fragmentation religieuse affecte négativement la stabilité politique pour les pays riches en pétrole, tandis qu'un accroissement de l'inflation n'améliore pas la stabilité politique.

Un impact positif de la croissance économique sur la stabilité politique s'explique par le fait que la performance macroéconomique (expliqué ici par le taux de croissance du PIB réel) est un déterminant qui améliore la stabilité

politique. Ces conséquences sur les performances économiques sont d'autant plus fortes dans les pays africains, lesquels font souvent face à des chocs externes et internes plus importants (par exemple, la baisse des cours de produit de base, la hausse de l'inflation, violence civile ou des conflits). Hnatkovska et Loayza (2005), Azeinman et Pinto (2005) et Loayza et al (2007) discutent les conséquences et les facteurs d'instabilité macroéconomique. Ces résultats montrent que dans les pays africains riches en ressources naturelles, la croissance affecte la stabilité politique.

Une augmentation de 10% de la fragmentation ethnique n'améliore pas la stabilité politique de 2.5 points de pourcentage, la probabilité de la stabilité politique dans les pays riches en ressources pétrolières. Et lorsqu'on prend en compte les minerais, la fragmentation devient favorable à la stabilité politique, soit de 9 à 18 points de pourcentage. Tandis qu'une augmentation de 10% de la fragmentation religieuse accroît de 16 points de pourcentage, la probabilité de la stabilité politique dans un pays minier et réduit cette probabilité de 14 points pour un pays pétrolier. Par contre, la fragmentation linguistique décroît de 15 points de pourcentage, la probabilité de la stabilité politique pour un pays minier et augmente la probabilité de 3 points pour le pays pétrolier (voir tableau Trois).

Table 3. Les déterminants de la stabilité politique entre 1991 et 2018

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Variable dépendante : **Stabilité politique**							
	Estimation : Logits							
Pétrole	0.0246***	0.0148***	0.0194***	0.0208***	0.0220***	0.0346***	0.0262***	0.0165**
	(0.00448)	(0.00482)	(0.00488)	(0.00498)	(0.00478)	(0.00620)	(0.00670)	(0.00770)
Ethnique		1.358**	1.808***	1.827***	1.703***	0.973	-0.0251	1.194
		(0.676)	(0.620)	(0.680)	(0.590)	(0.793)	(0.987)	(1.454)
Langue		-1.545**	-1.723***	-1.832***	-1.739***	-0.345	0.345	-0.127
		(0.647)	(0.572)	(0.623)	(0.564)	(0.809)	(1.084)	(1.424)
Religion		0.162	-0.195	-0.125	-0.143	0.570	1.263**	0.564
		(0.502)	(0.482)	(0.480)	(0.477)	(0.545)	(0.568)	(0.759)
Mortalité						-0.0228***	-0.0278***	-0.0497***
						(0.00634)	(0.00616)	(0.0103)
Démocratie		-0.738***					-1.517***	-1.834***
		(0.200)					(0.232)	(0.261)
Croissance				0.00753				0.0391**
				(0.00727)				(0.0158)
Minerais	-0.0776***	-0.0865***	-0.0812***					-0.209**
	(0.0281)	(0.0286)	(0.0269)					(0.0859)
Esperance								-0.0870***

								(0.0335)
Inflation								-0.000792**
								(0.000360)
Constant	-1.673***	-1.107***	-1.612***	-1.732***	-1.681***	-1.182***	0.0240	6.546**
	(0.121)	(0.285)	(0.250)	(0.252)	(0.251)	(0.305)	(0.379)	(2.566)
Observations	746	736	740	734	747	622	622	593
R2_p	0.0548	0.0928	0.0746	0.0624	0.0701	0.117	0.173	0.224
P	7.20	0	0	3.04	0	0	0	0
Chi2	42.10	60.44	57.48	48.33	55.08	61.21	99.90	106.3

Source : Toutes les variables sauf les données sur la fragmentation ethnique, linguistique et religieuse, proviennent d'Alesina et al. (2003). Robust standard errors in parentheses, * p <0,10. ** p <0,05. *** p <0,01

Notes : la variable démocratie représente 1 si le pays est démocrate et 0 sinon. Le seuil utilisé est 0,5%. C'est le seuil par défaut. Nous analysons l'évolution de la probabilité qu'un indice de la bonne gouvernance soit affecté par la fragmentation ou la probabilité qu'un pays soit politiquement stable lorsqu'une variable explicative change.

***Effet de la fragmentation ethnique** : Au seuil de 10%, la probabilité qu'un pays ethniquement fragmenté augmente de 12.07% lorsqu'il s'agit de l'indice de la stabilité politique mais décroit de 13.12 % lorsqu'il s'agit de l'autocratie, ce qui peut s'expliquer par le manque de régime démocratiques sans alternances dans la plupart des pays africains (tableau Quatre).

***Effet de la fragmentation linguistique et religieuse** : par rapport à la stabilité politique, l'indice décroit en raison de 6.2% et 3.1%, tandis qu'elle améliore le type de régime politique (il s'agit dans ce cas de la démocratie ; voir tableau Quatre).

*Effet de l'abondance des ressources naturelles : on note que l'abondance des ressources naturelles influence négativement la stabilité politique tout comme la démocratie. Au seuil de 10%, la probabilité qu'un pays fragmenté et riche en ressources minières n'améliore pas la stabilité politique et la démocratie est de 11% et 98%. Lorsqu'il s'agit des ressources pétrolières, au seuil de 10%, la probabilité est de 98% et 2% (voir tableau Quatre).

Table 4. Vérification de la Robustesse : Estimation Probit bivarié

	Variables endogènes	
	Stabilité politique	*Régime politique*
Croissance	0.0145*	0.0160***
	(0.00806)	(0.00558)
Mortalité infantile	-0.0203***	-0.0189***
	(0.00493)	(0.00401)
Ethnique	1.207**	-1.312**
	(0.530)	(0.522)
Langue	-0.624	1.272***
	(0.472)	(0.454)
Religion	-0.0319	0.848**
	(0.420)	(0.375)
Inflation	-0.000309	-0.000795
	(0.000506)	(0.000508)
Esperance de vie	-0.0351*	-0.0388**
	(0.0181)	(0.0173)
Rente pétrolière	-0.985***	-0.0191***
	(0.00343)	(0.00326)
Rente minière	-0.110**	-0.989***
	(0.0550)	(0.0160)
Constant	1.867	3.777***
	(1.381)	(1.320)
Observations	593	593
Chi2	255.4	266.1
Rho (Test de Wald)	-0.537***	-0.565***

Source : Toutes les variables sauf les données sur la fragmentation ethnique, linguistique et religieuse, proviennent d'Alesina et al. (2003). La variable Régime politique 1 si le pays est démocrate et 0 sinon. Avec * p <0,10. ** p <0,05. *** p <0,01

5.   Discussions des résultats

Les coefficients tels que présentés ci-dessus ne sont pas des impacts marginaux. Seuls leurs signes sont interprétables. Cependant, comme la majorité d'Etats pris dans l'analyse sont riches en ressources, le tableau Trois analyse l'influence de la fragmentation et les ressources naturelles sur la stabilité politique. Il ressort de ces estimations deux catégories de déterminants de la stabilité politique.

En premier lieu, on distingue les déterminants qui améliorent la stabilité politique, notamment, la rente pétrolière, la croissance, la fragmentation ethnique et religieuse (lorsqu'on considère l'équation 8). Dans

un pays à diversité de langue et religion, la stabilité politique s'améliore. En conclusion, ce n'est donc pas la diversité de langues ou religions qui pose problème mais l'instabilité politique ou absence d'un gouvernement démocratique qui crée de violence civile dans ces pays. Or, les ressources peuvent également procurer aux groupes ethniques les moyens financiers nécessaires pour faire la rébellion telles que les armes, le savoir-faire, les installations logistiques, le transport ou l'équipement militaire (ces résultats ont été prouvés par Humphreys et Weinstein, 2008).

En second lieu, on analyse les déterminants qui impactent négativement la stabilité politique. Nous avons notamment, la fragmentation linguistique, la mortalité infantile, l'inflation, l'espérance de vie, la nature de régime politique et la rente minière. Cependant, l'inclusion ou l'exclusion des différents ensembles de variables indépendantes n'a pas modifié substantiellement les résultats. Pour les indicateurs de la fragmentation ethnique, les résultats vont dans le même sens. Cela peut être dû au fait que la plupart des pays africains riches en ressources minières présentent des situations politiques instables. Et, en tant que tel, connaissent de la fragmentation linguistique et religieuse.

Les résultats confirment que pour tenir compte de la stabilité politique dans un pays à diversité des langues et des religions, on s'appuie sur la réforme des institutions démocratiques pendant que la diversité ethnique en est un obstacle (voir le tableau Trois). Dans l'ensemble, nous croyons que l'analyse fournit des preuves importantes que l'interaction entre les problèmes liés aux ressources soit particulièrement critique lorsque la rente pétrolière associée avec la fragmentation empêche également la stabilité politique (le cas des pays d'Afrique centrale riches en pétrole).

En effet, la diversité ethnique n'est pas un obstacle décisif au développement, mais elle génère des dilemmes difficiles. Les pays africains doivent stabiliser les régimes démocratiques, même si la démocratie n'est pas toujours nécessaire au développement comme en témoigne le succès exceptionnel de la Chine. On observe cependant que la démocratie est importante pour le développement lorsque la société a une forte diversité ethnique (Collier, 2008, *Op.Cit.*). Cet auteur confirme que la démocratie semblerait mieux convenir que l'autocratie aux sociétés à variétés ethniques. En 2007, les élections au Kenya l'ont montré. Lorsque l'allégeance des électeurs se fait sur la base de l'ethnicité, il y a très peu d'intérêt pour les gouvernements à fournir des biens publics à l'ensemble de la nation. Il en résulte des stratégies de coalition gagnante, à l'initiative desquelles se trouvent quelques groupes ethniques (Collier, 2008, *Op.Cit*). La grande diversité ethnique de l'Afrique rend cependant l'autocratie dommageable au développement. Ainsi, les pays africains riches en ressources ne possèdent pas l'option de la croissance à travers l'autocratie. De plus, la diversité ethnique

affaiblit la capacité de la société à gérer efficacement les services publics dans la transparence.

Conclusion

Ce papier avait pour objectif d'analyser l'impact de la fragmentation sur la stabilité politique dans les pays africains avec une abondance en ressources naturelles. Sur le plan théorique, la fragmentation amplifie l'instabilité politique (Collier et Hoeffler, 2004 ; Taydas et Peksen, 2012 ; Wegenast et Basedau, 2014). Ainsi, elle peut réduire le revenu dans les pays riches en ressources (Hodler, 2006). Cette étude s'est inspirée des travaux empiriques des auteurs tels que Humphreys (2005, *Op.Cit*), Wegenast et Basedau (2014, *Op.Cit*). Il ressort des résultats obtenus deux types de déterminants : d'une part, la rente pétrolière, la croissance, la fragmentation ethnique et religieuse qui sont des facteurs amplificateurs de la stabilité politique et, d'autre part, la fragmentation linguistique, la mortalité infantile, l'inflation, l'espérance de vie, la nature de régime politique (autocratie) et la rente minière qui sont des facteurs néfastes à la stabilité politique.

Deux suggestions peuvent être faites en rapport avec les principaux résultats obtenus. En premier lieu, les pays africains doivent mettre en œuvre des mesures qui favorisent la décentralisation budgétaire pour réduire les méfaits de la fragmentation sur la stabilité politique. En second lieu, ils devraient poursuivre leurs efforts de respect du calendrier électoral afin de limiter la violence civile et améliorer la stabilité politique. La crise sanitaire liée au COVID-19 montre qu'il est impérativement important de décentraliser.

Liste des Pays retenus dans le panel

Algérie, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroun, Tchad, Congo Brazzaville , Cote d'Ivoire, Egypte, Gabon, Gambie, Ghana, Guinée, Guinée Bissau, Guinée Equatoriale, Kenya, Lesotho, Liberia, Libye, Madagascar, Malawi, Mali, Maroc, Mauritanie, Mozambique, Namibie, Niger, Nigeria, Ouganda, RDC, République Centrafrique, RSA, Rwanda, Sao Tomé, Sénégal, Sierra Leone, Soudan, Sud Soudan, Tanzanie, Togo, Tunisie, Zambie, Zimbabwe.

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Dynamiques territoriales des *Niayes*: divergences économiques entre industrie extractive minière et agriculture (littoral Nord du Sénégal)

Résumé

Cet article a pour objectif l'analyse de l'insertion des entreprises minières dans les *Niayes* à travers l'implication socio-économique des déplacements des populations et l'impact de la RSE sur le développement local. Cet article essaie de montrer comment ces populations autochtones du littoral Nord sénégalais sont détachées de leur territoire et de leurs activités productives de subsistance. Depuis l'installation des entreprises minières, la zone des *Niayes* connait de fortes dynamiques socio-économiques s'exerçant sur son environnement physique et humain à travers l'emprise des sociétés sur les espaces agricoles et ceux habités. Le développement du secteur minier induit une exclusion des communautés locales habitant les sites et qui sont relogées ailleurs. La documentation faite sur les questions de conflits dans les espaces miniers et des enquêtes de terrains et entrevues ont permis de comprendre les dynamiques socio-spatiales et économiques dans les zones minières en général et dans les *Niayes* en particulier. Les résultats montrent que les *Niayes* ont fortement connu l'intervention des sociétés minières qui causent la modification de cet environnement primitif, la réduction des espaces agricoles (les parcelles cultivées sont réduites) et déplacent des habitations en leur faveur. Cette situation fait des *Niayes* un espace d'enjeu socio-économique et écologique conduisant à l'apparition de divergences conflictuelles autour des sites miniers.

Mots clés: conflit, dynamique, horticulture, mine, *Niayes*, RSE

Territorial Dynamics of the *Niayes* : Economic Differences Between the Mining Industry and Agriculture (Northern Coast of Senegal)

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Abstract
        This article aims to analyze the integration of mining companies in the Niayes through the socio-economic implication of the displacement of populations and the impact of CSR on local development. This article tries to show how these indigenous populations of the northern Senegalese coast are detached from their territory and their productive subsistence activities. Since the establishment of mining companies, the Niayes area has experienced strong socio-economic dynamics exerted on its physical and human environment through the influence of societies on agricultural and inhabited areas. The development of the mining sector leads to the exclusion of local communities living on the sites and who are relocated elsewhere. The documentation made on conflict issues in mining areas and field surveys and interviews made it possible to understand the socio-spatial and economic dynamics in the mining areas in general and in the Niayes in particular. The results show that the Niayes have greatly experienced the intervention of mining companies which cause the modification of this primitive environment, the reduction of agricultural spaces (cultivated plots are reduced) and move houses in their favor. This situation makes the Niayes a socio-

economic and ecological area of stake, leading to the emergence of conflicting differences around the mining sites.

Introduction

L'espace géographique évolue lentement, parfois rapidement, voire brutalement quand un système économique se substitue à un autre qui a structuré l'espace suivant une logique différente (Deshaies, 2006). On assiste alors à une renaturation de l'espace considéré comme support de telle activité au préalable. Avec le développement de l'industrie, surtout au milieu du XXème siècle, de vastes portions des espaces littoraux sont convoitées, conduisant parfois à des aménagements importants.

Ces espaces assurent un rôle décisif dans l'alimentation humaine. La fonction des littoraux est importante à relever; ils sont des zones stratégiques et des écosystèmes à multi usages (où se concentrent diverses activités économiques: pêche, tourisme, ports, urbanismes…). C'est le cas du littoral Nord sénégalais où le secteur industriel (extractions minières, des carrières, implantation d'usines de transformation) prend progressivement le dessus sur le secteur agricole qui était la principale activité de la zone. Ce phénomène est plus remarquable dans les *Niayes*, qui sont des bas-fonds hérités du Pluvial Tchadien (12 000 – 8 000 ans *BP*) avec leurs sols hydromorphes organiques (Sy, 2015), formant un apport considérable dans l'économie agricole du Sénégal.

Depuis l'installation des sociétés extractives minières, les *Niayes* sont devenues un espace de projets, d'acteurs aux intérêts divergents, un espace d'enjeux. Ce nouveau paradigme génère une discontinuité que Brunet, Ferras, et Thery (2005: 161) définissent comme étant une « rupture apparaissant dans l'espace ou dans le temps ». Cette discontinuité est le produit de l'interaction entre deux variables: une variable continue qui, par accumulation, rétroaction ou tension finit par transformer le phénomène et fait apparaitre un autre système. Dans ce cadre, la dynamique des *Niayes* change complètement d'angle et présente des divergences économiques entre agriculteurs et sociétés extractives minières dont les activités sont causes de transformations de la vocation du milieu.

Les activités extractives minières à ciel ouvert sont consommatrices d'espaces et excluent toute autre activité se trouvant dans l'espace polarisé. Elles sont facteurs de déplacements de populations locales et de profondes transformations socio-économiques du milieu.

La principale activité économique est l'horticulture qui subit la pression du secteur industriel ; le secteur horticole est de plus en plus abandonné par les populations locales à cause du processus d'expropriation de

leurs terres souvent héritées de leurs ancêtres depuis des générations. Face aux risques avérés de paupérisation, les entreprises extractives minières présentes dans la zone des *Niayes* déploient des stratégies relevant de la Responsabilité Sociétale et Environnementale (RSE) pour soutenir le développement socio-économique à travers la promotion de l'emploi local et la construction d'infrastructures sociales.

1.   Présentation du milieu d'étude et approche méthodologique
1.1.   Présentation du milieu d'étude

Les *Niayes* forment une bande longeant le littoral Nord du Sénégal de Dakar, au sud du Delta du fleuve Sénégal.

Sur le plan administratif, les *Niayes* s'étendent sur les parties Ouest des régions de Saint-Louis, Louga, Thiès et Dakar où cette zone écogéographique est organisée en trois compartiment: les *Niaye*s Nord et Sud s'étendent de la Région de Saint-Louis à la région de Louga ; les *Niayes* Centre englobent pratiquement l'espace situé dans la région de Thiès communément appelé Diender (de l'arrondissement de Niakhène à Keur Moussa) et enfin les *Niayes* Sud partent de l'arrondissement de Sangalkam à la Haute banlieue de la ville de Dakar (figure 1).

Figure 1 : Localisation de la zone d'étude
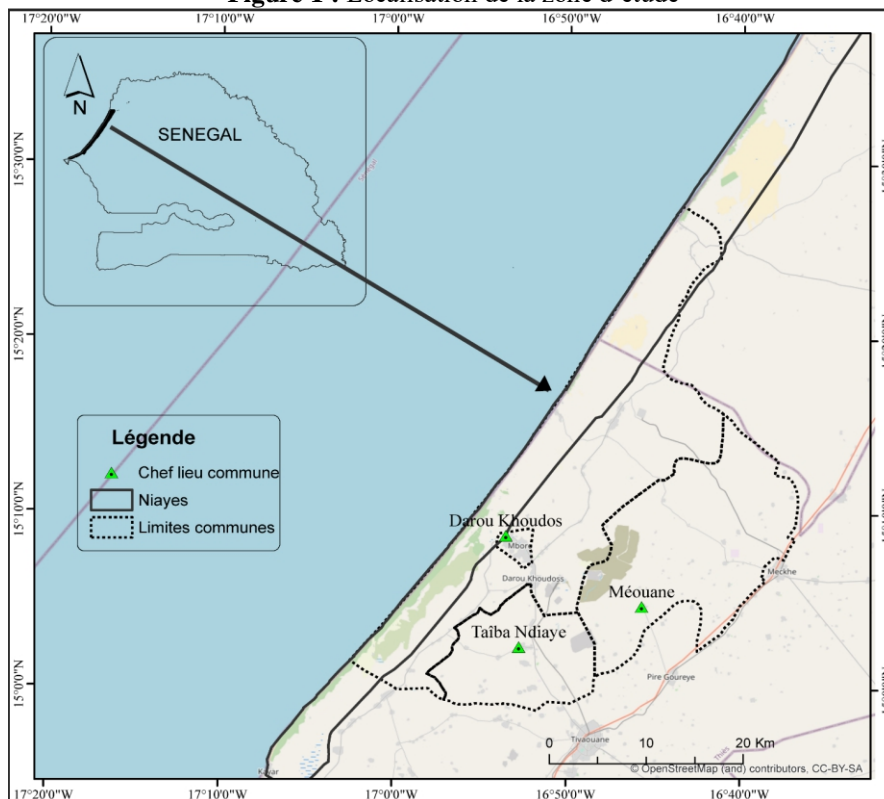
Source: USGS/ DTGC, imagerie : OpenStreetMapp 2020

Cette carte présente les chefs-lieux de commune que sont Taïba Ndiaye, Méouane et Darou Khoudoss. Ce sont des communes d'arrondissement regroupant plusieurs villages et hameaux. Avec 2 759 km^2 de surface, la bande se caractérise par une alternance de systèmes dunaires : dunes vives blanches adjacentes au trait de côte, dunes jaunes semi-fixées et dunes rouges continentales dites ogoliennes, à l'est. Les bas-fonds qui assurent les transitions entre ces systèmes dunaires sont appelés *Niayes* ou unités morphopédologiques assimilées, jouant les mêmes fonctions économiques : maraichage et/ou arboriculture fruitière. Cet environnement est naturellement favorable aux activités agricoles à cause de son évolution morphopédologique confondue au pluvial Tchadien (12 000 – 8 000 ans *BP*). Durant cet épisode morphoclimatique humide, une importante biomasse végétale a proliféré dans le secteur, piégée dans des dépressions, donnant des sols hydromorphes organiques (Sy, 2015).

En somme, les *Niayes* sont caractérisées par des bas-fonds sous lesquels la nappe phréatique est peu profonde, un climat maritime doux et humide et des vents forts et relativement constants. La zone présente une végétation diversifiée où coexistent des espèces reliques à affinité guinéenne avec des espèces sahéliennes steppiques. Ce milieu à fortes potentialités agricoles fournit quelque 60 % de la production maraîchère du Sénégal (SONED, 2013).), ce qui assure l'approvisionnement de l'agglomération dakaroise en produits frais. Dans les *Niayes*, de cette culture artisanale de produits maraîchers et fruitiers succède presque le mode ancien d'exploitation des palmiers à huile avec le vin de palme et des produits pour la vannerie et la toiture (Coulibaly, 1998). Cette dynamique agricole a été progressivement perturbée par l'apparition d'activités extractives minières dont le phosphate qui fait du Sénégal le dixième producteur mondial.

1.1.1. Le contexte de l'insertion des entreprises minières dans le milieu

L'exploitation des ressources minières est liée à l'évolution géologique et géomorphologique du littoral sénégalais où d'importantes potentialités agronomiques sont cartographiées *en sus* des gisements miniers du sous-sol. Avec les réformes de la Banque Mondiale (BM) promouvant les investissements étrangers, le Sénégal, tout comme les autres pays africains, a connu une explosion de son secteur industriel. Pour attirer des investisseurs, les gouvernements africains ont adopté de nouveaux codes miniers et développé un ensemble de dispositions institutionnelles légales et fiscales, rendant le « climat des affaires » plus favorable (Rubbers, 2013). Ainsi, le secteur extractif sénégalais est de plus en plus diversifié avec l'exploitation de l'or, au sud-est, du zircon et du phosphate sur le littoral Nord et les phosphates de Matam récemment mis en exploitation pour la fabrication d'engrais. Cependant, l'extraction et la transformation des phosphates dominent le

secteur minier du Sénégal. Dans les *Niayes,* les Industries Chimiques du Sénégal (ICS) exploitent le gisement de phosphate de calcium à ciel ouvert, qui a démarré tout d'abord par le gisement de phosphates de Taïba découvert de 1948 à 1950 par le bureau minier de la France d'Outre-mer (BUMIFOM). Ce gisement s'étend dans un triangle de 250 km² (Seck, 2007), couvrant trois secteurs : Keur Mor Fall, au nord, Ndomor Diop, au sud-ouest, Tobène, au sud-est. Le gisement se présente en couches horizontales de 6 à 8 m de puissance sous 20 à 25 m de terrain stériles et les activités ciblent la récupération partielle des Schlamms[1], l'exportation d'acide phosphorique, d'engrais solide (DAP, DSP, SSP et NPK) et de phosphate *en sus* de la production et la vente de produits phytosanitaires à travers la filiale SENCHIM basée à Mbao. L'exploitation des phosphates a commencé dans les années 1950 par la Compagnie Sénégalaise des Phosphates de Taïba (CSPT) et à partir des années 1981, les Industries Chimiques du Sénégal (ICS) ont commencé la transformation des phosphates en acides phosphoriques avant de fusionner avec la CSPT en 1996.

Se trouve également, dans cette zone (au nord du village de Diogo), la société d'exploitation du minerai zircon dont l'exploitation a démarré en 2013. La commune de Darou Khoudoss qui accueille ces deux usines se présente ainsi comme l'une des collectivités territoriales les plus riches en ressources du pays. Cette richesse a rendu l'écosystème des *Niayes* très attractif, fortement convoité par les activités humaines, ce qui explique sa dynamique économique et écologique.

1.2. Approche méthodologique: la collecte des données de terrain

Les résultats présentés dans cet article sont issus de données de terrain collectées dans les villages situés dans l'espace d'exploitation du phosphate notamment les villages Keur Mor Fall, de Ngaye Diagne, de Darou Khoudoss, de Ngakham, de Ndomor Diop. Les enquêtes ont été faites auprès de 35 personnes s'agissant d'exploitants agricoles et de chefs de familles déplacées. Les enquêtes sont complétées par des entretiens avec les autorités locales (maires), quelques responsables au sein de l'usine, les présidents de GIE et quelques-uns des chefs de villages. Ces données de terrain ont été complétées par l'exploitation bibliographique. L'ensemble de ces informaïons a permis d'analyser les impacts de l'industrie extractive minière sur les activités agricoles. Le traitement des données a permis de faire ressortir des résultats significatifs.

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[1] Espaces déjà exploités et abandonnés par l'entreprise minière et occupés par les agriculteurs

2.   Présentation des résultats

Les résultats présentés portent sur l'avancée du front minier engendrant le déplacement des populations et sur les enjeux socio-économiques liés aux exploitations.

## 2.1.   Avancée du front minier et déplacement des populations riveraines

Qualifiées de « mangeurs d'espaces », les entreprises minières dont l'exploitation est à ciel ouvert s'accaparent du littoral sénégalais qui représente un atout non négligeable dans le secteur agricole et écotouristique, ce qui cause de sérieux problèmes d'aménagement. L'emprise minière entraine l'engloutissement de terres agricoles et pastorales, supprimant progressivement l'exploitation des ressources primaires, mais aussi explique le déplacement des populations riveraines.

2.1.1. L'avancée du front minier dans les Niayes

La promotion des grands investissements dans le monde est devenue une réalité au Sénégal et la zone des *Niayes* est fortement touchée. En effet, la présence des industries minières prend de plus en plus d'ampleur et occupe des terres jadis destinées à l'agriculture et/ou à l'élevage, faut-il le rappeler. L'installation de l'entreprise Grande Côte Operation (GCO) et la construction d'une centrale à charbon à Mboro viennent s'ajouter à l'occupation de terres par les sociétés qui y exploitent le phosphate depuis 1957. Des études avaient déjà montré que depuis le démarrage des ICS, les travaux d'extraction minière exercent une forte pression sur le foncier (IPAR, 2015).

Le processus spatial affectant les populations villageoises se trouvant sur la trajectoire de la mine se résume en un cycle d'expulsion, de réinstallation, de dépossession secondaire, de prise en charge des espaces miniers abandonnés (Kesseler, Tine, 2004). La phagocytose des emprises villageoises est progressivement observée en défaveur des espaces culturaux (figure 2).

Figure 2. Progression du front minier
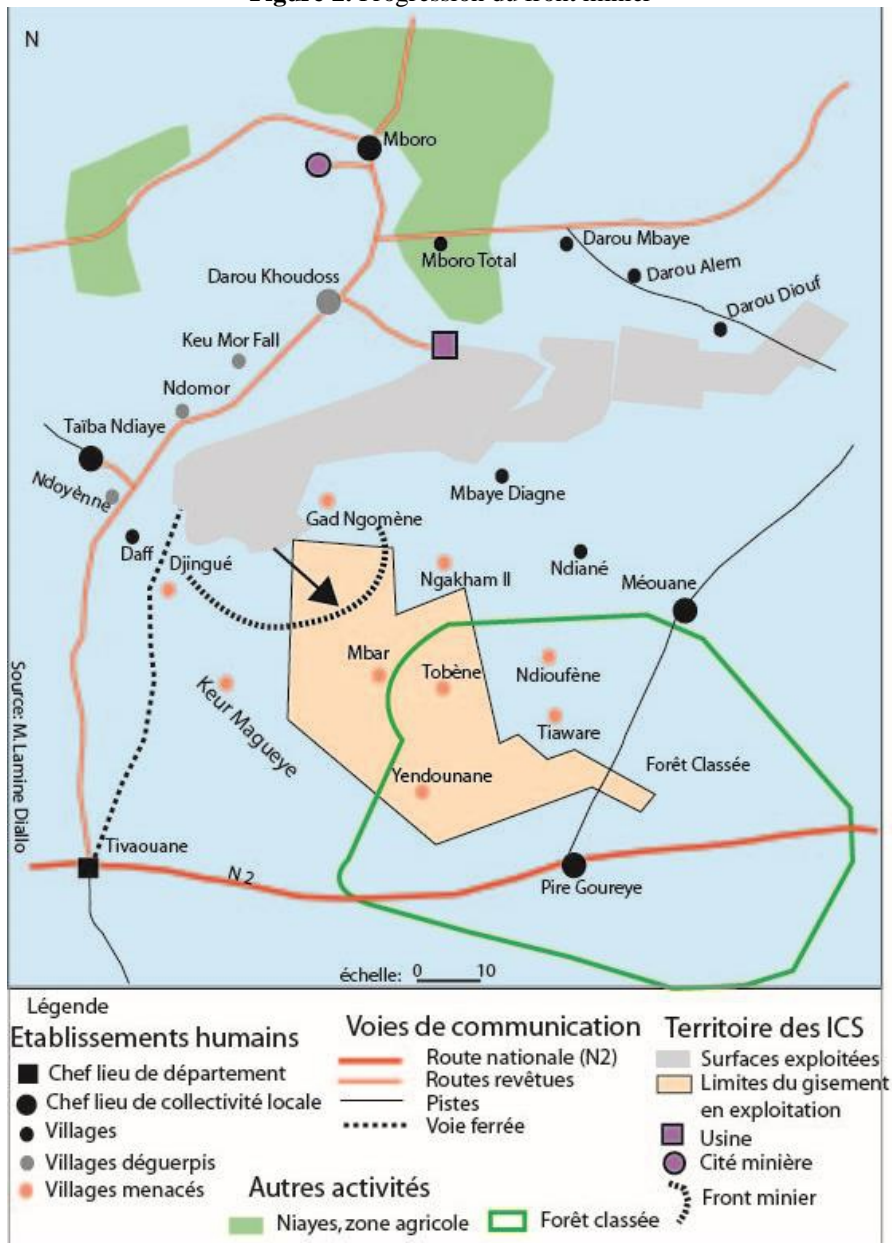
Source: Google Mapp, d'après Diallo (2017)

La figure 2 met en relief la géographie de l'emprise des Industries Chimiques du Sénégal (ICS) sur l'écosystème des *Niayes*. Depuis son installation, l'entreprise minière ne cesse d'agrandir sa zone d'exploitation. La progression du front minier est visiblement remarquée aussi bien sur les espaces d'habitation que sur les espaces classés. L'extraction du minerai de

phosphate occasionne un déplacement de populations jadis fixées par le potentiel agronomique offert par la nature.

Photo 1 : Avancée du front minier des ICS de 1984 à 2020
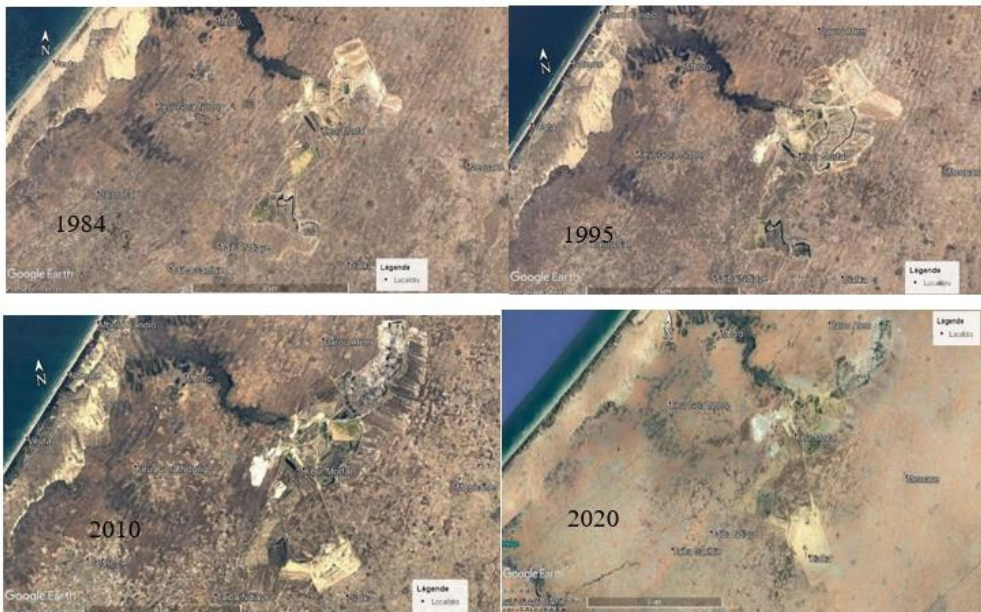
Source : Google Earth, 2020

L'image 1 matérialise l'espace d'extraction et d'exploration minière des ICS depuis 36 années dans les *Niayes* Centre où leur emprise sur l'espace devient de plus en plus préoccupante. Les anciennes terres des agriculteurs horticoles sont rattrapées et deviennent une possession de l'usine des industries chimiques du Sénégal. Le système d'exploitation et les infrastructures qui l'accompagnent ont entrainé d'énormes pertes de terres, bloquant les aménagements agricoles en tant que premières activités économiques des populations de la Commune, mais aussi cause de déplacements de villages et hameaux environnants des sites miniers.

2.1.2. Le déguerpissement de villages et ses conséquences

Le dernier cas d'expropriation et de délogement de populations opérés par les ICS concerne les villages de Mbar Ndiaye et de Mbar Diop, situés dans la Commune de Méouane. Le processus de déplacement de ces deux villages a été marqué par des conflits entre l'entreprise et les communautés. Le village de Diogo qui se trouve dans la Commune de Darou Khoudoss est aussi déplacé par l'entreprise Grande Côte Operations (GCO). Ces déplacements sont accompagnés d'indemnités permettant aux populations de maintenir leurs conditions de vie, mais dans certains cas, on remarque un changement radical des modes de production, des stratégies de survie à travers notamment la

recomposition socioéconomique des personnes déplacées, qui deviennent des agriculteurs (ceux qui cherchent des terres ailleurs), des commerçants, certains émigrent vers les pays occidentaux, voire vers l'Amérique latine.

2.1.2.1. Les barèmes d'indemnisation

L'article 76 du code minier (2003) indique que:

« L'occupation des terrains par le titulaire de titre minier, à l'intérieur comme à l'extérieur des périmètres qui lui sont attribués, donne droit aux propriétaires des terrains ou aux occupants du sol à une indemnisation pour tout préjudice matériel causé. Les frais, indemnités et, d'une manière générale, toutes les charges relevant de l'application des dispositions sur l'occupation des terrains nécessaires sont supportés par le titulaire du titre minier ».

Les compensations constituent cependant le point de discorde des processus de déplacement (physique et économique) de la population (Diallo, 2017). Les barèmes d'indemnisations proposés par les entreprises sont souvent négociés (tableau 1). L'avancée du front minier est perçue par certains riverains comme une menace et par d'autres comme une opportunité pour s'enrichir (ibidem). Ceux qui le perçoivent comme une menace croient qu'en dehors de l'agriculture, ils ne pourront exercer aucune autre activité et pour ceux qui pensent que c'est un moyen de s'enrichir, quant à eux, ont des idées de projets qu'ils pensent pouvoir réaliser avec les indemnités. C'est le cas de quelques commerçants et des personnes qui ont investi dans le secteur du transport, d'autre font l'élevage intensif.

Tableau 1: Barème établi par les ICS

Espèces	Anciens barèmes (Etat 1974)	Barèmes ICS (1994)	Barèmes renégociés		
			Barèmes proposés par les ICS (2000)	Barèmes proposés par les communautés villagoises	Barèmes arrétés par les ICS
Production (vivrier marchand et céréales)					
Manioc (/ha)	120 000	200 000	250 000	650 000	400 000
Arachide (/ha)	45 000	80 000	100 000	350 000	200 000
Niébé (/ha)	15 000	80 000	100 000	200 000	160 000
Mil (/ha)	30 000	80 000	100 000	200 000	160 000
Arbres fruitiers					
Manguier	15 000	22 500	28 125	50 000	40 000
Papayer	2 000	6 000	7 500	-	12 000
Citronnier	3 000	3 000	3 750	-	6 000
Goyavier	2 000	3 000	3 750	-	6 000
Anacardier	2 500	22 500	28 125	50 000	40 000
Cocotier nain			3 500		22 000
Autres arbres (usage culturel)					
Ronier	7 500	7 500	9 350	-	30 000
Cadd	2 000	3 000	3 750	-	6 000

Source : ICS/Talla Fall chef de village Madina Fall

Ce barème ne concerne pas les habitations mais seulement les exploitations agricoles, donc il reste toujours négociable. Si d'aucuns pensent que les indemnisations sont largement en dessous des normes, d'autres personnes déplacées y voient leur réussite économique et investissent dans divers domaines : agriculture, élevage extensif, embouche bovine, transport (Diallo, 2017). Néanmoins, l'expropriation des populations suscite toujours des conflits ou de malentendus entre autochtones et sociétés minières.

2.1.2.2. Le processus d'expropriation des terres et de relocalisation des villages environnants des sites miniers

En raison de l'avancée progressive du front minier des ICS, la situation actuelle des *Niayes* dans la Commune de Darou Khoudoss est devenue problématique. La forte pression et la compétition exacerbée qui s'exercent sur l'espace des *Niayes* ont provoqué une transformation des rapports sur le foncier, annonçant une évolution du statut de la terre. La terre devient objet d'un enjeu complexe: chaque catégorie socio-professionnelle (société minière, agriculteur, agro-industriel, etc.) développe des stratégies de conquête foncière en vue de préserver les intérêts spécifiques de son mode de production.

Tableau 2: Villages déplacés et populations de 1962 à 2005

Villages déplacés	Darou Khoudoss	Keur mor or Fall	Ndom or Diop	Daff	Thiamrous	Thiambene	Mérina Fall	Tanime	Ngaye Diagne	Keur magor	Keur A. Fall	Diobass	Ndoyène	Total pop.
Date	1962	1966	1974	1975	1979	1980	1980	1982	1988	1996	1996	-	2005	-
Pop.	1777	255	1084	148	155	155	317	125	442	292	45	163	206	5168

Sources : Seck, 2007

Le tableau 2 montre les villages déplacés par les entreprises depuis le début de leurs activités d'extraction des ressources minières. Actuellement, 15 villages sont délogés. Cela explique la dynamique spatiale de la zone et la progression du front minier. Toutefois, beaucoup parmi les populations déplacées vivent encore très mal leur déguerpissement. Ils se plaignent d'avoir perdu leurs terrains de cultures et donc pour la plupart, leur principal moyen de production. La photo 2 symbolise les villages de Mbar Ndiaye et de Mbar Diop déplacés par les ICS puis relogés le long de la route nationale N°2 entre les villes de Pire et de Tivaouane sur un espace de 25 ha.

Photo 2: Vue partielle d'un habitat du village de Mbar

Cliché : Sy B. (2019)

Le premier site et l'actuel emplacement des villages délocalisés sont distants de 9 km. Les ICS ont débloqué quelque 7 milliards de franc CFA pour la construction de 300 concessions pour accueillir la population des deux villages de la Commune de Méouane. Dans ce nouveau site bien aménagé pour les populations de Mbar Ndiaye, elles se plaignent toujours du manque d'eau et d'électricité, ressources indispensables pour vivre. Ainsi, au-delà de l'apparence, le déplacement économique cause plus de mal et à long terme. Les personnes déplacées empruntent des voies divergentes de reconversion au succès incertain : commerce, migration, transport, maçonnerie, etc.

2.2. Enjeu socio-économique et rôle de la RSE

L'industrie minière est un secteur d'activités lucratives pour les États, mais les retombées économiques et sociales sont extrêmement limitées dans les localités environnantes. L'étendue des conséquences négatives induites par le développement des projets miniers soulève des questions (Komassi, 2017) relatives au rôle important que l'industrie doit jouer dans le développement local. Les mines à ciel ouvert sont une menace pour les ressources agricoles et forestières car ce mode d'exploitation est modificateur du cadre socioéconomique et de l'environnement.

2.2.1. Enjeu socio-économique: focus sur l'horticulture

Les processus adverses déclenchés par la mise en valeur des ressources minières et toutes les autres activités d'extraction engendrent des risques

environnementaux (Gbaguidi, 2016) et de nouvelles situations sociale et économique dans les milieux d'insertion. Néanmoins, ce changement de situation s'accompagne toujours d'enjeux socio-économiques et de nuisances qui sont plus visibles sur le plan environnemental et se manifestent par la destruction du paysage naturel: dégradation des sols et du couvert végétal, pollution de l'air et des ressources hydriques.

Au plan socio-économique, on assiste à un recyclage d'une partie des espaces abandonnés par les ICS. La production horticole se fait dans les bassins de *schlamms*, qui sont de grandes excavations qui accueillent les résidus de phosphates. Les bassins de *schlamms* font l'objet de convoitise, d'une part, parce qu'elles sont riches en fertilisants et, d'autre part, à cause de la rareté des espaces de cultures. Ces espaces initialement agricoles, sont devenus des zones d'exploitation minière avant d'être, à nouveau, affectés à l'agriculture. En même temps, les formes d'exploitation agricoles ont évolué passant de l'agriculture vivrière (mil, arachide) au maraîchage et à l'arboriculture fruitière. Cependant, les bassins de *schlamms* demeurent une propriété de l'entreprise qui peut les récupérer au besoin. Cela entraine un nouveau cycle de déplacement économique.

Dans la commune de Darou Khoudoss, l'arboriculture fruitière se fait dans les vergers sur sols Dior (sableux). Les vergers peuvent aussi s'associer au maraîchage où la plupart des plantes fruitières sont greffées pour optimiser les rendements, améliorer la qualité du fruit *en sus* de sa résistance aux maladies. Le greffage permet aussi aux plantes mâles de se reproduire. Cela se fait beaucoup plus avec les manguiers et les espèces de la famille des rutacées: citronniers, orangers, mandariniers (photo 2).

Photo 2 : Vergers de manguiers dans les Niayes de Darou Khoudoss

Source: Ndaw (2018)

La photo 2 montre une forme de mise en valeur de l'espace. Ce verger de manguiers se situe à près de quatre kilomètres du village de Darou Khoudoss. Il fait partie de la zone non encore exploitée par les industriels. Les arbres fruitiers sont très adaptés aux sols des *Niayes* et y sont très développés. D'ailleurs, la zone des Niayes fournit 60 % de la production et 50 % des exportations horticoles du Sénégal (SONED, 2013). Néanmoins, il y a toujours des contraintes liées à la réduction de l'espace et à l'intrusion des produits toxiques qui affectent considérablement les feuilles des plantes et font tomber les fleurs et les fruits affectant ainsi négativement les rendements des plantes. De plus, les tuyaux d'eau des ICS passent par les champs arboricoles et un sapement est susceptible de se produire à tout moment. Ce qui a comme conséquence un ensablement des parcelles agricoles. Aussi, les bassins occupés par les horticulteurs sont parfois réutilisés par les ICS pour un éventuel déversement des eaux usées. Cela met en péril tout ou partie d'un investissement et donc cause une perte considérable de la production.

En dépit d'un potentiel agro-économique et écologique important, les rapports entre activités agricoles et minières sont contradictoires. L'industrie extractive réduit les surfaces d'emblavement, mais participe, parallèlement à l'intensification et à la modernisation de l'agriculture. Les contraintes à l'activité horticole se traduisent par le rétrécissement de l'espace, résultant de l'expansion des carrières, la spoliation des terres, l'épuisement des ressources hydriques ainsi que la dégradation sans précédent de l'environnement naturel des *Niayes*. En d'autres termes, l'exploitation des ressources minières est

négative pour l'environnement et le développement socio-économique des *Niayes*. Toutefois, les entreprises minières, dans le cadre de leur politique de responsabilité sociétale et environnementale, déploient des actions sociales susceptibles d'apporter des changements socio-économiques positifs. Elles disposent également des mécanismes de gestion des dégâts environnementaux et des plaintes.

2.2.1.2. La Responsabilité des entreprises minières

La responsabilité sociale d'entreprise (RSE) est l'engagement que prend une entreprise en vertu duquel elle gérera les effets sociaux, environnementaux et économiques de ses activités de façon responsable et conforme aux attentes du public.

Conscientes des enjeux conflictuels liés à l'exploitation des ressources minières et les effets environnementaux induits, les compagnies minières développent des stratégies en vue de créer des conditions favorables à leurs activités. Ainsi, la RSE s'inscrit dans la dynamique de rendre les activités d'exploitation minière socialement acceptables. Il s'agit entre autres de financer la construction d'écoles, l'approvisionnement en eau potable et l'amélioration des services de santé. La participation des entreprises minières au développement local passe d'un côté, par la redistribution des redevances minières par l'État Central et de l'autre côté, par le financement des actions sociales à l'échelle locale.

C'est dans cette perspective qu'il importe de noter l'implication active des Industries Chimiques du Sénégal (ICS) et la Grande Côte Operations (GCO) dans les processus de développement local des *Niayes*. La politique de la RSE qui en résulte couvre la gestion de l'environnement (la réhabilitation des sites miniers, le développement d'espèces florales dans ces sites réhabilités ou tout simplement reforestation, décontamination des sols et des eaux de surfaces et souterraines), la création d'emplois et l'amélioration des services de santé et d'éducation. Par exemple, c'est dans cet élan de recherche de conditions propices à l'activité minière que le lycée Taïba-ICS de Mboro a été construit. De même, plusieurs villages bénéficient de l'approvisionnement en eau potable. Les populations riveraines ont également la possibilité d'accéder au centre de santé des ICS. La GCO déroule également une politique très similaire dans sa zone d'exploitation avec les villages riverains.

3. Éléments de discussion des résultats

Les *Niayes* polarisent 60 % de la production horticole du Sénégal, d'une part, mais subissent la contrainte des diverses interventions ralentissant ses performances socio-économiques, d'autre part. La ressource foncière étant le principal support de toutes les grandes activités qui se développent dans le milieu, est en train d'échapper aux populations autochtones. La question

foncière a toujours été au cœur des préoccupations des décideurs politiques surtout en Afrique en raison de la convoitise dont la terre fait l'objet et les enjeux qu'elle suscite de la part des différents utilisateurs et usages au sein des communautés.

La gestion foncière au Sénégal est encadrée par des textes de lois qui cohabitent de manière indue avec des pratiques coutumières encore vivaces, notamment l'appropriation et l'accès aux terres du domaine national avec la loi 64-46 du 7 juin 1964. La forte pression foncière consécutive à la recherche de profits s'exerçant sur l'espace des *Niayes* a provoqué une transformation des rapports fonciers et une évolution du statut de la terre. Cette dernière devient l'objet d'un jeu multiple: conquête foncière, exploitation des ressources du sol et du sous-sol. Aux regards des investisseurs du secteur minier, les *Niayes* présentent des atouts économiques à exploiter alors qu'ils oublient qu'en réalité la principale activité des autochtones s'oppose à leurs objectifs. C'est cette opposition qui entraine des divergences dans l'occupation et l'utilisation des terres dans les *Niayes* du Sénégal.

Toutes les compagnies minières se trouvant dans une situation paradoxale où leurs pratiques sont mises en cause, développent des activités contradictoires aux réglementations environnementales. Cela entraine des conflits autour des projets miniers. Les zones minières du Sénégal enregistrent des cas de conflit autour des indemnisations et de plus en plus de villages déplacés. Dans l'Ouest du Sénégal, les tensions entre entreprises et riverains sont anciennes. C'est le cas des conflits entre Rufisque et Bargny autour de la SOCOCIM (Magrin et *al.* 2006). Leblanc (2007, p. 16) souligne que le phénomène de déplacement massif est plutôt nouveau, il date de l'avènement de l'usage généralisé des méthodes d'extraction à ciel ouvert qui prirent de l'importance depuis le XIXème siècle et répandu en Afrique de l'Ouest depuis l'explosion minière des années 1980 où l'investissement étranger a pris un rôle prépondérant.   C'est le cas pour la mine de Tarkwa de Goldfield Ghana Ltd qui a déplacé plus de 20 000 individus au Ghana. C'est ce même phénomène qui est connu dans les mines d'or au Pérou (De Evache, 2013: p. 69).

La variable territoire joue un rôle essentiel dans le processus d'expansion des frontières minières au Sénégal. La zone écogéographique des *Niayes* consacrées à la production horticole connait l'introduction considérable des concessions minières qui sont actuellement un indicateur de son évolution. Une telle dynamique des exploitations minières a conduit à l'émergence de nouvelles formes d'activités (Fall, 2013) qui reconfigurent cette partie du littoral Nord du Sénégal. On assiste ainsi à une mutation progressive des espaces ; d'un espace typiquement agricole, les *Niayes* sont devenues un centre d'accueil d'activités industrielles intenses qui font d'elles une zone dynamique et complexe.

Sur tout le littoral sénégalais, l'industrie prime sur toutes les autres activités économiques surtout l'agriculture alors que celle-ci est un des piliers de l'économie nationale. D'après Mbow (2017, p. 148) la contribution du secteur agricole au PIB au cours de ces dix dernières années n'a pas dépassé 13 %. Cette domination des industries devient une réelle menace pour l'agriculture horticole mais aussi pour la sécurité alimentaire du pays car, comme précisé dans le rapport d'IPAR de 2015, quelque 60 % de la production nationale de légumes et de fruits proviennent des *Niayes.* La productivité agricole des *Niayes* dépend de son écosystème qui donne avantage à cette activité et aux autres systèmes de production. Inclure des projets miniers dans cette zone écogéographique, revient à priver les agriculteurs de leur principale source de revenu. Autant que la terre est un facteur déterminant de l'économie industrielle autant elle l'est pour la sécurité alimentaire.

En effet, une meilleure compréhension de sa dynamique d'utilisation facilite la planification de sa mise en valeur et sa protection. L'exploitation minière à ciel ouvert va toujours de pair avec la modification de paysage. On assiste à une perturbation de l'écosystème (air, eau, sol) des *Niayes*, une destruction de l'habitat naturel des animaux et des plantes et même des populations, et la réhabilitation des dommages causés par l'exploitation prend plusieurs décennies. D'un environnement typiquement agricole, les *Niayes* sont devenues une zone purement industrielle du fait de l'exploitation de ses ressources diversifiées.

Les populations des villages déplacés connaissent une transformation de leur cadre de vie et à plus forte raison, celle des modes de vie. On assiste alors à une « rupture du champ des habitudes » (Torre, 2008 : 8) ou encore une rupture des liens sociaux ou bien une déconstruction de ce qu'Abaab et Guillaume (2004) appellent « périmètre de solidarité géographique ». D'un statut d'agriculteur purement rural, les populations relogées intègrent les modes citadins car n'ayant plus la possibilité de continuer les activités qu'ils ont connues et entreprises depuis des générations. Cette situation est la conséquence d'une opposition entre usage agricole et usage industriel car étant incompatibles sur le même espace (superposition territoriale d'intérêts contradictoires), (Torre, 2008; Torre et al, 2010). Ainsi assiste-t-on à un conflit d'usage de l'espace qui est notamment cause de délogement des populations occupant des sites où existe une mine à exploiter.

C'est ce contexte de délogement des populations autour des sites, de privatisation de leur principale source de revenus (la terre), de provocation de différents dégâts écologiques qui alimente la thèse de la « malédiction des ressources naturelles » abordée par plusieurs chercheurs. Non seulement des espaces agricoles sont perdus, mais aussi l'environnement est bouleversé. Les pollutions par l'acide sulfurique que produisent les ICS sont souvent source de conflits entre populations locales et l'entreprise minière. D'ailleurs, tous

les pays ayant connu un essor de l'exploitation minière depuis les années 1990 ont vu ainsi se multiplier les conflits autour de projets considérés comme menaçants du cadre de vie des populations locales.

Dans un rapport fait par le PNUE intitulé *Du conflit à la consolidation de la paix: le rôle des ressources naturelles et de l'environnement* publié en 2009, il est mentionné que 40 % des conflits qui surviennent dans le monde sont causés par l'exploitation des ressources naturelles, particulièrement celle des exploitations minières et des hydrocarbures. Selon Torre (2008), le conflit n'est pas une rupture radicale ou brutale; il s'inscrit au contraire dans la temporalité et se présente comme l'héritage ou la conclusion des phases antérieures d'échanges et d'oppositions. Ces conflits sont particulièrement nombreux en Amérique latine où beaucoup de projets miniers ont été lancés par des compagnies étrangères (Deshaies, 2016). Une exploitation d'un quelconque gisement minier n'est jamais maitrisée. C'est pourquoi les compagnies minières ne tardent pas à montrer, par des réalisations concrètes (amélioration du cadre social des populations), que leurs activités peuvent apporter un bénéfice tangible aux communautés concernées (Deshaies, 2016). En matière économique, les changements miniers ont des conséquences positives (Magrin et *al.* 2006), notamment avec la création d'emplois (employés des usines), de réalisations sociales au bénéfice des riverains (dispensaire, écoles, forage), et la construction de routes. Mais dans les *Niayes*, cette démonstration n'intéresse pas les producteurs agricoles qui, malgré tout effort des entreprises minières pour combler les pertes de terres qu'elles ont causées, ne sont toujours pas satisfaits car la seule activité qui leur rapporte est compromise et souvent leurs familles sont disloquées.

Conclusion

Les *Niayes* regorgent de potentialités minières et agricoles, ce qui justifie sa convoitise par des activités de natures diverses. Longtemps considérée comme principale zone maraichère et d'activité horticole, elle est aujourd'hui, vue sous un autre angle dont celle de l'extraction des ressources de son sous-sol. Les populations des *Niayes* centre notamment celles de la commune de Darou Khoudoss et de Méouane, subissent des pressions foncières entrainant une perte de leurs espaces d'habitation et agricoles.

Cet article a permis, à travers une méthodologie adaptée, de déceler les divergences entre les secteurs miniers et agricoles. La question des déplacements de populations est le phénomène le plus récurent que connaissent les sites miniers. Les transformations des paysages et du cadre de vie des populations sont tellement importantes que la capacité de résilience du territoire est profondément altérée.

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Ethnologie de la Prise en Charge Alimentaire de l'enfant Allaité en Communauté Baoulé

Résumé

Le présent article a pour objectif général d'analyser la prise en charge de l'enfant allaité chez les communautés Baoulé. De façon spécifique, il permet de comprendre l'alimentation de l'enfant allaité chez les Baoulé d'une part et d'autre part, les habitudes alimentaires de la nourrice dans la prise en charge de l'enfant allaité. Cette étude s'est déroulée en 2016 auprès des sous-groupes Baoulé, Faly de Bouaké et Nananfouè de Yamoussoukro. Les enquêtées étaient composées de femmes de troisième âge et de matrones, auprès desquelles ont été réalisés douze entretiens semi structurés individuels et quatre focus groups. Les entretiens individuels étaient adressés aux matrones et les focus groups animés avec les femmes de troisième âge. Au total, quatre focus groups et douze entretiens individuels ont été réalisés. Le nombre de femmes de troisième âge ayant participé aux focus groups est 32, soit 8 femmes par focus group et 12 matrones ont été interviewées individuellement. Les entretiens ont été enregistrés à l'aide d'un dictaphone et transcrits entièrement puis les données ont été analysées. L'analyse globale des données a été obtenue par synthèse transversale des analyses des entretiens individuels et des focus groups. Pour des raisons éthiques, les identités des répondantes ont été remplacées par des prénoms fictifs. L'étude a révélé d'une part que la prise en charge alimentaire de l'enfant allaité est fondée sur l'alimentation. Il s'agit du lait maternel, des compléments alimentaires et de la période de sevrage. D'autre part, elle a montré que la nourrice doit se passer des aliments comme la mangue, le foutou couché, l'œuf, l'attiéké, le silure et le maïs frais pour une bonne santé de l'enfant allaité. Ainsi, le respect et l'application de ces pratiques et connaissances

socioculturelles seraient une garantie à l'amélioration de la santé de l'enfant allaité. En somme, la santé de l'enfant allaité découle d'un suivi minutieux de son alimentation et de l'alimentation de la nourrice. Car, l'alimentation serait fondamentale pour la santé de l'enfant allaité.

Ethnology of the Nutritional Care of the Child Breastfed in Baoulé Community

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Abstract
        This paper focuses on analyzing the management of breastfed children in Baoulé communities. It provides an understanding of the feeding of breastfed children among the Baoulé as well as the nurse's feeding habits for the care of breastfed children. The study highlights the need to take into account the socio-cultural knowledge in the care of breastfed children in Baoulé communities. It was also conducted in 2016 among the Baoulé, Faly of Bouaké, and Nananfouè of Yamoussoukro subgroups. The respondents were composed of elderly women and matrons, which included twelve semi-structured individual interviews and four focus groups. The individual interviews were addressed to the matrons and the focus groups were conducted with senior women. A total of four focus groups and twelve individual interviews were conducted. The number of elderly women who participated in the focus groups was 32, i.e., 8 women per focus group and 12 matrons were interviewed individually. The interviews were recorded using a dictaphone

and transcribed in full, and the data were analyzed. The overall data analysis was obtained by cross-cutting synthesis of the analysis of the individual interviews and focus groups. For ethical reasons, the respondents' identities were replaced by fictitious first names. The study revealed, on the one hand, that the nutritional management of the breastfed child is based on feeding. This includes breast milk, food supplements, and the weaning period. On the other hand, it was shown that the nurse must do without foods such as mangoes, couch potato, egg, attiéké, sheatfish, and fresh corn for the good health of the breastfed child. The respect and application of these socio-cultural practices and knowledge would be a guarantee for the improvement of the health of the breastfed child. In short, the health of the breastfed child is the result of careful monitoring of his or her diet and of the nurse's feeding. Nutrition is therefore fundamental to the health of the breastfed child.

Keywords: Ethnology, alimentary care, breastfed child, baoulé

Introduction

La santé du binôme mère-nouveau-né est suivi dès le premier jour de l'accouchement. Les jours et les semaines qui suivent la naissance appelés période postnatale, représentent une phase cruciale dans la vie d'une mère et de son nouveau-né.

Deborah Lupton (2013), présente cela comme deux personnes inséparables et une complicité se crée entre la mère et l'enfant. Elle qualifie cette relation d'*intercorporéité.* « La notion d'intercorporéité pour comprendre la manière dont les mères « pensent et ressentent le corps de leurs enfants ». L'intercorporéité implique que des corps « apparemment autonomes et individualisés sont en fait expérimentés à un niveau phénoménologique comme entremêlés ». […] D'une part, comme c'était le cas *in utero*, le corps de l'enfant se développe littéralement à partir de celui de la mère. D'autre part, les mères peuvent ressentir cette fusion à un niveau émotionnel : allaiter, ce serait en quelque sorte accepter de continuer à "partager" son corps pendant plusieurs mois, voire plusieurs années après l'accouchement ».

Kouakou (2014), mentionne dans son étude que l'allaitement immédiat après l'accouchement est faiblement pratiqué en Côte d'Ivoire, soit une proportion de 9%. Les résultats de ses recherches montrent également que la connaissance de la recommandation d'initier l'allaitement maternel dans les trente premières minutes après la naissance selon le protocole national n'est pas du tout suivie car seulement 9% des femmes allaitantes ont dit avoir pratiqué la mise au sein immédiate.

Dans les communautés Baoulé étudiées, cette vulnérabilité du binôme mère-enfant et du nouveau-né de façon particulière est perçue, et mobilise un ensemble de pratiques de prise en charge endogènes. Cette étude se propose

d'analyser la prise en charge de l'enfant allaité chez les communautés Baoulé. De façon spécifique, elle permet de comprendre l'alimentation de l'enfant allaité chez les Baoulé d'une part et d'autre part, les habitudes alimentaires de la nourrice dans la prise en charge de l'enfant allaité.

Ce travail s'inscrit dans la perspective de la théorie des pratiques. Cette théorie propose de situer les structures cognitives et symboliques directement au cœur des pratiques sociales nécessitant de placer ces dernières au centre de l'analyse. Autrement, une « pratique » est comme un type de comportement routinier qui consiste en plusieurs éléments interconnectés entre eux : des formes d'activités corporelles, des formes d'activités mentales, des « choses » et leur usage, des connaissances de base constituées de compréhension, savoir-faire, états émotionnels et motivations, selon (Reckwitz, 2002). Dans le cadre de cette recherche, cette théorie est utilisée pour montrer l'importance de l'usage des pratiques communautaires dans la prise en charge alimentaire de l'enfant allaité.

Méthode et matériels

Cette étude a été menée, auprès de sous-groupes Baoulé de la sous-préfecture de Bouaké et de Yamoussoukro. Dans la sous-préfecture de Bouaké, l'étude a été réalisée auprès des Baoulé *Faly* dans le village de Bamoro. Quant à la sous-préfecture de Yamoussoukro, il s'agit des Baoulé *Nananfouè* dans le village de N'Zéré. Lors de la collecte des données de thèse, nous avons assisté à quelques séances de Communication pour le Changement de Comportement (CCC) de la sage-femme auprès des nourrices dans le village de Bamoro. Au cours de cette communication, la sage-femme sensibilisait les nourrices sur les types d'allaitement, les périodes d'allaitement, comment allaiter etc. En dépit de cela, les nourrices en communauté alimentent l'enfant selon les principes communautaires, sans toutefois tenir compte des instructions de la sage-femme. Au regard de ce comportement, nous avons décidé de nous imprégner du mode d'alimentation de l'enfant allaité dans la communauté. Le village N'Zéré était le village de la pré-enquête pour la thèse. Ce qui pourrait expliquer le choix de ces sites.

Les données ont été collectées en 2016 selon une approche qualitative mobilisant des techniques, notamment l'entretien semi structuré et le focus group. Les informations ont été collectées auprès de deux différents groupes de femmes. Il s'agit des femmes du troisième âge et des matrones.

Dans les communautés étudiées, les personnes en charge des conseils aux jeunes filles, femmes procréatrices sont des matrones et des femmes de troisième âge. Ces dernières sont sollicitées, pour la plupart, quand les femmes sont enceintes. Elles interviennent pour le suivi de la grossesse jusqu'à l'accouchement. Ces matrones étant moins nombreuses dans les communautés d'étude, à partir de la technique de boule de neige, nous les avons enquêtées

jusqu'à atteindre un seuil de saturation. Pour une question d'éthique, les identités affectées aux enquêtées dans le texte sont des prénoms fictifs.

Au total, quatre focus groups et douze entretiens individuels ont été réalisés. Le nombre de femmes de troisième âge ayant participé aux focus groups est 32, soit 8 femmes par focus group et 12 matrones ont été interviewées individuellement. De manière détaillée, 16 femmes de troisième âge et 6 matrones ont été enquêtées dans chacun des deux villages. Les entretiens ont été enregistrés à l'aide d'un dictaphone et transcrits entièrement puis les données ont été analysées. L'analyse globale des entretiens a été obtenue par synthèse transversale des analyses des entretiens individuels et des focus groups.

Résultats

La prise en charge alimentaire de l'enfant allaité en communauté Baoulé est axée sur l'alimentation de façon générale.

1. L'alimentation de l'enfant allaité

L'alimentation de l'enfant allaité dans la communauté est multiforme et prend en compte l'allaitement maternel, l'aliment de complément et la période de sevrage.

1-1.1 L'allaitement maternel

Les groupes culturels Baoulé perçoivent le lait maternel comme la nourriture principale de l'enfant allaité. Il assure le développement, la croissance et permet à l'enfant allaité d'être en embonpoint. L'enfant allaité est nourri régulièrement pour préserver sa santé. En dépit de cela, le lait maternel a selon les communautés étudiées, des effets néfastes sur certaines parties du corps de l'enfant allaité. Pendant l'allaitement, si le lait maternel tombe sur le sexe masculin de l'enfant allaité, cela pourrait rendre l'enfant allaité infertile plus tard. Pour pallier cela, au cours de l'allaitement la mère doit avoir une position adéquate ; c'est-à-dire être bien assise avant d'allaiter son enfant. En outre, elle doit se rassurer que le sexe de l'enfant allaité est bien protégé. Une matrone de 67 ans interviewée, dit à cet effet ce qui suit :

> *« Chez nous, avant de donner sein à l'enfant, la mère doit s'asseoir, la nuit comme la journée. Parce que le lait de sein c'est dangereux, ça gâte beaucoup de chose sur l'enfant. Lorsque la mère donne le sein à l'enfant, si le lait verse sur le sexe masculin de l'enfant ça le rend impuissant. Donc une mère doit faire beaucoup attention quand elle donne sein à son enfant garçon ».*

L'analyse synthétique des focus groups (100%) et des entretiens individuels (75%) montre que dans la communauté Baoulé, il y a des prescriptions sociales à respecter. En effet, il est déconseillé d'allaiter l'enfant lorsque la mère est longuement exposée au soleil. Sous l'effet des rayons du soleil, le lait maternel change de température. Il est imprégné de chaleur et considéré comme étant « chaud ». Car, ce lait qualifié de « chaud » provoquerait la diarrhée ou le vomissement chez l'enfant allaité. Les rayons du soleil sont donc perçus comme un facteur pathogène, qui affecte la qualité du lait maternel. Les propos ci-après étayent ce qui précède :

> *« Chez nous ici, quand tu vas travailler dans soleil tout ton corps est chaud (dégager une chaleur). Quand c'est comme ça, si tu donnes sein à l'enfant (faire téter l'enfant allaité), ce n'est pas bon ; parce que, quand sein-là est chaud que tu donnes à l'enfant ça donne diarrhée. Quand c'est comme ça que tu veux donner sein à l'enfant, tu attends d'abord ; et quand ton corps n'est plus chaud, là si tu donnes sein n'y a pas de problème »,* extrait d'un focus group avec femme du troisième âge.
>
> *« Chez nous les Baoulé, quand on travaille dans soleil, on ne donne pas sein directement à l'enfant ; parce que ce n'est pas bon, quand sein est chaud que tu donnes à l'enfant, ça le fait vomir. Quand on travaille au soleil avant de donner sein à l'enfant on se repose d'abord, là il n'y a pas de problème »,* extrait de l'entretien semi directif avec la matrone Modjou 58 ans.

Outre, l'allaitement maternel, dans l'alimentation de l'enfant allaité chez les Baoulés enquêtés, l'on note le recours à des aliments de complément.

1-2   L'aliment de complément

Les aliments de complément donnés aux enfants en état d'allaitement, sont composés de la bouillie de céréales et/ou du plat familial. En ce qui concerne des céréales, il s'agit, de la bouillie de farine de maïs, mil, et riz. Pour obtenir la bouillie, les céréales sont d'abord moulues avant de procéder à la cuisson. Quant à la cuisson, la quantité de farine est fonction de la quantité d'eau prise. La cuisson peut durer 25-30 minutes. Lorsque la bouillie se refroidit, la mère nourrit l'enfant allaité à l'aide d'une cuillère à café, après avoir ajouté deux ou trois morceaux de sucre. Selon les perceptions des enquêtées, les farines de maïs et de mil peuvent être conservées sur une période de deux semaines, contrairement à la farine de riz qui ne fait qu'une semaine. Ces farines sont conservées dans des récipients avec des fermetures. Pour ce qui est du plat familial, il s'agit, de l'igname et du manioc. L'igname est donnée en purée avec des ajouts de poisson maquereau, d'l'huile végétale

comestible et du sel. La mère se sert également de la cuillère à café ou l'index pour le lui donner à manger. Pour le manioc, la pâte de manioc est pilée à l'aide d'un mortier et d'un pilon, pour la rendre compacte. À la pâte obtenue, on y ajoute de l'eau pour qu'elle soit liquide. Ce liquide est tamisé à l'aide d'une passoire. Une fois cela est fait, le liquide reste décanter durant 30 minutes, le temps que l'eau remonte à la surface et stagne. Cette eau est retirée, et par la suite, la pâte homogène est mise au feu à travers une casserole ou marmite. Pendant la cuisson, la mère fait usage d'une spatule en bois pour malaxer. Le temps qu'il faut pour la cuisson est environ 1 heure 30 minutes. Après la cuisson, on obtient ce qu'on appelle le 'placali', qui se consomme avec une sauce faite à base de gombo mélangé et de jus de graine de palme. Difficile à mâcher, ce type de sauce a pour avantage de faire glisser les bouchées facilement. Ces différents mets sont considérés comme les plats de résistance de l'enfant allaité. Lorsque l'enfant en état d'allaitement est nourri avec ces aliments, cela permet à la mère de pouvoir vaquer à ses occupations, dans la mesure où cela réduit considérablement la fréquence d'allaitement. Selon ces communautés, lorsque l'enfant allaité consomme ces aliments, il dort pendant longtemps, il ne pleure pas et la mère parvient à faire ses activités. Pour la plupart, l'enfant allaité consomme ces aliments à partir du quatrième mois. D'après ces communautés, à cet âge le lait maternel ne peut rassasier l'enfant en état d'allaitement. Les focus groups mettent en évidence ces modes d'alimentation de l'enfant allaité au sein des communautés. C'est ce qui transparait de cet extrait d'un focus group avec les femmes du troisième âge :

> *« Chez nous, quand l'enfant est encore nouveau-né, quand on donne sein fini, on donne aussi de l'eau à boire, quand c'est comme ça là il est bien rassasié, il ne pleure pas et il dort bien. Quand c'est comme ça tu arrives à travailler, à faire tes petits trucs. Au moment, il commence à grandir un peu : quand il a trois (3) ou quatre (4) mois, on donne baka (bouillie de farine) de riz, de mil et maïs. Mais, maïs là on n'aime pas trop donner, parce que souvent ça donne mal de ventre à l'enfant. Quand l'enfant mange ça là, il ne te fatigue pas, tu peux faire ton travail, ça le fait grossir aussi ».*

Dans la communauté, une mère nourrit son enfant en état d'allaitement au regard de ses faits et gestes. Souvent, l'enfant allaité saisi le bras de sa mère quand elle mange ou il fixe sa mère lorsqu'elle met la nourriture à la bouche. Quand elle ne lui en donne pas, il pleure. Au regard de cette attitude, elle déduit que l'enfant allaité est intéressé par la nourriture familiale. Ce qui expliquerait l'introduction précoce de l'aliment de complément. Cette expression de l'appétit chez l'enfant allaité est traduite par les focus groups comme le montre l'extrait suivant :

> *« Ici, souvent quand l'enfant à quatre ou cinq mois, quand sa maman mange il la regarde. Quand la mère envoie la main vers la bouche il la regarde, quand elle envoie la main vers la nourriture il la regarde encore ; et il fait même chose. Parfois, l'enfant attrape bras de sa maman (prendre la main de sa mère), ou il pleure. Quand c'est comme ça, c'est que l'enfant veut manger aussi. Et on commence à donner ce qu'on mange à l'enfant. Aussi, quand il mange, il ne tombe pas malade et il grossit ».*

La consommation des aliments solides chez l'enfant allaité est en rapport avec sa prise de poids.

1-3.1 La période de sevrage

Selon la communauté étudiée, le sevrage est l'arrêt de l'allaitement maternel au profit des aliments solides. En général, dans cette communauté, les enfants en état d'allaitement sont sevrés, soit à l'âge de 1an 6 mois, soit à 2 ans ou plus. En ce qui concerne la période de 1 an 6 mois, elle est plus souvent pratiquée par les jeunes mères. Celles-ci sèvrent aussitôt les enfants en état d'allaitement dans l'optique de garder la fermeté de leurs seins. Selon elles, allaiter un enfant au-delà de 1an 6 mois, concourt à l'affaissement des seins. Or, les seins affaissés leur conféreraient une apparence de femmes d'âge avancé. Ces pratiques de ces jeunes mères ont des conséquences sur l'état de santé de l'enfant. En effet, celles-ci seraient à l'origine de certains problèmes de santé, tels que la diarrhée, la perte de poids. Quant aux femmes qui ont plus de trois enfants, avec l'expérience, elles allaitent les enfants jusqu'à deux (2) ans, voire plus pour certaines, avant qu'ils ne soient sevrés. Ces femmes estiment que cette façon de nourrir l'enfant allaité le met à l'abri des maladies (anémie, malformations) et il prend de l'embonpoint. À cet âge, l'enfant allaité s'exprime par le parler quand il a faim. Comme le dit Motran 76 ans *:*

> *« Les jeunes filles de maintenant, ne veulent pas surveiller enfant, elles ne veulent pas que leurs seins tombent (perdre sa fermeté). Pour cela, elles sèvrent vite (précocement) les enfants, quand c'est comme ça l'enfant tombe régulièrement malade. Sinon, nous on leur demande de nourrir l'enfant au sein jusqu'à deux ans. A deux ans, lorsque l'enfant a faim, il est capable de dire à sa maman. Quand l'enfant est allaité durant deux ans, il ne tombe pas malade n'importe comment, aussi il évolue vite ».*

Le respect de ces normes sociales assure un bon état de santé de l'enfant allaité. Cette connaissance est transmise aux jeunes mères en vue

d'améliorer la santé de leurs enfants, et cela renforce encore les liens entre l'enfant allaité et sa mère. Outre, le fait que l'alimentation donne la force et la santé à l'enfant allaité, elle peut aussi dégrader sa croissance, lorsqu'elle n'est pas suivie selon les normes communautaires. Ces normes communautaires qui stipulent qu'un enfant devrait être allaité jusqu'à deux ans.

La prise en charge alimentaire de l'enfant allaité implique également les comportements de la mère.

2- Les comportements de la mère dans la prise en charge de l'enfant allaité

Pour une bonne santé de l'enfant allaité, la mère observe des restrictions d'ordre alimentaire. La mère se nourrit en fonction des normes de la communauté. Dans la communauté, il y a des aliments que la nourrice s'abstient de consommer pendant la période d'allaitement. Ce sont : la mangue, la sauce arachide ou graine, le silure, le foutou couché, l'œuf, le maïs, l'attiéké. La consommation de ces aliments par la nourrice aurait des conséquences négatives sur l'état de santé de l'enfant allaité.

Tableau 1. Les problèmes de santé de l'enfant allaité suite aux aliments consommés par la mère

Nom en langue française	Nom en langue locale	Problèmes de santé suscités	Effectifs des enquêtées sur les problèmes de santé	
			Matrones	**Femmes de troisième âge**
Mangues	*Amango*	Diarrhée	10/12	4/4
Sauce graine ou sauce arachide	*Ahé tro* ou *ngatè tro*	Mal de ventre ou toux	8/12	4/4
Silure	*Djuéblé*	Maladies incurables	11/12	4/4
Foutou couché	*aliè vouin*	Mal de ventre	7/12	4/4
Œuf ou maïs frais	*clé n'zoua* ou *ablé monnin*	Ballonnement de ventre	10/12	4/4
Attiéké	*atchèquai*	Constipation	6/12	4/4

Source : Données de terrain 2016

Au regard du tableau, plusieurs problèmes de santé sont causés par la consommation chez la nourrice d'un certain nombre d'aliments. En effet, la consommation par la nourrice de la mangue, la sauce graine ou arachide, le silure, le foutou couché, l'œuf ou maïs frais et l'attiéké entraineraient respectivement les maladies que sont la diarrhée, le mal de ventre ou la toux, les maladies incurables, le mal de ventre, le ballonnement de ventre et la constipation chez l'enfant allaité. Dans l'ensemble, ces résultats sont attestés par 100% des focus groups réalisés auprès les femmes du troisième âge et par la majorité des matrones interviewées individuellement.

Discussion

Il existe bien d'écrits sur la question de la santé infantile. La plupart de ces écrits s'articulent autour de : soins préventifs, restriction alimentaire pour un lait maternel de qualité, restriction sociale pour un lait maternel de qualité, lait maternel comme thérapie chez la nourrice et l'enfant et intérêt de l'aliment de complément

✓ *Soins préventifs*

Pour préserver l'enfant allaité de la diarrhée lorsque la mère consomme la mangue ; elle fait usage de l'écorce ou des feuilles de manguier pour faire un lavement à l'enfant. Selon Guilhem et Boëtsch (2017), avant la première mise au sein, pour protéger le nouveau-né des impuretés utérines accumulées pendant la période de gestation et lui donner un esprit vif, remuant et agile qu'une chèvre, l'une des parentes de la lignée paternelle réalise sur le nouveau-né le rite musulman du « toxantal ». « Ce rite consiste à lui administrer dans la bouche trois gouttes de lait de chèvre mélangées à de l'eau, dans eau ont été préalablement dilués des versets coraniques écrits sur un morceau de papier. Il place l'enfant, être vulnérable, sous la protection d'Allah en l'affiliant à la communauté musulmane. L'utilisation du lait de chèvre obéit à une intentionnalité prophylactique et propitiatoire ».

Cette littérature est en partie similaire aux résultats de cette étude. Guilhem et Boëtsch (2017), montrent que l'allaitement maternel se prépare pour éviter que le nouveau-né soit victime d'un problème de santé et cela se fait à titre préventif. S'inscrivant dans la même veine que ces auteurs, notre étude montre dans la prévention des maladies chez l'enfant allaité, l'abstention de la nourrice à la consommation de la mangue permet de prévenir la diarrhée.

✓ *Restriction alimentaire pour un lait maternel de qualité*

Pour ce qui est de l'alimentation, Ravaoarisoa et *al.* (2018) indiquent que chez les Betsiléo à Madagascar, des femmes allaitantes évitent de consommer certains aliments au risque de détériorer la qualité du lait maternel. Ces femmes allaitantes ne mangent pas, « les tubercules, les feuilles vertes et les légumineuses ou la réduction de leur consommation pendant les premiers mois d'allaitement ».

Au sein de la communauté Baoulé, la consommation de certains aliments par la mère pourrait imprégner le lait maternel et le rendre pathogène. Il s'agit de la mangue, la sauce arachide ou graine, le silure, le foutou couché, l'œuf, le maïs frais, *l'attiéké*. La consommation desdits aliments par la nourrice peut entrainer chez l'enfant allaité maternellement des problèmes de santé à savoir : la diarrhée, la constipation. En évoquant les tubercules et légumineuses au nombre des restrictions alimentaires, cette étude est en partie similaire à celle de Ravaoarisoa et *al.* (2018). Cependant, il existe des

particularités à chaque communauté. Tandis que chez les Baoulé ont parlé de mangue, de silure, du foutou couché, de l'œuf, du maïs frais, les Betsiléo ont souligné le cas des feuilles vertes.

Dans ces deux communautés, Baoulé et Betsiléo l'alimentation de la nourrice est déterminante pour une bonne santé de l'enfant allaité. Les nourrices de chaque communauté observent des interdits d'ordre alimentaire pour contribuer à une meilleure santé de leurs enfants allaités. Le lait maternel est la nourriture fondamentale de l'enfant allaité. Lorsque le lait maternel est trouble du fait du mode alimentaire de la mère, il devient nuisible et peut entrainer des problèmes de santé chez l'enfant allaité. Plusieurs auteurs ayant travaillé sur cette question n'en disent pas moins. Liu et *al.* (2014) mentionnent que, « la consommation des aliments froids est déconseillée pendant l'allaitement car ils sont considérés comme non favorable à la santé des femmes allaitantes et affectent négativement la quantité et la qualité de la production de lait ». Selon Aid (2015), Cofa (2015), des substances toxiques et autres substances indésirables peuvent également passer dans l'organisme de l'enfant par le biais du lait maternel. Avec certaines mesures de précaution, les femmes qui allaitent peuvent réduire de manière ciblée les risques liés par exemple à la nicotine, à l'alcool ou aux médicaments.

✓ *Restriction sociale pour un lait maternel de qualité*

Kouamé et Abé (2017), soulignent que les rapports extraconjugaux ont des inconvénients sur l'état de santé de l'enfant. Par exemple, la sexualité extraconjugale. On parle de sexualité extraconjugale lorsque la nourrice a des rapports sexuels en dehors de son conjoint. Cet acte est nommé « *kaktchuê* » qui signifie « impureté » ou « saleté ». Selon les enquêtées, cet état de fait à des impacts négatifs sur la santé de l'enfant. L'état morbide se caractérise par la morphologie chétive parce que le fait d'avoir les rapports extraconjugaux transforme le lait maternel, lui en enlevant sa qualité nutritive.

Michel et Philippe (n.d), indiquent que le lait devient dangereux pour l'enfant lorsque la mère est confrontée à un problème de santé délicat ou contracte une grossesse. « L'allaitement est arrêté en cas de maladie grave de la mère, et lorsque la femme est à nouveau enceinte ou croit l'être ; en effet, dans ce cas, le lait maternel est considéré comme "mauvais" et pouvant provoquer une maladie diarrhéique réputée dangereuse pour l'enfant allaité », écrivent-ils. Ces auteurs abondent ainsi dans le même que les résultats de l'étude menée. En effet, le lait maternel considéré comme la nourriture principale de l'enfant allaité dans les communautés étudiées, sous l'effet des rayons du soleil et/ou des rapports sexuels, ce lait provoque la diarrhée chez l'enfant allaité. Le lait maternel devient néfaste pour la santé de l'enfant allaité lorsque la mère transgresse des interdits ou des normes sociales. En dehors de la diarrhée évoquée comme pathologie, la présente étude relève que le lait

maternel pourrait rendre l'enfant allaité de sexe masculin infertile, lorsqu'il tombe sur son sexe.

✓ *Lait maternel comme thérapie chez la nourrice et l'enfant*

Excepté les problèmes de santé, le lait maternel a des vertus pour une meilleure santé de l'enfant allaité et la mère. Les auteurs comme, Dominique (2010), Green (2019), Koletzko et *al*. (2016), Bauge (2013), Imorou (2015), INSERM (2014), Henderson et *al*. (2011) et Jaquet (2011) le montrent dans les travaux respectifs.

Dominique (2010) souligne que « l'allaitement a également des effets bénéfiques pour la santé de la mère. Il est associé à une diminution de l'incidence du cancer du sein avant la ménopause et du cancer de l'ovaire, du diabète de type 2 et de dépression du *post-partum*. Il est également associé à une réduction du risque de pathologies métaboliques et cardio-vasculaires ». Green (2019), montre les biens faits du lait maternel chez le nourrisson comme chez la mère. Selon elle, « le lait maternel est facile à digérer et offre la bonne quantité de nutriments, car il s'adapte aux besoins des nourrissons à mesure qu'ils grandissent. L'allaitement améliore le développement cognitif et peut protéger contre les infections gastro-intestinales, l'otite moyenne aiguë et les infections des voies respiratoires. (…) L'allaitement est associé à un retard du retour de l'ovulation et à une perte de poids plus importante après l'accouchement, ainsi qu'à une baisse du risque d'hypertension, de diabète, d'hyperlipidémie et de maladie cardiovasculaire. L'allaitement est économique pour les familles il n'est pas nécessaire d'acheter des biberons ni des substituts du lait maternel ». Koletzko et *al*. (2016) signifient également les avantages du lait maternel chez le nourrisson et chez la mère. Pour ceux-ci, « la composition nutritionnelle du lait maternel est adaptée de manière optimale aux besoins du nourrisson. Elle évolue au fil de la tétée, mais aussi à mesure que le nourrisson grandit. Le lait maternel des premiers jours (le colostrum) est particulièrement riche en protéines, en anticorps et en facteurs de croissance. Ensuite, il évolue en permanence, toujours en fonction des besoins nutritionnels de l'enfant et de ses capacités digestives. (…) Les femmes qui allaitent ont souvent plus de facilité à perdre du poids après la grossesse. Les réserves de graisse accumulées pendant la grossesse servent de source d'énergie pour la production de lait maternel ». Pascal (2013), indique que l'un des effets collatéraux de l'allaitement est l'attachement et l'interaction plus forte mère-enfant. Or selon lui, on sait que l'attachement augmenté favorise le développement cognitif puisqu'il est lié à plus d'expérience, donc une multiplication des interconnexions neuronales ». Imorou (2015), souligne la protection du nouveau-né par le lait maternel. Pour ce dernier, « au nombre des connaissances profanes largement partagées figure l'idée que le lait est un aliment qui permet au nouveau-né de bien se

porter. Le lait maternel est en général perçu comme un stimulant important de l'intelligence de l'enfant. Il est présenté comme un aliment qui permet d'éviter de nombreuses maladies à l'enfant ». Quant à l'INSERM (2014), on note que les enfants allaités accepteraient de manger plus de fruits et légumes entre 2 et 7 ans. Perçu comme naturel, le lait est plus pratique, plus adapté et sûr (Henderson et *al.* 2011) relèvent que l'allaitement perçu comme naturel. Jaquet (2011), estime que le lait renforce les liens affectifs entre l'enfant et sa mère. Il offre de multiples expériences sensorielles, car le goût du lait maternel est influencé par l'alimentation de la maman. Il favorise le bon développement de la musculature faciale, buccale et de la mâchoire. (…) Il diminue le risque de développer un cancer du sein avant la ménopause. Il est peu coûteux, écologique et pratique, car le lait est disponible partout, en tout temps et à bonne température.

À l'image de ces travaux, cette étude souligne l'importance du lait maternel pour le développement, la croissance et l'embonpoint de l'enfant allaité. Le lait maternel consolide les liens entre la mère et son enfant, réduit les pleurs de l'enfant, c'est le moment de l'allaitement la mère parle beaucoup à son enfant, il protège l'enfant contre plusieurs maladies.

✓ *Intérêt de l'aliment de complément*

Il existe divers types de compléments et ceux-ci sont donnés précocement aux enfants en état d'allaitement. Djadou et *al.* (2017), indiquent dans leur étude à Tchaoudjo (Togo) que l'eau et la bouillie sont des aliments qui sont donnés aussitôt aux enfants allaités. Selon les résultats de leur étude, « l'eau et la bouillie (63,5%) étaient les aliments les plus introduits par les mères en plus du lait maternel avant 6 mois. L'eau de puits était la plus donnée (60,6%). Parmi les mères ayant introduit des aliments en plus du lait maternel avant six mois, 69,9% avaient donné de la bouillie locale à base de mil ou de maïs contre 30,1% de bouillie de céréale enrichie ». De même Sibetcheu et *al.* (2017), montrent qu'au Cameroun, les mères introduisent très tôt l'aliment de complément. Ils montrent que des liquides autre le lait maternel et des aliments solides ou semi-solides sont introduits très tôt, avant 6 mois dans l'alimentation de l'enfant allaité. Ainsi, selon leurs résultats, chez les enfants de moins de 2 mois, 7 % avaient reçu d'autres liquides et 8 % avaient reçu d'autres laits ou des produits laitiers (fromage et yaourt). Pour la tranche 2-3 mois, 19 % avaient déjà reçu des aliments solides à base de céréales et pour la tranche 4-5 mois, 9 % avaient consommé des aliments solides à base de poissons, volailles, viandes ou œufs. À 6-9 mois, seulement 30 % des enfants reçoivent des aliments riches en vitamine A ». Gray et *al.* (2014) dans une étude réalisée au Congo, notent que pour éviter les pleurs des enfants allaités, ils sont nourris tôt avec les aliments de complément. Ce propos rapporté par cet auteur en dit mieux :

> *« Je sais qu'il faut allaiter mon enfant jusqu'à 6 mois. J'ai essayé. Pourtant il pleurait tout le temps ; il me fatiguait. J'ai commencé par ajouter des biberons supplémentaires par intervalle de ses tétées lorsqu'il a eu 2 mois. Puis, à 3 mois, j'ai commencé à alourdir ses biberons avec des cuillères de farines infantiles. A quatre mois, il prenait déjà une bouillie de céréales précuite. A 5 mois il était initié au plat familial. ». « Je ne dormais plus la nuit. Mon bébé réclamait de téter tout le temps. Plus il grandissait, plus il réclamait. Peu avant qu'il atteigne 3 mois, j'ai décidé de lui donner une bouillie à base de farine industrielle qu'on trouve sur le marché. Le jour où j'ai commencé, j'ai dormi toute la nuit sans qu'il pleure pour réclamer de téter. J'ai donc résolu de continuer »*

Selon Salanave et *al*. (2012), l'étude Epifane réalisée en France montre qu'à un mois les nourrissons n'étaient plus que 35 % à être allaités en exclusif et 54 % en mixte. Par ailleurs, HKI (2010), soutient que l'introduction précoce d'aliments non adaptés aux différentes étapes de la croissance du jeune enfant prédispose ce dernier à la malnutrition avec des répercussions psychophysiologiques sur son devenir d'adulte.

Cette étude réalisée en Côte d'Ivoire témoigne de l'interculturalité de cette pratique qui consiste à donner des aliments de complément aux enfants allaités. Tout comme au Togo, au Cameroun, au Congo et en France, les bouillies et les plats familiaux sont donnés précocement à l'enfant allaité, afin qu'il puisse dormir et la mère profite de ces moments pour faire ces activités quotidiennes en Côte d'Ivoire, précisément chez les communautés baoulé *Faly* de Bouaké et *Nananfouè* de Yamoussoukro.

Conclusion

Abordant la problématique de la prise en charge nutritionnelle de l'enfant allaité, cet article a permis de comprendre comment celle-ci est faite dans les communautés Baoulé (*Faly et Nananfouè*) en Côte d'Ivoire. Parti du constat que les enfants allaités sont précocement nourris avec des aliments divers et que la nourrice est soumise à des restrictions alimentaires pendant cette prise en charge, l'étude relève deux faits majeurs. Dans un premier temps, la prise en charge nutritionnelle de l'enfant allaité, en communauté *Faly* et *Nananfouè,* repose sur une alimentation mixte, intégrant l'allaitement maternel et les aliments de complément. Comme aliments de complément, les bouillies de mil, riz, maïs et des plats tels que le *placali* sont donnés à l'enfant allaité dans ces communautés. Dans un second temps, l'étude montre que 100% des focus groups réalisés auprès les femmes du troisième âge et par la majorité des matrones interviewées individuellement attestent que la

consommation par la nourrice de la mangue, la sauce graine ou arachide, le silure, le foutou couché, l'œuf ou maïs frais et l'attiéké entraineraient respectivement les maladies que sont la diarrhée, le mal de ventre ou la toux, les maladies incurables, le mal de ventre, le ballonnement de ventre et la constipation chez l'enfant allaité. Dans la nécessaire collaboration entre sciences biomédicales et sciences sociales notamment l'anthropologie et la sociologie, la prise en compte des pratiques communautaires en matière de prise en charge nutritionnelle des enfants allaité, pourrait servir de catalyseur aux professionnels de la santé (sages-femmes, pédiatres surtout) pour une communication pour le changement de comportements plus efficace.

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Structure du Budget D'investissements Publics de Sante Dans la Region du Centre/Cameroun (2013-2017)

Résumé

Entre 2013 et 2017, le budget d'investissements publics du Ministère de la santé publique alloué à la région du Centre est passé de 2 093 800 000 francs CFA à 17 903 270 000. Le montant cumulé de ces investissements publics en santé dans la région était de 37 185 970 000 francs CFA. En dépit de ces investissements massifs, les populations de la région en général et celles des zones rurales en particulier éprouvent des difficultés pour accéder aux soins et services de santé. L'objectif de cet article est de cartographier le type de projets inscrits au budget d'investissements publics en santé alloués à la région du Centre afin d'évaluer s'ils sont de nature à améliorer l'offre de soins et services de santé pour les populations. L'analyse des allocations de projets révèle qu'en termes d'effectif, le nombre et le type de projets alloués à la région du Centre pourraient concourir à améliorer l'offre de soins en son sein. Toutefois, les volumes financiers dédiés à ces investissements restent insuffisants, ce qui explique en partie le fait que les populations de cette région éprouvent des difficultés à accéder aux soins et services de santé.

Mots clés: Budget d'investissements publics, Niveau central, Niveau déconcentré

Structure of the Public Health Investment Budget in the Central Region/Cameroon (2013-2017)

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Abstract
      Between 2013 and 2017, the public investment budget of the Ministry of Public Health allocated to the Central region increased from 2,093,800,000 CFA francs to 17,903,270,000 CFA francs. The cumulative amount of these public investments in health in the region was 37,185,970,000 CFA francs. Despite these massive investments, the region's populations in general and those in rural areas in particular are facing difficulties in accessing health care and services. The objective of this article is to map the type of projects included in the public health investment budget allocated to the Central region in order to assess whether they are likely to improve the provision of health care and services for the populations. The analysis of project allocations reveals that in terms of staffing levels, the number and type of projects allocated to the Centre could help improve the supply of care within the Centre. However, the financial volumes dedicated to these investments remain insufficient, which partly explains the fact that the region's populations are experiencing difficulties in accessing health care and services.

Keywords: Public Investment Budget, Public Investment Project, Central Level, Deconcentrated Level, Health District

Introduction
      Le budget d'investissements publics (BIP) fait référence aux dépenses que le gouvernement consacre aux infrastructures économiques telles que les aéroports, les routes, les chemins de fer, les réseaux d'eau et d'assainissement, les services publics d'électricité et de gaz, les télécommunications et les

infrastructures sociales telles que les écoles, les hôpitaux et les prisons Fonds Monétaire International (2015). Il s'agit d'un puissant outil d'impulsion du développement qui concoure à la mise en place et/ou, au renforcement des infrastructures sociales de base. A ce titre, il joue un rôle prépondérant dans la réduction des inégalités entre les territoires et dans la consolidation de la cohésion sociale nationale.

Le budget d'investissements publics contribue non seulement au développement territorial, mais également à l'intégration nationale. A titre d'exemple, selon l'Organisation de Coopération et de Développement Economique (OCDE, 2018), l'investissement en infrastructure constitue l'épine dorsale de la productivité. Elle peut aider à réduire considérablement les disparités territoriales en comblant l'écart existant entre zones urbaines et rurales. Le volume de ce budget modifie donc considérablement la consistance et la valeur du patrimoine de l'Etat. D'une manière générale, il permet à l'Etat de réaliser des dépenses d'avenir qui contribuent à l'amélioration de la productivité et de la croissance potentielle d'une part et d'autre part, contribuent indirectement à générer un revenu futur.

En 2013, le Cameroun a opté pour l'approche programme dans l'élaboration de son budget. Au cours des 05 premières années de mise en œuvre de cette approche de budgétisation (2013-2017), le budget d'investissements publics alloué au Ministère de la Santé Publique (MINSANTE) est passé de 71,5 à 135,1 milliards de Francs CFA soit un taux d'accroissement de 88,95% Au cours de la même période, le montant cumulé de l'enveloppe dévolue à l'investissement public dans le secteur de la santé pour l'ensemble du territoire national était de 513,9 milliards. Dans la région du Centre spécifiquement, ce budget est passé de 2 093 800 000 francs CFA en 2013 à 17 903 270 000 en 2017, pour un montant cumulé d'investissements de 37 185 970 000 francs CFA.

En dépit de ces investissements massifs qui positionnent la région du Centre au premier rang en matière d'allocations sur le budget d'investissements publics de santé, l'offre de soins en son sein reste limitée et ses populations éprouvent toujours des difficultés à accéder aux soins et services de santé. Il convient donc de questionner la typologie des investissements planifiés sur le budget d'investissements publics de santé et d'examiner si leur structure est de nature à influencer positivement l'accès aux soins et services de santé pour les communautés.

Le présent article a pour objectif d'analyser la structure des dépenses planifiées sur le budget d'investissements publics de santé afin de s'assurer qu'elles sont de nature à favoriser positivement l'accès aux soins et services de santé pour les populations de la région du Centre.

Pour ce faire, il met en relief l'offre de soins et services de santé dans la région, la typologie des projets planifiés sur le budget d'investissements

publics de santé, leurs niveaux d'affectations (central ou déconcentré) et leur structure.

I.   Localisation de la zone d'étude

La région du Centre s'étend sur une partie du plateau Sud-Camerounais. Elle couvre une superficie de 68 953 km^2 et est limitée : au sud par la région du Sud, à l'est par la région du l'Est, au nord par la région de l'Adamaoua et à l'ouest par les régions du Littoral et de l'Ouest.

Selon les données du BUCREP (2010)[1], elle abritait 3 098 044 habitants, soit une densité moyenne de 44,9 habitants au km². Ethnologiquement, il s'agit principalement de Bantous, notamment les sous composantes Betis, Mbamoise et Bassa. Ces communautés présentent une hétérogénéité linguistique et culturelle.

Sur le plan administratif, elle compte 10 départements et 70 arrondissements. La ville de Yaoundé qui est le principal centre urbain de la région, est à la fois son chef-lieu et la capitale politique du pays. Elle abrite les services centraux du Ministère de la Santé Publique. Les autres villes étant semi-urbaines ou rurales.

Sur le plan sanitaire, la région administrative du Centre compte deux régions sanitaires : la ville de Yaoundé qui compte 06 districts de santé[2] fortement urbanisés et le reste de la région qui s'étend sur 24 districts de santé ruraux ou semi-ruraux. Les 30 districts de santé qui composent la région du Centre sont subdivisés en 287 aires de santé. Ils présentent un profil sanitaire homogène qui est marqué par une prédominance des maladies endémiques tel que le paludisme.

Sur le plan politique, la région du Centre est un bastion du parti au pouvoir. En effet, durant la période d'étude, l'ensemble des parlementaires et des exécutifs communaux étaient issus de ce dernier.

II.   Méthodologie

Afin d'atteindre les objectifs escomptés, une revue documentaire a été effectuée. En vue de mettre en exergue l'offre de soins et services de santé dans la région, des publications du MINSANTE ont été exploitées. Il s'agit

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[1] Bureau Central des Recensements et des Etudes de Population du Cameroun *« Rapport de présentation des résultats définitifs », sur www.statistics-cameroon.org , avril 2010* (consulté le 10 octobre 2020)

[2] Le District de Santé est l'unité opérationnelle du système de santé camerounais. C'est une zone géographique dont la délimitation suit les limites administratives du territoire national, ou en cas de besoin, peut couvrir plusieurs entités administratives limitrophes. Le District de santé est placé sous la responsabilité d'un Chef de District. Ce dernier est en charge de la coordination, la régulation de l'offre de soins dans son unité. Afin d'assurer le maillage du territoire et accroitre la couverture géographique en structures de soins, le district de santé est divisé en aires de santé.

entre autres du rapport 2017 de suivi des 100 indicateurs clés de Santé de la République du Cameroun, du profil sanitaire analytique du Cameroun de 2016 et du Plan National de Développement Sanitaire 2016-2020.

Les données portant sur la structure du budget d'investissements publics de santé dans la région ont été tirées des journaux de projets de 2013 à 2017. Ces derniers ont été compilés dans l'optique d'inventorier et de classifier la totalité des projets d'investissements publics alloués au MINSANTE et affectés à la région (tant au niveau central que déconcentré).

Ces données ont été désagrégées grâce au recours du logiciel Excel. Elles ont par la suite été classifiées de manière à mettre en évidence la typologie des projets alloués, les districts et les aires de santé bénéficiaires. L'analyse de ces données a permis de générer des figures et des tableaux qui ont servis de base pour l'élaboration de la cartographie de distribution spatiale des projets d'investissements publics de santé au sein de la région.

III.   Revue de la littérature

La dépense publique en général et le budget d'investissements publics en particulier ont fait l'objet de nombreuses publications. De manière holistique, il ressort qu'ils jouent un rôle majeur dans l'économie d'une nation car ils impactent directement le processus de production et constituent par conséquent un socle pour la croissance économique. A priori, plus elle est importante, plus le pays a des chances de booster ses indicateurs de développement. De façon spécifique, lorsque les pays investissent dans la mise en place des infrastructures pouvant servir non seulement au secteur public, mais également au secteur privé, cela aboutit à la création d'emplois et à une augmentation des revenus dans la société (MINEPAT, 2019).

Au Cameroun, le budget du Ministère de la santé est passé de 162,4 en 2013 à 208,1 milliards en 2017, soit un taux d'accroissement de 28,75%. Toutefois, en dépit de cet accroissement, ces financements restent insuffisants et les dépenses publiques de santé en proportion des dépenses totales de santé et du PIB (0,9 %) restent parmi les plus faibles en Afrique. Les financements publics de la santé comprennent les ressources mobilisées à travers le budget national, les établissements de santé via le recouvrement des coûts et les fonds externes provenant des organismes internationaux de développement.

Pour la Banque Mondiale (2018), le Cameroun doit accorder une plus grande priorité au secteur de la santé dans le budget global de l'État en augmentant les ressources budgétaires allouées au secteur de la santé. En d'autres termes, l'allocation budgétaire de la santé publique devrait être augmentée de manière significative afin d'influencer positivement et significativement le taux du produit intérieur brut sur une période relativement longue (Hugue Nkoutchou, 2018)

En effet, il existe une inadéquation préoccupante entre les ressources disponibles et la demande de soins de santé. Les investissements publics ne semblent pas correspondre aux besoins de la population. Par exemple, les régions enregistrant le plus haut taux de mortalité des moins de cinq ans reçoivent en moyenne des allocations budgétaires par habitant moins élevées (INS. 2010). Il est donc indispensable d'adopter une approche efficiente dans l'élaboration du budget d'investissements publics afin que les projets qui y sont inscrits puissent dynamiser de manière significative les indicateurs sanitaires et économiques du pays.

Selon François (2010), les allocations sur le budget d'investissement publics se fait généralement selon trois logiques : économique, politique et cognitive. Sur le plan économique, l'allocation des investissements visent les territoires les plus touchés par la crise économique, c'est-à-dire ceux qui connaissent un ralentissement économique important, et/ou dans les territoires les plus pauvres. L'explication politique quant à elle suppose que le choix des projets à financer peuvent s'appuyer sur des considérations politiques au travers d'un favoritisme territorial. Ce favoritisme territorial s'exprime à travers trois canaux de la prise de décision publique : en fonction du lieu de décision et la source de l'influence exercée.

L'approche cognitive voudrait que le décideur politique soit confronté à un manque d'information sur la localisation des investissements publics pertinents. Pour y faire face, il s'appuie sur les décisions des collectivités locales qui ont une bonne connaissance de l'environnement socioéconomique local et disposent d'une meilleure information concernant les besoins en investissements publics dans leurs localités respectives. Ces trois logiques explicatives de la localisation de la décision publique en matière de localisation des investissements ne sont pas nécessairement exclusives les unes des autres.

Pour être efficaces, les dépenses d'investissements publics doivent planifiées de manière rigoureuse, elles doivent pouvoir impulser le développement au niveau local et apporter des réponses aux besoins spécifiques des populations et réduire les disparités entre les territoires et en leur sein. Pour Schiavo-Campo et Tommasi (1999), dans les années 1970 et 1980, des plans d'investissement ont été recommandés comme un moyen de relier un portefeuille de projets d'investissement à un plan de développement pluriannuel, l'idée sous-jacente de ces documents de planification était de créer une série de projets bien préparés, évalués à l'aide de l'analyse coûts-bénéfices et prêts à être sélectionnés dans le processus budgétaire annuel. Mais dans la pratique, les résultats de la planification de l'investissement public étaient mitigés et le processus a souvent mené à de longues « listes de souhaits » dominées par une variété de propositions de projets faibles ou du moins

discutables. Il est donc impératif pour les décideurs de concilier les attentes des populations et les déterminants économiques, politiques et cognitifs.

Au Cameroun les allocations de projets sur le budget d'investissements publics en général et celui de santé en particulier restent peu efficientes. En effet, une revue des dépenses publiques camerounaises effectuée par la Banque Mondiale en 2018 met en exergue la nécessite d'une réévaluation de l'efficacité globale de ces dernières. La croissance économique enregistrée au début de la décennie 2010 n'a pas eu une incidence significative sur le taux de pauvreté (37,5 % en 2014). Par ailleurs, sur le plan géographique, on note une disparité de la répartition de cette pauvreté. Cette dernière est plus concentrée dans les régions du Nord et de l'Extrême-Nord. Le même clivage économique affecte les zones urbaines et rurales des parties Sud et Nord du pays. Entre 2007 et 2014, on a ainsi enregistré 7 points de pourcentage d'inégalité selon la mesure de l'indice de Gini.

Cette revue effectuée entre 2006 et 2015, fait une évaluation de l'efficacité et de l'équité des dépenses publiques dans les domaines de la santé publique, l'éducation et la protection sociale. Elle met une emphase sur trois dimensions : l'efficacité allocative et technique, l'efficience et l'équité[3]. Dans le secteur de la santé particulièrement, le rapport établit les constats suivants :

- Certains indicateurs du secteur de la santé au Cameroun ont enregistré une légère amélioration, mais plusieurs se sont détériorés et la dépense publique globale pour le secteur reste toujours faible par rapport à d'autres pays comparables.
- La faiblesse de l'efficacité et de l'équité des dépenses publiques constitue un sérieux obstacle à la réalisation des objectifs politiques énoncés par le gouvernement. Le manque d'efficacité technique et allocative réduit l'optimisation des ressources dans le secteur public. L'inefficacité allocative est particulièrement critique dans le secteur de la santé, où l'attention excessive accordée aux grands hôpitaux se fait au détriment des soins primaires.
- La dépense publique de santé est faible et sa part dans le budget national diminue.
- L'inefficacité allocative réduit considérablement l'impact des dépenses publiques de santé. Le budget de la santé est majoritairement affecté au niveau central de l'administration, et moins de 10% sont affectés aux établissements de santé au niveau régional et du district. La répartition régionale du budget de la santé ne tient pas compte des

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[3]« L'efficacité allocative » désigne la répartition des ressources budgétaires entre les domaines politiques, tandis que « l'efficacité technique » décrit la mesure dans laquelle ces ressources sont utilisées aux fins prévues. « Efficience » correspond à l'incidence marginale des dépenses sur les objectifs de politique spécifiques, et « équité » désigne la répartition des ressources entre les ménages dans différents groupes régionaux, démographiques et socioéconomiques.

besoins des populations locales, de leur statut socioéconomique, du fardeau de la maladie ou du contexte sécuritaire.

Lorsque l'on s'attarde sur la typologie des projets inscrits sur le budget d'investissements publics de santé, le plan national de développement sanitaire 2016-2020 relève qu'il n'y a pas d'adéquation entre le rythme de construction des formations sanitaires, leur équipement, leur dotation en ressources humaines et en logistique sanitaire. Il en résulte un nombre élevé de formations sanitaires dépourvues de plateaux techniques adéquats et par conséquent incapables de prodiguer des soins et services de santé efficients.

VI.   Offre de soins dans la région du Centre

Entre 2013 et 2017, le nombre de formations sanitaires dans la région du Centre est passé de 794 à 1139 soit un taux de croissance de 43,45%. Durant la même période, la population de la région est passée de 3 823 293 à 4 383 480 habitants soit un taux d'accroissement de 17,26%. Le nombre de formations sanitaires pour un groupe de 100 000 habitants est ainsi passé de 20,76 en 2013 à 25,4 en 2017. Ces données qui démontrent une certaine croissance dans le nombre total des structures hospitalières cachent une forte disparité au niveau régional. En effet, la plupart de ces formations sanitaires sont situées dans les centres urbains. A titre d'illustration, en 2017, la ville de Yaoundé à elle seule concentrait 52,94% de l'ensemble des formations sanitaires de la région. Par ailleurs bien que le nombre total de structures de soins de santé se soit globalement accrue, entre 2013 et 2017, certains districts de santé ruraux ont vu leur nombre de formations sanitaires décroitre. Il s'agit notamment de : Eséka (40% de taux de régression), Esse (35,7%), Nanga-Eboko (22,2%), Ebebda (14,3%), Mbankomo (11,8%), Evodoula (9,1%), Mbalmayo (7%), Yoko (7,7%), Okola (3,4%) et Nkolbisson (2,4%).

D'une manière générale, les données du rapport de suivi des 100 indicateurs clés de santé au Cameroun en 2017 montrent que la couverture du territoire reste insuffisante. Cela se traduit par un faible accès aux services de santé notamment pour les populations vivant à plus de 05 km d'un établissement de santé. En effet selon le MINSANTE (2016), pour une population de 10 000 habitants, seulement 2,99% des établissements de santé en moyenne étaient situés dans un rayon de cinq kilomètres dans la région du Centre. Dans le même sillage, en 2016, la région ne disposait en moyenne que de 12,44 lits pour 10 000 habitants alors que la moyenne nationale était de 26,49 lits.

Tout comme le reste du pays, le Centre souffre globalement d'un déficit en infrastructures, équipements sanitaires et les plateaux techniques sont pour la plupart dégradés faute de maintenance. En effet, une étude réalisée par l'Institut National de Statistiques en 2012 a révélé une absence de boites

d'accouchements dans 24,5% des formations sanitaires, de système de stérilisation à sec (39,5%), de boite de césarienne (67,5%) et de microscopes fonctionnels (11,6%) dans certaines formations sanitaires.

Sur le plan humain, selon le dernier Recensement général des personnels de santé effectué en prélude à l'élaboration du plan de développement des ressources humaines en santé de 2011, la région enregistrait 24,33% des personnels de santé du pays. Avec un ratio de 2,56 personnels de santé pour une population de 1 000 habitants[4], ce taux faisait de cette dernière la mieux lotie au niveau national. Toutefois, une fois de plus ce ratio cache d'énormes disparités entre le milieu urbain et rural. Les formations sanitaires situées en zones urbaines étant mieux pourvues en personnels de santé que celles situées en zone rurale. Les villes de Yaoundé, Douala et Bafoussam à elles seules polarisent plus de 55% de l'effectif total des personnels de santé que compte le pays.

Au vu de ces données, la logique voudrait que les investissements publics de santé soient principalement orientés vers le niveau déconcentré, qui est en charge de la dispensation des soins et services de santé. De manière spécifique, ils devraient porter sur :

- La construction des formations sanitaires en zone rurale afin d'améliorer le maillage territorial en formations sanitaires et d'accroitre l'offre de soins et services de santé ;
- L'entretien et la réhabilitation des infrastructures sanitaires dans l'optique de maintenir optimale leur capacité opérationnelle ;
- L'équipement des structures hospitalières en vue d'améliorer des indicateurs relatifs au renforcement du plateaux techniques (offre en lit, kits d'accouchement, système de stérilisation, laboratoire…) ;
- L'élaboration et la mise en place de politique efficace de gestion des ressources humaines dans l'optique d'améliorer le ratio personnel de santé/habitant et de faire face aux disparités (centre urbain/zone rurale) dans les affectations de personnels de santé.

V.   Affectations des projets d'investissements publics en fonction du niveau central et déconcentré du MINSANTE

De l'analyse des affectations d'investissements publics de santé contenues dans les journaux de projets, il ressort qu'entre 2013 et 2017, le MINSANTE s'est vu attribué une allocation de 513 931 003 000 de francs CFA d'investissements publics. De cette enveloppe budgétaire, 388 760 938 000 (soit 75,64% de l'enveloppe globale) ont directement été affectés

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[4] En 2011 la moyenne nationale était de 1,07 personnel de santé pour 1 000 habitants. Les normes OMS recommandent 2,3.

aux structures relevant du niveau central et assimilé tandis que 125 170 065 000 ont été alloué au niveau déconcentré pour l'ensemble des dix régions du pays. Pour le cas spécifique de la région du Centre, cette dernière s'est vue dotée d'une allocation de 37 185 970 000 francs CFA soit 7,24% du budget d'investissements publics de santé du pays pour la période d'étude. Au final, entre 2013 et 2017, la région du Centre (niveau central et déconcentré confondus) s'est vue attribuée une dotation budgétaire de 425 946 908 000 francs CFA (82,88% de l'ensemble du budget d'investissements publics du MINSANTE pour la période).

En termes de projets d'investissements, durant cette période, la région du Centre (niveau central et déconcentré confondus) s'est vue attribuée 868 projets d'investissements publics en santé : 561 projets ont été alloués aux services centraux et assimilés tandis, 307 au niveau déconcentré (dont 34 projets affectés de manière incorrecte)[5].

Au niveau central, les projets et les allocations budgétaires y afférentes ont été attribuées aux services centraux du MINSANTE, aux programmes, aux organismes relevant du niveau central ou assimilés. Au niveau déconcentré, les récipiendaires ont été les délégations régionales du MINSANTE, les services de santé de districts et les formations sanitaires. Toutefois, certaines affectations faites au niveau déconcentré ont été directement gérées par des structures et programmes du niveau central.

Si au niveau déconcentré, les affectations de projets et les budgets y afférents sont directement faites aux structures relevant de ce niveau, au niveau central, on distingue deux niveaux d'affections du budget d'investissements publics :

- Une affectation directe qui porte sur des projets rattachés, mis en œuvre et/ou gérés directement par des structures de niveau central ou assimilées (Directions, Divisions, programmes, organismes spécialisés…). Entre 2013 et 2017, le montant cumulé desdites affectations était de 388 760 938 000 de francs CFA
- Une affectation dédiée qui porte sur des allocations faites à des structures de niveau déconcentré, mais qui sont gérées par des structures de niveau central. Durant la période d'étude, ce type affectations ont toutes été adossées au département du Mfoundi. Elles ont contribué à augmenter la masse de financement géré au niveau

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[5]Il s'agit d'allocations géographiquement inadéquates, des allocations à des formations sanitaires inexistantes dans la carte sanitaire et de l'usage des noms de formations sanitaires incorrects qui rendent difficiles leur localisation. Le montant total de l'enveloppe budgétaire affectée aux 34 projets mal alloués est de 983 483 000 francs CFA. Ces projets et les enveloppes budgétaires y afférentes n'ont pas été pris en compte dans le traitement des données. Au final, seuls les 273 projets qui ont été correctement affectés au niveau déconcentré ont fait l'objet d'analyse dans le cadre de cette étude.

central pour une enveloppe globale de 13 821 158 000 de francs CFA. De manière spécifique, en 2014, sur 3 438 000 000 francs CFA d'investissements publics attribués au département du Mfoundi, 2 638 000 000 francs CFA ont été gérés par des structures relevant du niveau central. En 2015, sur une allocation budgétaire de 8 804 108 000 francs CFA, seulement 225 950 000 francs CFA ont effectivement été alloués à des structures de niveau déconcentré du département. En 2016, ce montant était de 457 000 000 francs CFA alors que l'enveloppe budgétaire affectée au Mfoundi était de 1 289 000 000 francs CFA. En 2017, l'allocation budgétaire était de 16 620 660 000 francs CFA. Cependant, ce n'est que 14 847 660 000 francs CFA qui ont été véritablement gérés par des structures relevant du niveau déconcentré.

Au final en fonction des années le niveau Central a géré les volumes financiers contenus dans le tableau ci-après :

Tableau 1 : Ecart en milliers entre les allocations directes au Niveau Central et celles réellement gérées par ce niveau (Affectations faites à la Région du Centre comprises)

	2013	2014	2015	2016	2017
Dotation propre Administration centrale et programmes	61512200	61086300	84195000	98413000	83554438
Total géré Administration centrale et programmes (Allocations Mfoundi comprises)	61512200	63724300	92773158	99245000	85327438
Ecarts	0	2638000	8578158	832000	1773000

Source : Synthèse des journaux des projets 2013-2017

Si l'on considère le volume total de financements géré par le niveau central entre 2013 et 2017, le montant cumulé des enveloppes allouées s'élève a 402 582 096 000 soit un peu plus de 78,33% du montant global d'investissements publics attribué au MINSANTE pour l'ensemble du pays et 94,73% du budget global alloué à la région. Ceci est tout à fait normal dans la mesure où ces projets portent en majeure partie sur des flux financiers (financements externes, fonds de contrepartie et autres subventions) devant servir au financement de la santé.

Au niveau déconcentré, avec 7,24% des allocations globales du budget d'investissements publics, la région du Centre occupe la première place en termes de volume budgétaire. Vient ensuite celles du Nord (3,22 %), du Sud (2,49 %), du Littoral (2,46 %) et de l'Ouest (2,41 %). Les régions qui ont reçu le moins de budget d'investissements publics sur la période d'étude sont celles de l'Adamaoua (1,06 %), du Nord-Ouest (1,13 %) et du Sud-ouest (1,21 %).

Au vu du volume des allocations attribuées à la région du Centre, l'on constate que cette dernière est la mieux lotie. Toutefois, du fait de sa proximité avec les institutions relevant du niveau central et/ou assimilées, les dépenses d'investissements publics qui lui sont affectés (et plus particulièrement au département du Mfoundi[6]) sont parfois gérées directement par des structures et directions relevant du niveau central. Au final l'enveloppe gérée par les structures relevant du niveau central s'en trouve accrue, tandis que celle allouée aux services déconcentrés de la région (précisément celle du département du Mfoundi) est amputée. Lorsque l'on déduit les enveloppes allouées au niveau déconcentré mais gérées par le niveau central, le volume budgétaire affecté au niveau déconcentré de la région chute à 4,54% du volume d'investissements publics global de santé du pays (soit 5,26% du budget global d'investissements publics de santé attribué à la région du Centre). Dans le même temps, la portion gérée par le niveau central passe de 75,64% à 78,33% du budget d'investissements publics de santé global du pays. Dans les tous les cas de figure, la région du Centre reste la mieux dotée au niveau déconcentré en termes de volume d'investissements publics de santé.

Tableau 2 : Allocations du budget d'investissements publics en santé réellement gérées par le niveau central et le niveau déconcentré dans la région du Centre 2013-2017 (en milliers)

	2013	2014	2015	2016	2017
Allocations attribuées à la Région du Centre	2 093 800	4 695 400	9 869 600	2 623 900	17 903 270
Allocations attribuées au niveau déconcentré mais gérées par les structures du niveau central et assimilées	0	2 638 000	8 578 158	832 000	1 773 000
Allocations réellement affectées au niveau déconcentré	2 093 800	2 057 400	1 291 442	1 791 900	16 130 270
Allocations initiales attribuées au niveau central et assimilé	61 512 200	61 086 300	84 195 000	98 413 000	83 554 438
Allocations réellement gérées par les structures de niveau central et assimilées	61 512 200	63 724 300	92 773 158	99 245 000	85 327 438

Source : Synthèse des journaux des projets 2013-2017

Dans le cadre de cette étude, seuls les projets correctement alloués ont été pris en compte. On en dénombre 834 (561 au niveau central et 273 au niveau déconcentré). L'enveloppe budgétaire y afférente était de 424 973 425 000. 94,73% (402 582 096 000 francs CFA) de cette allocation a été gérée par des structures relevant du niveau central ou assimilées tandis que

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[6] Le département du Mfoundi s'étend sur la ville de Yaoundé, capitale du pays.

seulement 5,26% (22 391 329 000 francs CFA) a été affecté au niveau déconcentré.

D'une manière générale, on observe l'essentiel des projets et des enveloppes budgétaires y afférents est affecté au niveau central. Bien que ces volumes financiers soient pour la plupart consacrés aux transferts de fonds et subventions, il n'en demeure pas moins que le volume financier d'investissements publics de santé dédiée au niveau opérationnel reste faible. Ce qui laisse peu de marge pour l'accroissement de l'offre de soins et services de santé au niveau communautaire.

Ces données confirment celles relevées par la Banque Mondiale (2018) qui établissement que le budget de la santé est majoritairement affecté au niveau central de l'administration, et moins de 10% sont affectés aux établissements de santé au niveau régional et du district. Elle évoque la nécessité de « *rééquilibrer la répartition des ressources du niveau administratif central au point de prestation des services au niveau des districts, et à l'égard des populations et régions plus pauvres, plus reculées et plus vulnérables* »

VI. Structures des projets d'investissements publics de santé dans la Région du Centre

Au Cameroun, en fonction de la nature de la dépense et des objectifs visés, les projets inscrits dans le budget d'investissements publics de santé peuvent être répartis selon les catégories de dépenses suivantes :

- *Le suivi, la supervision, les audits, la maîtrise d'œuvre et le contrôle* qui englobent les projets relatifs à la maitrise d'œuvre des bâtiments et des infrastructures, aux audits financiers et techniques, aux missions de suivi d'évaluation et supervision effectuées par les services compétents ;

- *La communication* à travers la conception, l'élaboration, la production et la diffusion des divers supports de communication, l'organisation des conférences, symposiums, colloques et autres fora, la production et la diffusion des documents normatifs, l'organisation des activités marquant la célébration des différentes journées sanitaires, l'organisation ainsi que la mise en place de cadre de concertation et de collaboration entre les différents acteurs de la santé et la gestion de l'image et de la visibilité du MINSANTE, de ses démembrements et de ses programmes ;

- *La construction* des formations sanitaires à tous les niveaux de la pyramide sanitaire, des bureaux pour les services de districts de santé, des laboratoires d'analyses médicales, des centres d'imageries médicales, des banques de sang, des logements d'astreintes pour les

responsables des formations sanitaires, des enceintes et clôtures des formations sanitaires…

- *L'eau et assainissement* à travers l'implantation des points d'eau potable dans les formations sanitaires et la construction de toilettes ;
- *L'équipement* des formations sanitaires, des services de districts de santé et des divers programmes en matériel de bureau et autres équipements qui concourent à l'amélioration des conditions et du cadre de travail ;
- *Les études* diverses et variées qui couvrent aussi bien l'incidence des maladies, les études d'impacts environnementaux, financiers et géotechniques préalables à la construction des infrastructures, les évaluations de la qualité des services et des prestations, l'évaluation de l'efficacité des médicaments et des protocoles de soins, les analyses situationnelles et les inventaires divers ;
- *La formation et le renforcement des capacités* qui regroupent les sessions de renforcement des capacités dans la prise en charge des maladies diverses, l'utilisation des équipements, l'élaboration des modules de formations, l'acquisition du matériel pédagogique et de la logistique nécessaire pour les sessions de renforcement des capacités ;
- *La fourniture en énergie électrique* au travers du raccordement au réseau électrique, l'accroissement de la puissance des lignes d'approvisionnement en énergie électrique, l'acquisition de groupes électrogènes… ;
- *L'information sanitaire* qui inclut l'élaboration des modules pour le système d'information sanitaire, l'acquisition des registres et autres outils indispensables à la collecte et à la remontée des données sanitaires, l'acquisition du matériel informatique pour les cellules d'information sanitaire ;
- *L'acquisition du matériel médical et des consommables médicaux* au bénéfice des formations sanitaires à tous les niveaux de la pyramide sanitaire. Ces acquisitions couvrent aussi bien le petit matériel de soins que des équipements plus complexes tels que les scanners, les couveuses et autres.
- *L'acquisition du matériel roulant* notamment les ambulances, les motos et les véhicules pour les responsables à divers échelons de la pyramide sanitaire ;
- *L'acquisition des médicaments et intrants* tels que les antirétroviraux, les antituberculeux, les antipaludiques, les moustiquaires imprégnées à longue durée d'action, les tests de diagnostics et de dépistages en tout genre…

- *L'élaboration des documents de politiques, normes et règlements* définissant les protocoles de soins, les normes d'interventions et de prise en charge des pathologies, les cadres réglementaires spécifiques, les diverses politiques nationales régissant l'accès aux soins et services de santé ;
- *L'entretien et la réhabilitation des infrastructures* tels que les bâtiments (réfection des toitures, des bureaux, des salles d'hospitalisation, des toilettes…) et les équipements (laboratoires, salles d'accouchement…) ;
- *Les transferts de fonds et les subventions* au profit des formations sanitaires, des structures de soins et de recherches, des corporations des personnels sanitaires… et le paiement des arriérés dus aux prestataires de services.

Toutefois, certains types de projets ne sont pas alloués au niveau déconcentré. Il s'agit de ceux relatifs :

- À la communication : Les politiques et stratégies de communication sont définies au niveau central. C'est également les instances relevant de ce niveau qui ont la responsabilité de la conception et de la production des supports de communication. Le niveau déconcentré étant principalement un champ de diffusion des différents supports de communication élaborés au niveau central.
- Aux études : Tout comme la communication, les études sont principalement menées par les structures de niveau central. Ces dernières permettent d'avoir des données qui permettent la prise de décision en matière de santé.
- À la formation et au renforcement des capacités : les budgets alloués au renforcement des capacités sont principalement alloués au niveau central. Même si les sessions de renforcement des capacités et de formations continues sont essentiellement organisées au bénéfice des acteurs du niveau déconcentré,
- À l'information sanitaire : les intervenants du niveau déconcentré sont principalement impliqués dans la collecte de l'information sanitaire à travers des outils et systèmes qui sont conçus et produits par des instances du niveau central.
- À l'acquisition du matériel roulant : Bien que du matériel roulant (motos, ambulances, véhicules…) soit mis à disposition des structures de niveau déconcentré, leur acquisition dans le cadre du budget d'investissements publics se fait principalement par des instances relevant du niveau central.

- À l'acquisition des médicaments et intrants : les acquisitions de médicaments et intrants sous budget d'investissements se font principalement par des instances de niveau central (généralement par la Centrale Nationale d'Approvisionnement en Médicaments et Consommables Essentiels). Ces derniers sont mis à dispositions des formations sanitaires à travers les centrales d'approvisionnement régionales.
- À l'élaboration des documents de politiques, normes et règlements : les politiques et normes et règlements sont élaborés au niveau central. Les acteurs relevant du niveau déconcentré se contentent de les mettre en application.

D'une manière générale, l'analyse désagrégée de la typologie des projets inscrits au budget d'investissements publics du MINSANTE dans la région du Centre fait ressortir une prépondérance des projets portant sur les transferts de fonds et subventions (31%), des constructions (14,51%) et de l'acquisition du matériel médical et des consommables médicaux (12,71%). Les projets les moins représentés sont ceux qui concourent à la remontée de l'information sanitaire (0,84%) à l'approvisionnement en eau potable et assainissement (1,68%) et à l'acquisition du matériel roulant (1,80%).

En termes de volume financier, les transferts de fonds et subventions représentent 78,34% des allocations budgétaires. Avec 6,66% et 6,34% respectivement, l'entretien et la réhabilitation des infrastructures et l'acquisition des médicaments et intrants occupent la deuxième et la troisième place. Les constructions qui représentent pourtant 14,5% du nombre total des projets ne mobilisent que 3,48% du budget global. L'acquisition du matériel médical et des consommables médicaux ne constitue que 1,11% des financements alors qu'il représente 12,71% des projets.

Au rang des allocations toutes inférieures à 1% du volume global du budget d'investissements publics affecté à la région durant la période d'étude, on compte celles relatives à l'information sanitaire (0,02%), l'approvisionnement en eau potable et assainissement (0,03%), à la communication (0,08%), à la fourniture de l'énergie électrique (0,08%), à la formation et au renforcement des capacités (0,11%), à l'élaboration des documents de politiques, normes et règlements (0,12%), au suivi à la supervision, aux audits, au contrôle et à la maîtrise d'œuvre (0,37%), aux études (0,37%) et à l'acquisition du matériel roulant (0,37%).

Tableau 3 : Typologie, quantité de projets et allocations du budget d'investissements publics en santé dans la Région du Centre entre 2013 et 2017 (en milliers)

|	Niveau déconcentré				Niveau central				Total Région Centre			
	Nombre de projets	%	Montant alloué	%	Nombre de projets	%	Montant alloué	%	Nombre de projets	%	Montant alloué	%
Suivi, la supervision, les audits et contrôle	3	1,10	74 000	0,33	23	4,10	1494202	0,37	26	3,12	1 568 202	0,37
Communication	0	0	0	0,00	21	3,74	326154	0,08	21	2,52	326 154	0,08
Construction	88	32,23	4 436 101	19,81	33	5,88	10364500	2,57	121	14,51	14 800 601	3,48
Eau et assainissement	11	4,03	93 500	0,42	3	0,53	25500	0,01	14	1,68	119 000	0,03
Équipement	45	16,48	8 505 850	37,99	23	4,10	2080090	0,52	68	8,15	10 585 940	2,49
Études	0	0	0	0,00	37	6,60	1565000	0,39	37	4,44	1 565 000	0,37
Formation et le renforcement des capacités	0	0	0	0,00	23	4,10	487013	0,12	23	2,76	487 013	0,11
Fourniture en énergie électrique	9	3,30	111 000	0,50	8	1,43	230000	0,06	17	2,04	341 000	0,08
Information sanitaire	0	0,00	0	0,00	7	1,25	90800	0,02	7	0,84	90 800	0,02
Acquisition du matériel médical et des consommables médicaux	70	25,64	1 295 000	5,78	36	6,42	3406000	0,85	106	12,71	4 701 000	1,11
Acquisition du matériel roulant	0	0,00	0	0,00	15	2,67	1670184	0,41	15	1,80	1 670 184	0,39
Acquisition des médicaments et intrants	0	0,00	0	0,00	52	9,27	26960979	6,70	52	6,24	26 960 979	6,34
Élaboration des documents de politiques, normes et règlements	0	0,00	0	0,00	24	4,28	530000	0,13	24	2,88	530 000	0,12
Entretien et la réhabilitation des infrastructures	35	12,82	7 617 869	34,02	12	2,14	20680000	5,14	47	5,64	28 297 869	6,66
Transferts de fonds et les subventions	12	4,40	258 009	1,15	244	43,49	332671674	82,63	256	31	332 929 683	78,34
Total	**273**	**100**	**22391329**	**100**	**561**	**100**	**402582096**	**100**	**834**	**100**	**424 973 425**	**100**

Source : Synthèse des journaux des projets 2013-2017

De manière spécifique, on dénombre 561 projets qui ont été affectés au niveau central. Le montant cumulé des enveloppes y allouées s'élève à 402 582 096 000 soit un peu plus de 78% du montant global attribué au MINSANTE pour les investissements publics durant la période 2013-2017. 43,49% des projets logés au niveau central ont portés sur des transferts de fonds et des subventions. Le montant associé à ces transferts de fonds représentait 82,63% des allocations budgétaires faites à ce niveau.

Les acquisitions de médicaments et intrants et celles de matériel médical et de consommables médicaux représentent respectivement 9,27 et 6 ,42 % de l'effectif global des projets alloués au niveau central. Au rang des projets peu planifiés, on compte la fourniture de l'énergie électrique (1,43%), la collecte de l'information sanitaire (1,25%) et l'accès à l'eau et assainissement (0,53%).

En termes de volume financier, après les lignes budgétaires dédiées aux transferts de fonds, viennent les dépenses d'acquisition de médicaments et intrants (6,7% de l'enveloppe globale) et celles d'entretiens et de réhabilitation des infrastructures (5,14%). Les rubriques les moins financées sont celles liées à la communication (0,08%), à l'information sanitaire (0,02%) et à la fourniture de l'eau et assainissement (0,01%).

Figure 1 : Etat comparé du pourcentage du nombre de projets alloués par rubrique et pourcentage de volume de financement y afférent alloué au niveau Central dans la région du Centre 2013-2017
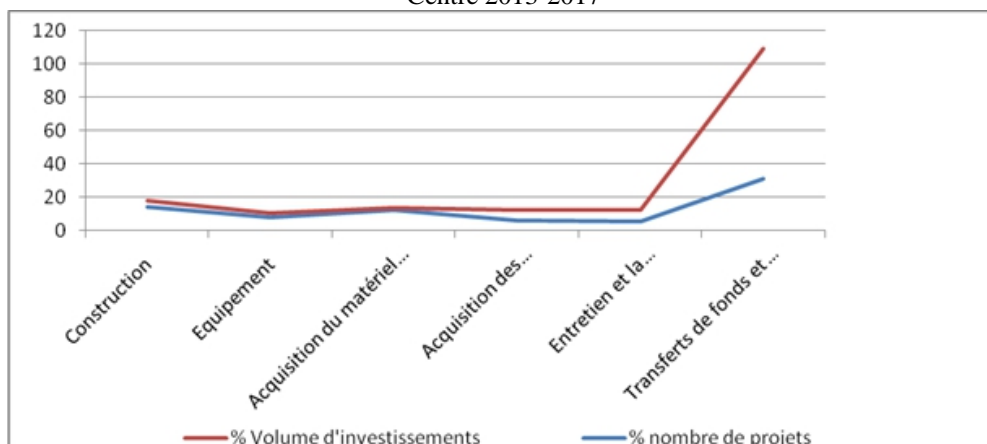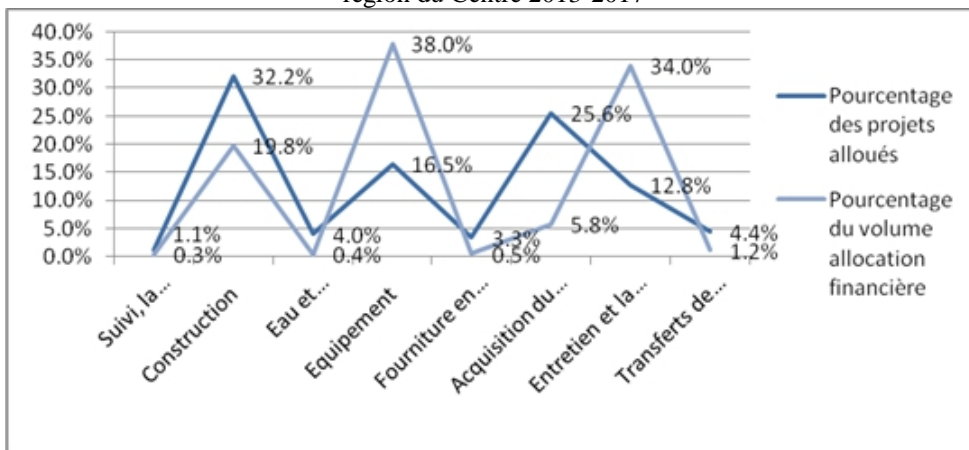

Source : Synthèse des journaux des projets 2013-2017

Au niveau déconcentré, entre 2013 et 2017, 273 projets d'investissements publics du MINSANTE ont été correctement affectés sur le budget d'investissements publics dans la région du Centre. De l'analyse des journaux de projets, il ressort que les projets les plus nombreux sont ceux de construction (32.2%), d'acquisition de matériels et de consommables médicaux (25,6%), d'équipements (16,6%) et d'entretien et réhabilitation des infrastructures (12,8%). Les projets les moins nombreux sont ceux qui portent

sur la fourniture de l'eau et l'assainissement (4%), la fourniture en énergie électrique (3,3%) et le suivi, la supervision, les audits, la maîtrise d'œuvre et le contrôle[7] (1,1%).

Figure 2 : État comparé pourcentage du nombre de projets alloués par rubrique et pourcentage de volume de financement y afférent alloué au niveau déconcentré dans la région du Centre 2013-2017

Source : Synthèse des journaux des projets 2013-2017

De l'analyse des volumes financiers, il ressort qu'au niveau déconcentré, les projets qui reçoivent le plus de financement portent sur l'équipement (38% de l'enveloppe budgétaire), l'entretien et la réhabilitation des infrastructures (34%) et la construction des infrastructures de santé (19,8%). Au rang des projets les moins financés, on enregistre la fourniture en énergie électrique (0,5%), l'accès à l'eau et l'assainissement (0,4%) et le suivi, la supervision, les audits, la maîtrise d'œuvre et le contrôle (0,3%).

Une approche désagrégée par année montre que 2017 aura été une année charnière. En effet, au courant des années précédentes, le nombre le plus important des projets et les volumes de financements y afférents étaient consacrés aux constructions. En 2017, avec les réalisations effectuées dans le cadre du plan d'urgence triennal (PLANUT)[8], la tendance a évolué et un accent particulier a été mis sur l'équipement et la réhabilitation des infrastructures.

[7] Au niveau déconcentré, cette rubrique porte principalement sur la maitrise d'œuvre.
[8] Le Plan d'urgence triennal 2015-2017 pour l'accélération de la croissance économique (PLANUT) est un vaste programme d'investissements qui vise a accélérer la mise en œuvre du Document de Stratégie pour la Croissance et l'Emploi (DSCE). Il a pour finalité, le renforcement des performances de l'économie nationale et l'amélioration des conditions de vie des populations camerounaises. Il se décline en un programme triennal d'investissements dans les secteurs tels que l'aménagement urbain, l'habitat, la santé, l'agriculture, l'élevage, les infrastructures routières, l'eau, l'énergie et la sécurité.

L'examen des données tirées des journaux de projets de 2013 à 2017, montre que pour l'ensemble des 834 correctement planifiés au bénéfice de la région, en dehors des lignes budgétaires portant sur des transferts de fonds et subventions qui occupent une place prépondérante (31% de l'effectif global des projets), un accent est mis sur les dépenses jugées prioritaires : constructions d'infrastructures sanitaires (14,51%), acquisition du matériel médical et des consommables médicaux (12,71%), équipement des formations sanitaires (8,15%), acquisition des médicaments et intrants (6,24%) et entretien et la réhabilitation des infrastructures et des équipements (5,64%). Ces données démontrent une certaine cohérence en matière de planification qui laisse croire que les projets d'investissement publics planifiés pourraient contribuer à améliorer l'accès aux soins et services de santé des populations de la région.

Toutefois, les volumes financiers associés à chaque type de dépenses révèlent une extrême domination des lignes budgétaires dédiées aux transferts de fonds (78%). Cette prépondérance laisse peu de ressources pour les ressources allouées aux autres projets. Les constructions qui bénéficient de 14,51% de l'effectif global des projets ne disposent que de 3,48% du financement global disponible. L'acquisition du matériel médical et des consommables médicaux qui enregistraient pourtant 12,71% de l'effectif des projets ne bénéficient plus que 1,11% de financements.

Dans le même sillage, les dépenses d'équipements ne portent plus que sur 2,49% du volume budgétaire alors qu'elles représentaient 8,15% du nombre de projets.

Figure 3 : État comparé du pourcentage du nombre de projets alloués par rubriques potentiellement prioritaires et du pourcentage de volume de financement y afférent
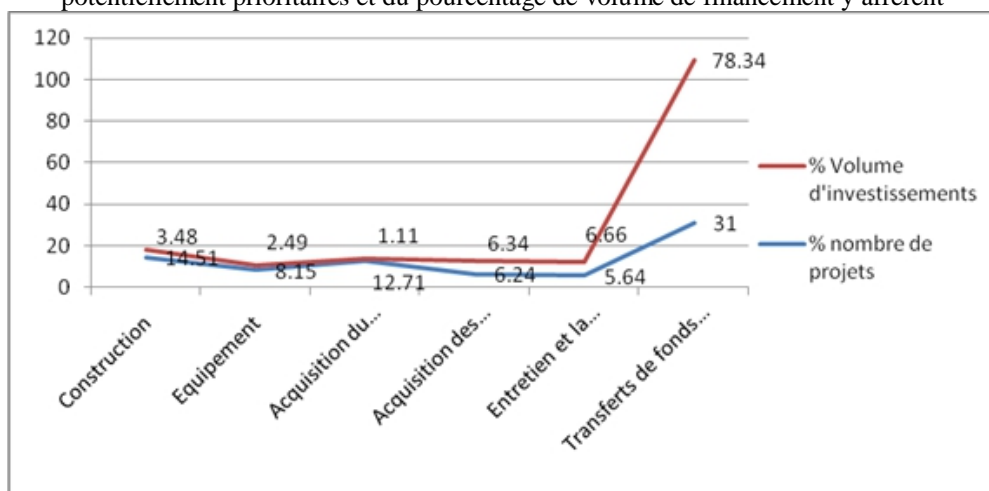
Source : Synthèse des journaux des projets 2013-2017

L'analyse des données financières met en évidence une allocation insuffisante de ressources aux dépenses susceptibles de favoriser l'accès aux soins et service de santé des populations. Si en termes de planification des projets, ces dernières représentent 47,25% de l'effectif global des projets, seulement 20,08% des ressources financières disponibles y sont consacrées. Cela traduit une dichotomie entre la volonté affichée à travers le nombre de projets planifiés et les moyens alloués à leurs réalisations.

Conclusion

L'objectif de cette réflexion était de savoir si la structure des dépenses planifiées sur le budget d'investissements publics de santé est de nature à favoriser positivement l'accès aux soins et services de santé des populations de la région du Centre.

Il ressort des données tirées des journaux de projets de 2013 à 2017 que le budget d'investissements publics en santé s'articule autour de plusieurs types de dépenses. Au niveau Central l'éventail de ces dépenses est plus large tandis qu'il est plus réduit au niveau déconcentré. Durant la période d'étude, 834 projets d'investissements publics ont été correctement inscrits au bénéfice de la région du Centre pour le compte du MINSANTE. Le montant alloué à l'ensemble de ses dépenses d'investissements publics de santé était de 424 973 425 000 francs CFA dont 94,73% (402 582 096 000 francs CFA) géré par des structures relevant du niveau central ou assimilées tandis que seulement 5,26% (22 391 329 000 francs CFA) affecté au niveau déconcentré. On observe par conséquent une très grande disparité au profit du niveau central non seulement, mais également entre les 10 régions du pays. En effet, tandis que le niveau déconcentré de la région du Centre s'en sort avec une allocation réelle de 4,54% du volume d'investissements publics global de santé du pays, celles de l'Adamaoua dispose de 1,06 %, celle du Nord-Ouest 1,13 % et celle du Sud-ouest 1,21 %. D'une manière générale, les investissements publics de santé reste largement en deçà des besoins.

Afin d'inverser favorablement la dynamique d'accès aux soins des populations dans la région, il est impératif de traduire dans les faits les politiques et lois qui consacrent la décentralisation. Cela permettra de réduire la sur-dotation budgétaire du niveau central d'une part et d'autre part de s'assurer que les investissements planifiés cadrent au mieux avec le contexte, les besoins et les aspirations des populations locales. En effet dans le sillage de François (2010). La mise en place effective de la décentralisation devrait permettre de prendre en compte l'approche cognitive dans la planification des investissements publics.Cette approche sous-entend que le détenteur d'enjeux en matière d'attribution budgétaire peut être confronté à un déficit d'informations sur les besoins en termes d'investissements pertinents à mettre en œuvre dans une localité. Pour faire face à la situation, il devrait

normalement s'appuyer sur les services déconcentrés des ministères ou sur les collectivités territoriales décentralisées, qui sont supposés avoir une meilleure information concernant les besoins en investissements publics.

Par ailleurs, le gouvernement devrait investir stratégiquement de manière :

- à accroitre le nombre de formations sanitaires dans la région notamment dans les zones rurales: le but étant d'améliorer le maillage territorial de la région en formations sanitaires d'une part, et d'autre part de réduire la distance que devrait parcourir les patients pour accéder à un centre de santé ;
- à renforcer les plateaux techniques et les équipements des formations sanitaires de manière à améliorer leur capacité opérationnelle et technique afin qu'elles puissent prodiguer des soins et services de santé en quantité et de qualité ;
- à optimiser l'utilisation des ressources humaines afin de combler « vides » observés en milieu rural.

L'Etat devrait par conséquent investir prioritairement dans des constructions d'infrastructures sanitaires, l'entretien et la réhabilitation des infrastructures et des équipements, l'équipement des formations sanitaires et l'élaboration et la mise en place de politique efficace de gestion des ressources humaines

Lorsque l'on s'intéresse à la typologie des projets financés sur le budget d'investissements publics de santé au sein de la région, les effectifs planifiés laissent croire qu'un accent est mis sur des projets pouvant contribuer à améliorer l'offre de soins et services de santé au sein de la région du centre : constructions d'infrastructures sanitaires (14,51%), acquisition du matériel médical et des consommables médicaux (12,71%), équipement des formations sanitaires (8,15%), acquisition des médicaments et intrants (6,24%) et entretien et la réhabilitation des infrastructures et des équipements (5,64%). Toutefois, lorsque l'on considère les volumes financiers associés à la mise en œuvre des projets jugés prioritaires, ceux-ci ne représentent que 20,08% des ressources financières disponibles. Ces derniers restent largement suffisants et ne sauraient inverser significativement la courbe en faveur de l'accès aux soins et services de santé.

Les données traitées dans cet article présentent tout de même une limite. Elles se focalisent principalement sur les projets planifiés sur le budget d'investissements publics. Il serait judicieux d'évaluer le niveau de réalisation des projets planifiés et leur qualité, afin de mesurer leur impact réel sur l'accès aux soins et services de santé dans la région. Malheureusement les données en lien avec leur exécution n'ont pas été accessibles et ne sont pas mesurables avec précision.

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