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Inventory of Infrastructure Resources and Their Impact on Secondary Schools Performance in The City of Maroua (Cameroon)

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ABSTRACT: The aim of this article is to provide an overview of infrastructure resources and their influence on secondary schools in the city of Maroua, Cameroon. The hypothesis is that the availability of functional infrastructure resources adapted to expressed needs influences the performance of secondary schools in the city of Maroua. This study adopts a mixed methodology with a predominantly qualitative approach, interviewing 130 respondents by questionnaire and 21 by interview guide. The results show that, on the one hand, secondary schools in the city of Maroua have seven dimensions of functional infrastructure resources, but two are in short supply. On the other hand, this study reveals that these infrastructural resources affect the performance of the schools studied through their impact on improving student performance or success, discipline, student safety, facilitating the teaching process and improving school enrolment.

KEYWORDS: Infrastructure resources, school performance, secondary education, City of Maroua

1. INTRODUCTION AND PROBLEMATICS

The educational resources that contribute to the success of the student learning process are made up not only of teaching and pedagogical human resources but also infrastructural resources. According to the World Bank (2016), school infrastructure refers to buildings, classrooms, laboratories and equipment and are essential elements for learning in our schools and universities. For this institution, It is established that high-quality infrastructure facilitates better teaching, strengthens learning achievement and reduces dropout. In addition, Teixeira, Amoroso and Gresham (2017), researchers from the same institution, showed in a study carried out in the United Kingdom that environmental and architectural elements of school infrastructure explain 16 percent of the variation in the academic achievement of primary school pupils.

However, as the study by schools for the children of the world (SCW) (2019) points out, infrastructure needs are vast and concern: replacement of buildings in very poor condition, spaces in overcrowded schools, repair/renovation of buildings, improvement of sanitary conditions, improvement of furniture, enlargement of school premises, improvement of ventilation and improvement of natural light...

In the schools of the city of Maroua, in the Extreme Region considered since 2005 as a Priority Education Zone, clear efforts are being made to increase the supply of school infrastructure. The most emblematic project is the reconstruction and equipping of the Lycée Technique Bilingue de Maroua, inaugurated in December 2024 by the Prime Minister Head of Government, as shown in the following image of the exterior facade of the school's administrative block.

Image 1 : Exterior facade of the R+1 administrative block of the Lycée technique bilingue de Maroua

Source : author, 2024

In the same vein, several other establishments have benefited from the infrastructure investment projects presented in Table 1.
These initiatives are fully in line with the government's policy, embodied in its National Development Strategy document, SND30, which translates the country's development vision to 2030. As part of this vision, Cameroon intends to strengthen its education system through a number of strategies, including better distribution of educational infrastructures across the country. In this context, the government intends to replace its current policy of building classrooms with one of building and fully equipping schools with infrastructure resources such as : latrines, water points, laboratories, workshops, playgrounds, school canteens, libraries...
In recent years, the State has worked to implement these strategies by creating new schools, building or renovating classrooms and several other types of infrastructure (libraries, playgrounds, water points, latrines...). All of which has led to significant benefits in terms of educational provision.
However, despite the improvement brought about by this initiative, the MINESEC Report (2020) highlighted the dilapidated state of some schools (lack of drinking water, electricity, latrines and other facilities). This prompts us to consider the state of secondary schools in the city of Maroua, by asking the following question : what is the current state of infrastructure resources in schools in the city of Maroua (Cameroon) ?
Moreover, some empirical studies have highlighted the usefulness of these infrastructural resources on student performance, while others have highlighted their mixed effect.
Among the studies that have highlighted the positive impact of schools, we note the OECD study (2006), which showed that the characteristics and resources of schools explain the variation in students' academic performance. This organization believes that the quality of teaching is conditioned not only by the quality of teachers, but above all by the physical environment in which educational activities take place. In the same vein, after revealing that poor quality teaching is a major cause of school dropout, the Education for All Global Monitoring Report (2011) pointed out that schools must have both the teachers and the equipment needed to improve learning outcomes.
In addition, the OECD (2014) points out that material resources such as infrastructure and adequate teaching resources, while not guaranteeing good school results, do have a positive impact insofar as their lack leads to negative effects on student learning. In the same vein, the UNESCO Institute for Statistics' Quick Guide to Education Indicators for MDG 4 (2018) has set itself the target of promoting an effective learning environment by 2030 that is safe, free from violence and accessible to all. This organization characterizes this target by theu following indicators : Percentage of schools with : electricity, water and sanitation.
In terms of research that has highlighted mixed effects, the first is the PISA survey (2012), which questioned school heads on the possible impact of a shortage or inadequacy of infrastructure such as school premises and grounds, heating, air conditioning and lighting facilities. These respondents gave mixed answers. One group of headteachers felt that the impact was less on teaching, while the other said that the shortage was having a major impact on teaching.
In the same vein, Bocoum (2014) highlighted two opposing effects of school equipment and therefore infrastructure on school effectiveness. The first part of his analysis shows that the school environment has little impact on student success. Based on the study by Mingat (2003), the author states that the characteristics of the classroom have no significant impact on learning, and believes that what happens in the classroom is more important than the physical environment in which learning takes place. The second part of Bocoum's (2014) analysis stresses the positive impact of infrastructural facilities on the quality of learning. He assumes that an equipped room with certain amenities is likely to create an environment conducive to discipline and learning.
According to a World Bank study (2012), the success rate increases by 7 percentage points in a school where these facilities are available, compared with one where they are not. Another World Bank study (2007) carried out in Mali also highlighted the positive impact of a good level of school equipment, estimating that the existence of a library in a school, for example, leads to a gain of more than 4 percentage points on the pass rate at the end of the primary cycle exam.
Furthermore, while it is often established that clThis is one of the reasons for the increase in the dropout rate.ass size has a negative effect on academic success, Nyongolo and Mbecke (2020), using the linear regression technique, have demonstrated the opposite effect, showing a positive link between success and class size. This result is similar to that of the OECD (2010), which states that in the European context, there is no link between pupil numbers and success. Studies by Meuret (2001), Valdenaire (2006), Bressoux and Lima (2010), all point in the same direction, emphasizing that small classes do not always produce the best results. Nevertheless, authors such as Angrist and Lavy (1999) believe that class size affects success. They believe that success is better when class size is smaller.
However, to the best of our knowledge, apart from Minga (2003) and Bocoum (2014), the majority of studies examining the link between infrastructure resources and school performance have been carried out by international organizations (OECD, UNESCO, UIS, World Bank...). Studies on the effects of class size are not included in this finding. Furthermore, to the best of our knowledge, few studies have investigated the state of school infrastructure and its influence on secondary schools, especially in the context of schools in the city of Maroua. Our study aims to fill this gap by seeking to answer the following question : Do infrastructural resources influence the performance of secondary schools in the city of Maroua (Cameroon) ?

2. THEORETICAL AND METHODOLOGICAL GUIDELINES

2.1. Theories used

From a theoretical point of view, we use the systemic approach, the establishment-effect theory and the ecological approach.

The systems approach is used in this article insofar as it considers the functioning of any organization as an interactive and interdependent system. Thus, infrastructure resources, like other educational resources, contribute to the smooth running of educational activities. Consequently, infrastructures (buildings, technological equipment, learning spaces) appear as components interacting with other factors (pedagogy, management, school climate). For example, a well-built, well-lit and well-ventilated classroom directly influences teacher engagement and student concentration (Teixeira et al, 2017). Reciprocally, in a systemic posture, the lack of adequate infrastructure can have perverse effects on student success. For example, a shortage of classrooms can have systemic consequences in terms of a deteriorating school climate and the increase in the dropout rate.

Rudolf H. Moos's social ecological approach (1979) is useful in this study, as this theory emphasizes the relationship between the individual and his or her environment. The environment is understood here, according to the author, as the educational environment which integrates a physical component (encompassing infrastructure architecture, spatial arrangement, location in the neighborhood) as well as the organizational component relating to the number of pupils, pupil-teacher ratio, financial resources as well as the social aggregation component which integrates all the characteristics of the corpus of pupils (Janosz et al., 1998). Lippman (2010) has also emphasized the impact of the physical environment on the pedagogical environment of schools.

The school-effect theory explains that the school itself has specific factors that can influence student achievement. One of these factors is the school's infrastructure.

2.2 Methodology

This article adopts a mixed, predominantly qualitative approach. Data are collected in establishments in three districts of the city of Maroua : Maroua I, Maroua II and Maroua III. Using ½ quota sampling applied to the 25 establishments in these three districts, we surveyed twelve (12) establishments comprising High schools and colleges including five (05) in Maroua I District, three (03) in Maroua II District and four (04) in Maroua III District.

Data collected using the questionnaire and interview guide. The questionnaire was used to collect data from administrative staff in the town's High schools and colleges, with a total of 130 respondents. These included 53 Censors, 54 generals supervisors, 07 heads of school guidance, 08 workshop managers or works (in technical schools), 04 commissaires and 04 Heads of sport department.

As for the interview guide, it is addressed firstly to the 12 heads of establishments (Principals or Directors) studied. Secondly, we interviewed 03 managers (01 Département Delegate, 01 Head of the school map and school guidance department and 01 head of sports department and post and extracurricular activities) at the Departmental delegation of secondary education (DDSE) in Diamare. Finally, the interview was conducted with 06 officials of the Regional Delegation of Secondary Education from the Far-North Region (RDSE-FN). These included : the Regional Delegate, the Deputy Director of General Affairs (SDAG), 02 managers of the School Map Department, the Head of the Material, Infrastructure, Maintenance and Equipment Department and the Head of the Sport and post and extracurricular activities Department. A total of 21 respondents were subjected to the interview guide.

The questionnaire data were analyzed in descriptive statistics using SPSS software, while the interview data were subjected to content analysis.

3. RESULTS AND DISCUSSION

Before presenting the current state of infrastructure resources and their effects in Maroua's schools, let's start by highlighting a few infrastructure investment projects.

3.1 Recent infrastructure investment projects

The following table gives an overview of school infrastructure projects carried out by the Public Investment Budget (BIP) over four years in a number of secondary schools in Diamare.

Table 1 : Infrastructure investment projects carried out over 4 years in Diamaré

N°	Year BIP	Project designations	Beneficiaries	Amount in thousands of FCFA
1	2023	Construction of a block of three (03) classrooms + 02 offices	Technical High School of Doualaré	36750
2		Equipment of the cinematographic arts laboratory	Classical and Modern high school of Maroua	30000
3		Connection to ENEO network	Makabaye High school	20410

4	2022	Construction of a block of three (03) classrooms + 2 offices	Technical High School of Maroua Salak	35000
5	2021	Construction of a block of three (03) classrooms + office	Industrial and Commercial Technical Education college (ICTEC) of Petté	32000
6		Construction of a block of two (02) classrooms	Ouro Tchede High School	22000
7	2020	Construction of a block of three classrooms + office	Guinadji College	32000
8		Completion of a teaching block	Bilingual High School of Maroua	150000
9		Project management for the completion of a teaching block	Bilingual High School of Maroua	13000
10		Construction of a block of six (06) latrines	Dogba High School	4500
11		Construction of a block of six (06) latrines	Guinadji College	4500
12		Construction of a borehole	Gayak High School	8500

Source : Author, based on data from Regional Delegation of Secondary Education from the Far-North Region, 2024

This table highlights a total of twelve (12) school infrastructure investment projects carried out over the last four (04) years. Most of these are classrooms and offices (07 projects out of 12 in this table). Other projects include latrines (02 projects), a borehole and laboratory equipment. However, these infrastructures are only an additional supplement to the stock of infrastructural resources for schools in the city of Maroua.

3.2. Infrastructural resources of secondary schools in the city of Maroua and their effects on performance

In this section, we empirically analyze the data collected on the state of school infrastructures and their usefulness on the performance of schools in the city of Maroua. For each item, we will simultaneously analyze the data from the interview and those from the questionnaire, in order to draw up a cross-synthesis of the results that emerge from these two data sources.

Thus, we assess in turn the data relating to infrastructure resource indicators such as : library functionality, infirmary situation, state of sports fields, existence of water points, existence of fencing and its advantages as well as the consequences of the non-existence of this infrastructure, latrine functionality, the ratio of pupils to benches tables. In addition, we indicate for each of these infrastructural resources, the way in which they influence the performance of secondary schools in the city of Maroua.

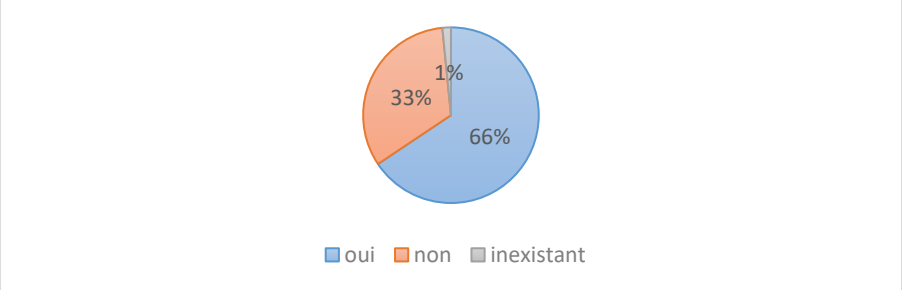
3.2.1. Functionality of libraries and their effects on the performance of secondary schools in the city of Maroua

Libraries are not only a repository for documentation, but above all a reading space for both students and teaching staff. According to the principal of the High School of Domayo, the lack of a reading room prevents the proper use of documents. As a result, books are often kept in the censor's office. Our survey revealed that only three large schools have libraries worthy of the name. These are the Technical Bilingual High School of Maroua, with its high-standard, ultra-modern building, recently inaugurated by the Prime Minister, Head of Government. The other two schools with these resources are the Bilingual High School of Maroua and the Classical and Modern High School of Maroua.

The other schools, although equipped with educational books, have no library infrastructure to speak of. It is in this context that 14 respondents feel that there are no libraries as such, but rather mini libraries, that is to say a small device such as a cupboard containing a few books, often housed in the offices of censors or general supervisors.

The following diagram shows the responses of questionnaire respondents to the question of whether or not functional libraries exist in their establishments.

Figure : Library functionality in establishments



Source : Author, 2024

According to this diagram, it can be noted that 66% respondents mentioned that their establishments have a functional library. This rate represents the respondents working in the three major establishments mentioned above. On the other hand 33% estimated that

they do not have a library worthy of the name. 1% of respondents declare the inexistence of this resource. In addition, concerning the effects of libraries on the performance of establishments, the analysis of the data shows that the interviewees have guided their responses around the three categories. The first category brings together the responses of respondents who believe that libraries improve the performance or performance of students. It is in this context that the principal of the classic and modern high school in Maroua, said that "students who frequent the library provide a good performance unlike those who do not do it". The second category suggests that they facilitate learning while the third stresses that they contribute to helping students who do not have them and to use off-peak hours. Thus, all the interviewees highlighted the usefulness of the functionality of this infrastructure on the performance of the students.

3.2.2. Benefit derived from the existence of the infirmary in favor of the students

The infirmary is a building that offers health services to students and school staff. According to an interviewee met at the Bilingual High School of Maroua, she is useful and necessary for the good health of the students and contributes to providing first aid.

When asked about the effect of nursing on student performance, respondents provided answers that revolve around two (02) points. The first point summarizes the responses of twelve (12) interviewees who apprehend the effect of this infrastructure through the first aid it provides to students. As for the second point, it brings together the ideas of the interviewees (06 occurrences) who believe that nursing helps to ensure discipline because it reduces absenteeism. Thus, its importance is highlighted by all the interviewees, which is why we can deduce that the existence of an infirmary contributes to positively influencing the performance of establishments in the city of Maroua.

It is perhaps this capital importance that justifies its existence in almost all the establishments studied, as evidenced by the responses of the respondents.

Indeed, questioned on the state of this infrastructure, only 6.15% (or 08 respondents) declared the inexistence of this building. This statistic corroborates with our observations during data collection. While the others simply decided on the quality of its functionality, which means its existence. However, the issue of its supply of both staff and equipment remains highly criticized.

That is why, expressing the state of functionality of this infrastructure, seventeen (17) interviewees highlighted four (04) categories of responses. There are those who stated that these infirmaries exist with qualified personnel (with 04 occurrences), those who suggested that they are existing but lacking in qualified personnel (02 respondents), others indicated that there is no infirmary but the presence of a pharmacy (05 respondents) while a final group of respondents (06 occurrences) provided an unsatisfactory assessment of the state of this infrastructure in said establishments. It appears from this analysis that although the existence of infirmaries is a reality in some establishments, they are insufficient in the establishments of the city of Maroua. However, pharmacies play their role in establishments where they do not exist.

The same applies to the questionnaire respondents who provided their assessment of the state of this infrastructure in their establishments, according to the methods in the following table :

Table 2 : State of the infirmary in the schools studied

Modality	Staff	Percentage valid
Good	13	11,2
Quite good	61	52,6
Bad	25	21,6
Very bad	9	7,8
Non-existent	8	6,9
Total	116	100

Source : author

It can be observed that out of 116 respondents to this question, more than the majority (61 people for a percentage of 52.6) judge the state of infirmary to be quite good. In addition, 13 respondents believe that the infirmaries are in good condition in their establishment. However, 25 respondents and 9 others describe it as bad and very bad respectively. Also, 8 respondents state that there is no infirmary in their establishment.

3.2.3 Benefits of sports fields in school performance

Also called playgrounds, sports fields constitute recreational infrastructures and educational spaces given that physical education is a coefficient discipline and therefore practical classes are held there.

Regarding the existence of this infrastructure in the establishments of the city of Maroua, the answers provided by the interviewees are oriented around three categories. The first category summarizes the responses of respondents whose statements converge towards the presence of sports fields for almost all sports disciplines (04 occurrences). The second categorizes the responses of interviewees who suggest that there are some sports fields (09 respondents), while the third category highlighted the inexistence or insufficient (03 respondents) of this infrastructure in their establishment.

The assessment of the respondents by questionnaire on the condition of these sports fields in the establishments gave the results presented in the following table :

Table 3 : State of sports fields in establishments

Modality	Staff	Percentage
Good	21	16,2
Quite good	68	52,3
Bad	39	30,0
Total	128	98,5

Source : Author

The responses from respondents on the situation of sports fields are distributed as follows according to the table above. Thus, observing the said table, we note that 68 respondents (or 52.3%) believe that their condition is quite good. Also, 21 respondents (16.2%) think it is good. However, a good fraction of the respondents (39 individuals corresponding to 30%) consider that the state of their institution's land is poor.

Overall, all the institutions surveyed have sports fields with the exception of Kakataré Maroua High School and Hardé High School which do not have them due to lack of space. In these two establishments, physical and sports education classes are held for the first one in the Mayo which is adjacent to it while the second establishment takes advantage of its neighboring position with the large stadium of Lamido Yaya Dairou to conduct practical physical and sports education sessions. The ten (10) other establishments studied have these playgrounds in their premises. However, not all institutions have all the different types of land corresponding to the disciplines taught. The most present field in almost all these establishments is that of the football stadium. While the fields related to handball, volleyball, basketball... can only be found in large establishments like the classical and modern high school of Maroua, the Bilingual High School of Maroua and the Bilingual Technical High School which has just benefited from a completely renovated sports complex.

With respect to the benefits that the existence of this infrastructure provides on the performance of establishments, the responses provided by the interviewees made it possible to highlight three categories of effects.

Initially, the respondents perceived the effect of these grounds through the fact that they participate in the health and integral development of students (12 occurrences). From this perspective, the head of sport and post and extracurricular activities department stated that "it contributes to child health and the overall development of the child." The coordinating inspector in charge of the guidance and counselor went in the same direction by stating that : "sport helps to make the child feel good, fights against stress and is able to assimilate the lessons well." In the same vein, the regional delegate of secondary education of the said region also defended the idea according to which the practice of sport allows the emergence of talents. It is in this context that he made known that : "the effect lies in fulfillment. The school's main mission is to help the student develop all his/her abilities. Sport is the main discipline that nourishes his name (talents).

Secondly, the respondents perceived this influence by the fact that they allow the practice of sport in establishments (03 respondents). It is in this regard that the Headmaster of the Bilingual High School of Domayo, stressed that in addition to their effect on the development of students, the existence of sports fields allows students to prepare well for their sports competitions. It is in this context that he stated that : "the practice of sport allows students to develop, flourish and also allows them to prepare for the schools games." Furthermore, for the head of sport and the head of sport and post and extracurricular activities department of the DDSE, "the lack of sports infrastructure prevents students from practicing sports in the desired disciplines. It's frustrating, sport is a leisure activity that awakens the mind, facilitates, relieves stress and certain illnesses.

However, a third category of respondents (02 interviewed) reported no effect on performance.

All in all, the existence of sport fields contributes to the smooth running of educational practice in schools. Their existence makes it possible to carry out sports pedagogical activities and thereby contributes to the blossoming of talents in learners as well as their integral development.

3.2.4. Advantages of the existence of water points

Water is an essential resource for human survival. This is also the meaning given to us by a well-known adage of the public : "water is life". As such, it therefore appears as a resource whose existence is necessary for the functioning of educational processes. This is perhaps the reason why all the establishments studied in the city have even a functional water point.

The availability of this resource is highlighted by both interview and questionnaire data. The respondents to the interview, 17 highlighted three types of responses. There were some interviewees who stated that they exist in two sources (CAMWATER Connection and drilling) which are 12 interviewed, others indicated that they exist in sufficient quantity (03 respondents) while a third group of respondents considered that they exist but in insufficient quantity (02 interviewees). As for the questionnaire, of the 130 respondents on the existence or not of this precious liquid in their establishment, 127 responded affirmatively (a rate of 97.7%)

against only three who answered negatively. These three people are the respondents of the Lycée de Doualaré Maroua and they say it because their establishment shares a single water point with another establishment that is neighboring them.

Thus, as pointed out by the head of the infrastructure and maintenance department of DRES-EN, all 12 schools are equipped with this resource. They thus have either a CDE connection (CAMWATER) or the boreholes and sometimes both at once. Some surveyed establishments even have more than 10 water points as shown in the following table.

Table 4 : Quantity of water points in establishments

Number of water points		Staff	Percentage
2		22	17,3
3		7	5,5
5		23	18,11
6		10	7,9
8		21	16,53
10		22	17,3
13		21	16,5
16		1	0,8
Total	**76**	**127**	**100**

Source : Author

It can be observed from this table that in total the surveyed establishments have 76 water points. The largest number is found in the largest establishments such as the Bilingual Technical High School of Maroua (13 water points), the Classical and Modern High School of Maroua (10 water points), the Bilingual High School of Maroua (8 water points), the Kakataré Maroua High School (6 water points).

Moreover, the respondents also highlighted the importance of the existence of points in the schooling of students. Their arguments are oriented around three points. There are those who claimed that its existence allows to ensure discipline, as the Principal of the Classical and Modern High School of Maroua emphasized it by stating that : "the presence of water in schools is paramount, its presence allows to discipline the students." In addition, the Director of the College of Palar also insisted on the positive effect of this resource in reducing the output of students by stating that "the absence of water point leads to the wandering of students. Its existence has reduced the students' rate of wandering."

The second interest highlighted by the respondents is related to the fact that water allows hydration, hygiene and health of students. It is in this sense that the Principal of the Technical High School of Meskine, estimated that this resource "allows to quench the thirst of the students". The aspect of hygiene is mentioned by the deputy director of general affairs of Regional Delegation of the Secondary Education for the Far-North Region (RDSE-FN), stating that "the existence of water makes it possible to make students clean and avoid certain diseases". According to the head of the infrastructure and maintenance department at the Delegation, this resource is vital in establishments, stating that 'water is life, its importance is no longer to be spoken about in relation to the stay, to the atmosphere in the establishments. It allows students to refuel, recharge, and hydrate, it's vital."

As for the respondent who considered that water constitutes an element of courses in certain specialties, he is the Principal of the Technical High School of Meskine. One can illustrate his argument by quoting his statement as follows : "water is life, it gives students more confidence. It allows stability for the students. It is used in certain specialties such as masonry, ESF, school gardens. It allows to maintain and galvanize the child''.

In sum, we note that the importance of water in schooling is recognized by all interviewees. It is a necessary resource, as indicated by many of the respondents who pointed out that "water is life". The vital nature of this resource justifies the effort of the public authorities in making available this resource in all the studied establishments of the city of Maroua.

3.2.5. Importance of closure in the performance of secondary schools in the city of Maroua

Schools, in the interest of their better functioning, need a serene environment. It is in this perspective that the public authorities are struggling to close these establishments. The exchange with the interviewees on the advantages of having a fence in the establishments allowed to identify three categories of advantages. Firstly, a total of eight (8) respondents stated that it allows for student safety. Secondly, a group of eleven (11) respondents indicated that it helps to strengthen discipline and good supervision of students while the third group consisting of two (02) people believes that closure promotes student concentration. From the angle of safety-related advantage and by way of example, the head of the infrastructure and maintenance department stated that : The fence contributes to the safety of children and staff. It avoids unexpected exits and entries. It prevents intruders from entering such as the phenomenon of Boko Haram and the intrusion of animals, securing property and people belonging to the establishment. In the same vein, the principal of the Bilingual High School of Maroua Domayo also emphasized the security aspect by saying that "an establishment without a fence is accessible to any individual who can infiltrate, it allows to secure". Regarding the aspect of

discipline, one can note the statement by the Principal of the Technical High School of Doualaré who suggested that the closing advantage lies in the fact that "the children are controlled, they do not go out as they want, its absence causes the students to flee classes, disappear, leave as they want." In the same vein, the Principal of the Technical High School of Meskine, believes that "when there is closure, discipline is strengthened". Similarly, it has a positive effect on the reduction of delays as evidenced by the statement of the director of College of Palar "the closure reduces the crying delay and unauthorized untimely exits".

Regarding the third part of the interviewees' responses, which highlights that the existence of closure promotes student concentration, note by way of example the response from the head of the sports department and the post and extracurricular activities department of the RDSE-FN, who indicated that « the fence ensures that the children's entrance is filtered, there is no contact with the outside. What encourages the concentration of the students.

In the end, we can remember that the closing advantage in institutions is undeniable in the proper functioning of these. It contributes not only to fostering a climate of discipline and good supervision but also to the safety of all school staff. Anything that contributes to good student concentration.

However, despite its invaluable benefit, not all of the institutions studied have this infrastructure. Of the 12 schools surveyed, only five have a fence : the Bilingual High School of Maroua, the Classical and Modern High School of Maroua, the Bilingual Technical High School of Maroua, the Kakataré Maroua High School and the Hardé Maroua High School. Establishments without this resource may face certain disadvantages according to the respondents. In this regard, one group of 13 respondents considered that the absence of this infrastructure leads to indiscipline or untimely exits by students while the other 08 said that this absence can be a source of insecurity for schools. It is in this context that an official indicated that the absence of a fence leads to an opening to the risks of banditry, aggression as well as the desertion of students. In the same vein, the head of sports and post and extracurricular activities department at RDSE-FN, points out that the lack of infrastructure makes discipline porose and is the cause of the students' disregard for teaching hours.

3.2.6. Functionality of the latrines

Just like water, the existence of latrines in a school is of paramount importance. Indeed, they are places where students and school staff can get comfortable. They are therefore important amenities for the serene practice of school activities.

According to the analysis of collected data as well as our observation on the ground, this infrastructure is the most widespread in the different schools. All these studied establishments have them.

Similarly, the analysis of data on their functionality shows that out of a total of 17 respondents, 12 interviewees stated that they are functional, three (03) respondents indicate that they are functional but insufficient while the third category of respondents suggests that it is functional but poorly maintained (02 occurrences).

It is the same for the questionnaire data, which revealed that 93.85% of respondents estimated that these latrines are existing and functional while 6.15% declared their lack of functionality. These surveys reflect the problem of the quality of the functionality of these latrines but not their existence, as deplored by the head of the sport and post and extracurricular activities department in Departemental Delegation of secondary school of Diamaré estimating that the latrines are present but in insufficient number or often poorly maintained.

All things considered, although their number and maintenance remain to be improved, the latrines are functional and distributed according to the number of boys and girls in the establishments. They have even been built in blocks in recent years. In addition, as mentioned by the Regional Delegate of Secondary Education for the Far North region, the availability of these latrines has increased, especially at the time of the advent of the clean school policy promoted by the Ministry.

Moreover, the statistics on the state of the number of toilets in the establishments of the city of Maroua are presented as follows :

Table 5 : Number of toilets by institution and gender for students and staff in the institutions of the city of Maroua

Schools	Gils toilet	Boys toilet	Mixed toilets for students	Personal toilets women	Men's personal tolet	Mixed toilets for staff
College of Guinadji	0	0	6	0	0	3
College of Ngassa	2	2	0	1	1	0
College of PALAR	3	3	0	3	3	0
Harde Maroua High School	5	3	0	1	1	0
ICTEC of Dogba	0	0	4	0	0	2
ICTEC of Kongola	1	0	1	0	0	0
Bilingual High School of Maroua	12	12	4	1	1	1
Bilingual High School of Maroua Domayo	4	4	0	1	2	0

Classical and Modern High of Maroua	10	7	4	0	0	11
Balaza-Alcali High School	2	2	4	0	0	0
Dogba High School	0	0	20	0	0	2
Gayak High School	0	0	4	0	0	6
Kakatare-Maroua High School	2	4	0	0	0	2
Katoual High School	1	1	0	0	0	1
Maroua Salak High School	2	2	0	0	0	1
Maroua-Kongola High School	3	2	0	0	0	1
Meskine High School	4	2	0	1	1	0
Ouro-Tchede High School	2	2	0	2	2	0
Makabaye High School	3	3	0	0	0	1
Technical Bilingual High School of Maroua	0	0	1	1	1	0
Technical High School of Doualare	2	2	0	2	2	0
LYCEE TECHNIQUE DE MESKINE	2	2	0	1	1	0
Technical High School of Maroua Salak	2	2	0	0	0	1
Maroua-Doualare High School	4	4	0	3	3	0
Total	**66**	**59**	**48**	**17**	**18**	**32**

Source : Regional Delegation of Secondary Education from the Far-North Region, 2023

This table shows that all establishments have at least two (02) types of six (06) toilets. Among the students, the highest number of toilets is recorded on the girls' side with a total of 66 toilets compared to 59 for boys. On the staff side, the number of mixed toilets is higher with 32 in total. One can therefore safely conclude that the latrines are functional in the establishments of the city of Maroua.

3.2.7. Ratio of students/tables benches

The bench tables are a first-place component of an equipped classroom. They allow students to follow the class sitting with complete serenity. According to the headmaster of the Bilingual Technical High School in Maroua, a well-seated student can relieve himself, do his lab work well and is better able to receive the teachings.

However, the inventory of these bench tables in establishments reveals an unequal distribution of this resource. In some establishments, this number is insufficient, especially in large establishments such as the bilingual technical high school of Maroua, the classical and modern high school of Maroua, the high school of Domayo. While in others like the Kakataré Maroua High School and the CES of Harde where the number is sufficient and even in excess at the Kakataré High School, as shown in the following image translating the surplus benches tables not yet used

Image 2 : surplus tables at the Kakataré Maroua High School

Source : Author, 2024

Also, it should be noted that the distribution is often unequal between different classrooms for the same establishment. This is what the headmaster of the Bilingual High School of Maroua indicates by estimating that the student/bench ratio is sufficient, but it's the distribution that is not good.

The following table highlights the statistics of bench tables by establishment and by number of places in the establishments of the city of Maroua.

Table 6 : Number of bench tables per establishment and seating in the establishments of the city of Maroua

Schools	Bench tables of 1 place	Bench tables of 2 places	Benc tables of 3 places	Bench tables of 4 places	Bench tables of 5 paces
GUINADJI College	0	110	0	0	0
NGASSA College	0	86	48	0	0
PALAR College	0	0	0	240	0
Harde Maroua High School	0	160	0	62	0
ICTEC of DOGBA	0	0	93	0	0
ICTEC of KONGOLA	30	245	0	0	0
Bilingual High School of Maroua	0	350	900	0	0
Bilingual High School of Maroua Domayo	0	0	378	378	0
Classical an Modern High School Maroua	20	771	300	85	0
Balaza-Alcali High School	0	0	310	0	0
DOGBA High School	0	245	0	0	0
GAYAK High School	0	140	60	0	0
Kakatare-Maroua High School	0	60	450	11	0
KATOUAL High School	0	150	0	0	0
Maroua Salak High School	0	282	32	0	0
Maroua-Kongola High School	0	510	0	0	0
Meskine High School	0	339	14	4	0
Ouro-Tchede High School	0	212	301	0	0
Makabaye High School	0	20	250	0	0
Technical Bilingual School of Maroua	0	1200	306	0	0
Technical High School of Doualare	0	254	12	0	0
Technical High School of Meskine	0	54	378	24	0
Technical High School of Maroua Salak	0	282	32	0	0
Doualare High School	0	421	127	0	0
Total	**50**	**5891**	**3991**	**804**	**0**

Source : Regional Delegation of Secondary Education from the Far-North Region, report, 2023

According to this table above, the category of tables most present in the establishments of the city of Maroua is that of two-seater bench tables with a total of 5891 for the year 2023-2024. The second category is that of three (03) seat benches, with a total of 3,991 tables. Then come the four (04) seater benches for a total of 804 tables. There are fewer single-seat bench tables in these establishments. Those with five (05) seats and six (06) seats are non-existent.

However, the planned number of places is not always respected. We find the benches of two places that are occupied by three students, those of three (03) places occupied by four (04) students. However, according to our surveys, on average, students share the table benches according to the ratio of one table bench for three students.

However, in general the respondents declared the insufficiency of this resource. Indeed, the score of interviewees who estimated that the student ratio per bench table was insufficient is 10 out of 17 surveyed, a rate of 58.82% against 41.18% satisfaction score. Some respondents justify the insufficiency of this resource by its aspect of perishability as indicated by the Principal of the Bilingual High School of Maroua Domayo stating that « it is a crucial problem. At the start of the school year, we have a bench for three students, but afterwards, there are cases where we find a bench for more than 04 to 05 students.

This problem of insufficiency is explained according to the head of the sport and the post and extracurricular activities department in of the Departemental Delegation of secondary education of Diamare, by the fact that during the construction of new classrooms, it is not accompanied by equipment in table benches. This is what he stated in these terms : "it’s not enough, sometimes the State gives out classrooms but does not give out benches ; there are also broken tables."

4. CONCLUSION

In sum, the analysis of data collected on the seven (07) different indicators of infrastructure resources studied, shows that five (05) of these sub-indicators (Libraries, infirmaries, sports fields, water points and latrines) are existing, functional and in sufficient quantity. Nevertheless, the two (02) others (the fence and the table benches) presented an insufficient score.

Moreover, the influence of these infrastructural resources on the performance of establishments is established by almost all respondents. These highlighted five channels of impact, namely : improvement in student performance or success, discipline, student safety, facilitation of the teaching process, and improvement of the school's workforce. These results are in line with the PISA surveys (2012) which highlighted that, among the criteria for choosing the right school, the pleasant and safe school environment ranks first.

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