
Suitability and Flexibility of use of Public Space for the Children Study Case: First November Square - Batna Province (Algeria)

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Abstract:

The presence of children in public spaces has become a triggering reality to consider, because children use these spaces to play without taking into account their suitability for such activity.

This article tackles children's use of the public square as a play space in Batna Province, Algeria. The study was based on a field investigation through observation on the site, and an interview conducted with children's carers in the square to find out their assessment and opinions on the quality of the space and its use. Moreover; an analytical study of the square plan was also implemented at the spatial and functional level, in order to reveal all the changes in space before and after use by children.

The results of the study confirmed the lack of ease and flexibility of this space for use by children, and the results of the interview emphasizes the achieved findings, because the public space did not take the child as a user of it at all, neither in terms of space, nor planning and equipment, which led to falling into excessive use of it that resulted in lots of problems.

Keywords: *child, play, public space, square, use, quality of space, Batna*

1. INTRODUCTION

The public space is the theatre of urban life in which the daily one for individuals takes place in all its aspects. It is a physical space of varying shape, style and size without a single processor. It comprises streets, squares, parks and corridors of urban wasteland (Korosec.S, 1988). Its components ensure the grouping of individuals and their gathering, transit, movement and crossroad between quarters and building elements (Fleury. A, 2007; Moreau .D, 2015; Paquot .T, 2009 ; Piché. G, 2011). Hence, they ensure the necessarily qualified activities which take little account of space quality (going to school, to work, etc.) and activities with optional use, notably recreational, which entails high quality places (Gehl.J, 1987).

For the child, the public space is the second environment that welcomes him after his home. The diversity of users of this space, its dimensions and the activities that take place there make it an important place of development for the child. It is a place where he discovers other people and acquires further knowledge (Khan. L.I ,1953, Bendicht. W, 2015). It allows him to make choices and decisions (Hartle.I & Jonhonsen.E 1993, Geneviève .C ,2009). The public space offers him an opportunity to acquire motor skills and develop his ability to coordinate, to test his strength and to experience the most complex forms of play with his peers and his environment (Lindstrand.P.2005; Legendre.A,2009). It stimulates his creativity and imagination (Paquot .T. 2015, Elsa. Z. 2016) and plays a key role in their educational and social path (Tsoukala.k .1995).

The child occupies the public space and reallocates it to play, which is the successful way to learn about his environment. The child takes advantage of all forms of spaces to develop his activities and meet his needs (MacDougall.C et al, 2009) without taking into consideration his flexibility and suitability.

The problem of the use of public spaces by children is considerably important worldwide and of a major concern. It has been tackled by many researchers from different fields whose treatment approaches have diversified, among the most important reference studies by Louis Kahn Isadora1940, which highlighted the importance of taking and integrating the child in urban environments of all kinds, in 1954 he presented the sections of movements, which are perspectives of outdoor environments of downtown Philadelphia, where children were already seen in the sketches he had proposed, the purpose of which was to modify and reshape the concept of urban space to include the scale of children (Louis khan1953). later on inside the Dutch city, ('Aldo van Eyck, 1959), built playgrounds on unused urban grounds, it aimed to

stimulate the imagination of children for a more personal appropriation of the space open to interpretation, and strengthen their presence outside, their encounters and their exchanges. In the Western world, numerous studies have dealt with the relationships of children in public spaces, including the latter (Görlitz et al., 1998; Hart.R, 1979; Lynch.K, 1977). Then, we began to approach the subject from other detailed angles, in particular the development of the representation of the daily urban space of the child to understand the possibilities and the behavioral potentials of the child in public places, and give him the right to the city (Ramadier.T & Depeau.S, 2010), thus, the identification study of places frequented and occupied by children in their daily living space, which makes it possible to determine the places visited by children spatially and temporally and to identify the urban practices of children (Enaux. C & Legendre. A, 2010). (Tsoukala.K, 2007) had proposed criteria for the reassessment of urban environments such as the activity and adaptability of urban spaces, ease of movement and the complexity of stimuli. It is based on the way the child moves and acts in urban settings.

After the problem developed for the study of the types of public spaces occupied by the child such as playgrounds, streets, squares, (Amamou.I, 2016) showed after his observation of children, in the situation during play time, and a set of diversified play spaces that the choice and the attachment of children with certain types of spaces are generally due to their organization and their urban, architectural and even social composition in such a way that the manner of s Adapting to it differs from one space to another.

In Arab countries, the issue of children and the public space has been tackled, yet from another and less detailed perspective compared to the one of the Western world, (Abu Ghazze.H. T. M,1998), addressed the transformation of a type of public space by the child, which is the street, into a play space, and how to use all his physical and social characteristics for this activity. The results of the study revealed that even if there are playgrounds near the homes of the children, they have a particular preference for the street as their own space, which belongs to them with all the risks that entails. All its elements, which may seem insignificant to adults, constitute small niches for children where they can gather, anchor points from which they develop games that appeal to the imagination. Official bodies should consider children's point of view and rehabilitate open roads directly to dwellings for safe use as well as consider their quality for easy use. Other recent studies in the Arab world (Gabr. H., 2019), (Elkhouly.A et al 2022) having as place of study Cairo, Egyptian capital; address the child's perception of the public space that surrounds him and in which he evolves, thus identifying their needs and priorities in the urban places they frequent but also the ability to develop this perception. The results affirmed the ability of children to define, identify and describe the environment that surrounds them and that they use on daily basis and to identify the most important problems from which they suffer at their level. Is focused on involving children in workshops aimed at projecting in their imagination their perception of urban space through physical models in the first study, drawings in the second and by talking with them. on the environment and the cities of their dreams, The results of the studies were very surprising but above all very useful. The children were able to come up with conceptions of their environment that perfectly reflected their needs in the urban environment, these were results that the researchers considered to be the demonstration and the concretization of the success of an urban environment in which the children are involved. Child by design while considering him as a peer or partner.

In Algeria, the topic of the child and public space is poorly dealt with, what has been indicated boils down to the absence of the place of the child as a user in public space (Bibimoune.K, 2015) which led him to invade other spaces – the street – and to appropriate this play space. (Benghabrit .N, 2008), declares that it is a form of children's opposition to the

city's policy that was implemented without them or against them, it demonstrated that the child's relationship with the street space is not only playful, but that it acts as a motivating space that contributes significantly to their development. (Abada.R ,2019) spoke of the disappearance of this space today because its occupation by formal and informal businesses as well as the daily clutter, traffic, which has hindered movement, preventing children from playing this which pushed them to cross kilometers, forced by the danger represented by cars, in search of another space to invade and the choice this time is the esplanade . Thus, studies in Algeria began by dealing with children's occupation of types of public spaces, but never addressed the flexibility in the use of these spaces by them.

This is what we will point out in this article and about a very important type of public spaces, which is the public square that registers a strong presence of children.

The public square is an open space made up of all the empty spaces (Choay et al; 1988). From where one can appreciate the superb aspects of the surrounding buildings (PALLADIO) It is the detection of urban life in history where it plays a vital role in public life (Camillo Sitte, 1889). support of the functions of city, exchange, recreation, and encounter in the broad sense (BERTRAND, J Met al; 1984), addressing different age groups to meet the needs of social life (DESABLET, M; 1988), This diversity in the definition and functions of the place has attracted children attention to invade and led us to question the quality of these spaces and their flexibility of use by children.

2. METHOD AND MATERIALS

This article aims to shed the light on the issue of flexibility of use of public space "the square" for the child in Batna province. We opted for a quantitative approach where we used two research tools, notably observation and interview. The purpose of combining these two tools (direct observation and inquiry) is to describe how space is occupied by play, overused, and become inflexible.

Observation targets children's use of the physical environment and the appropriateness of use. Two types of observation were reached:

-Participatory observation: this is the first direct contact with the location. It allowed us to know the physical characteristics of the location besides to users. The said observation also enables us to make a preliminary reading on the children behavior, their interaction with the environment and their way of using the space. These observations were made on June from 4 p.m. to 10 p.m. in First November Square.

-Observation through the videos: it enabled us go deeper in reading various details and actions, to ensure the spontaneity of behaviors and game, to describe the modes of frequentation and use of space.

The recordings were made in summer during the children's school holidays when days are longer. The length of the videos was 30 min to 45 min. We filmed groups of children of different ages and genders while visiting physical features of the space (play equipment or other).

Besides, to observation, we carried out a field survey by interviewing the children's caregivers to better understand their opinions on the space frequented in terms of design, layout and flexibility of use for the children and for them as being as users.

The interview was conducted in First November Square, and lasted from 20 to 25 minutes. The asked questions were very simple and direct.

To implement this study, a sample was chosen who divided into two groups:

G1: A filmed group of 115 children of mixed gender and ages ranging from 2 to 14 years old.

G2: an interviewed group composed of 50 people (women-men who accompanied 126 children aged 2 to 14 years of mixed sex who reside in the different districts of the city of Batna.

The selected sample represents 20% of the maximum number of children who attend the public square, which is estimated at 600 children spread throughout the day.

The statistical analysis of the interviews is done by the software SPSS version 26 (a quantitative descriptive study using the three Likert scale following a univariate analysis to estimate the frequency in number and percentage, and the mean and the standard deviation of each ordinal variable then the representation of the results in histograms and a bivariate analysis: used the correlation test (Pearson) to assess the association between the variables o We encountered difficulties during our field survey. This is due to the health situation (covid'19 pandemic) and due to the ordinal confinement). Public places can be closed or open.

3. PRESENTATION OF THE CASE STUDY:

The study was carried out in Batna province (359,799 inhabitants) chief town of Batna province, located in the eastern part of the country (north-east) between 4° and 7° longitude East and 35° and 36° north latitude, 435 km north of the capital Algiers. First November Square is the chosen study case. (See figure: 1)

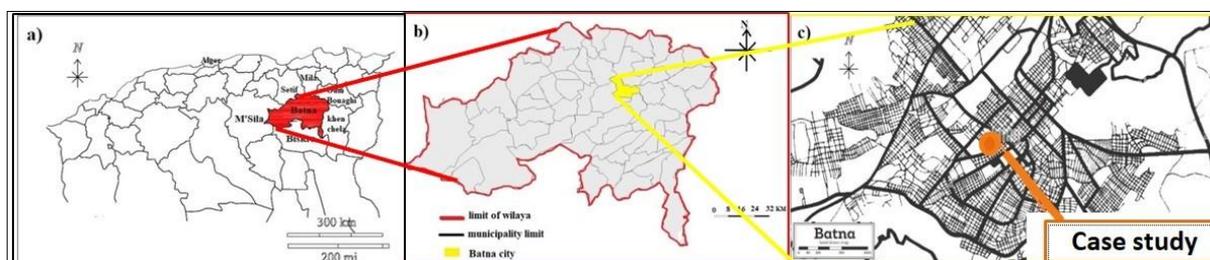


Figure 1: location of the case study:

- a) Geographical location of wilaya of Batna in Algeria
- b) Geographical location of Batna city
- c) Geographical location of study case, Source: a); b); c): <https://d-maps.com> .
Author's exploration)

Location of the Square: located in urban sector No. 02, in the popular quarters of the city exactly in the Al-Nasr quarter at the crossroad of Independence Avenue and Mustapha Kouda Street.

Borders of the square: from North state offices of the administrative quarter and direction of transport. From East: National Office of Examinations and Contests - Batna separated by the Mustapha Kouda Street. From South, the 150 semi-collective housing unit – separated by Independence Avenue (See figure 2)

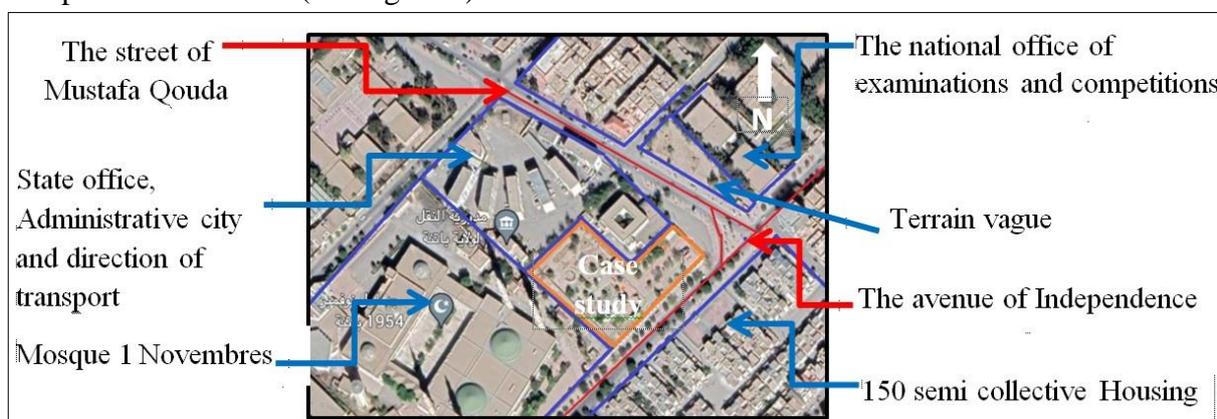


Figure 2: the situation and the limitations of the study case: place 1 November

Selection criteria:

- The density of children's presence.

- The presence of play furniture.
- Strategic location (conducted on very important axes of the province)
- Their spatial and social importance in the province

Context.History

First November Square is the most important relaxation area in Batna, it was originally an airfield during the colonial period, after independence it became vacant land which was used to grow wheat and barley for a while. Afterwards, it became a relaxation area for families and a playground for children (playing ball and running. It was called "DEBBOU" which in French means deposit.

In 1971 the largest mosque in Algeria was launched by Abidi Mohamed El Tahir, named El HADJ LAKHDER, the square was part of the Islamic complex until it was left as an unfinished construction area.

In 1992 It was classified and designated as a Public Square and has undergone many changes (beautification and afforestation), but at the functional level it has never changed (relaxation and leisure), until today (See figure 3)

The area of the square has been estimated at 9680m², but during the recent years, it has been reduced to 6789m² following the addition of a part to the exterior space of the mosque

Function of the square: it is a space intended to stimulate social interaction, to publicize rest and relaxation, recreation and encounter, for all users of different ages and genders.

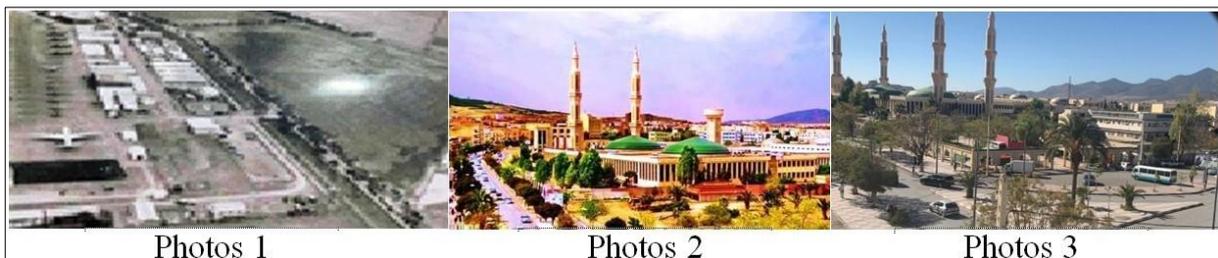


Figure 3: Photos of the historical context of place

Photo 1 before independence

Photo 2 In 1994

Photo 3 In 2022.

Source: 1 and 2 photo archives from. Sassi Mohamed (photography lab in Batna),
3 Author 2022

4 . RESULTS AND DISCUSSIONS

What we have recorded from the analysis of observation data and videos, the spatial analytical study of the square plan, the surveys that we conducted in the field with the children's carers and after having transcribed the interview and performed a statistical analysis, important findings come to light that led us to discuss,

4.1. Insufficiency and disproportion of the surface (compared to the initial state):

The superposition of many activities (on plated) in the same space and on the same surface leads to an overuse of space. This makes the space unsuitable for all these activities. The square was randomly overloaded with games, with a multiplication of facilities for adults (urban furniture), as well as the addition of new buildings to meet the needs of new added functions such as the cafeteria, the kiosk, hence, the space has become incompatible with its initial functionality (See figure 4, table 1 and graph 1)

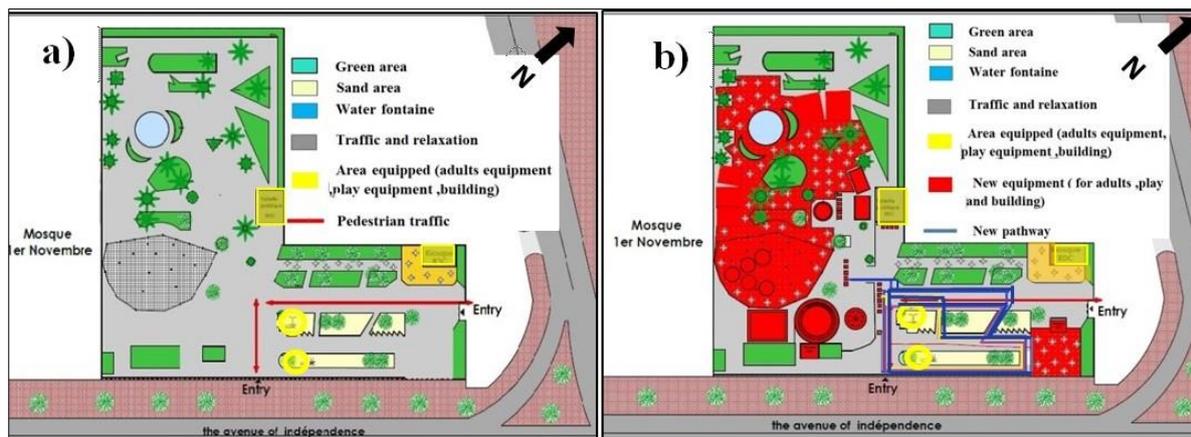
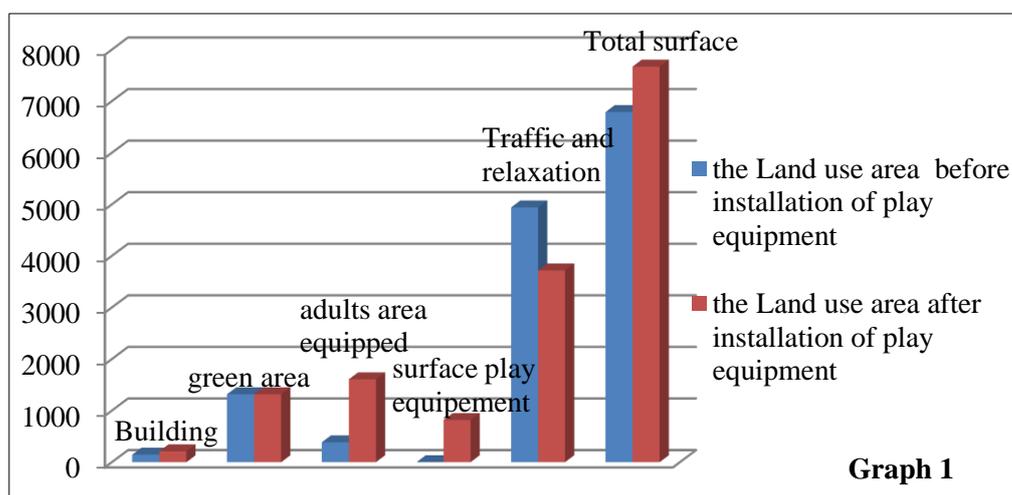


Figure 4: a) Land use before installation of play equipment
b) Land use after installation of play equipment
Source author's exploration 2022

Table 1 and Graph 1: Surface overload after adding games
Source author's exploration 2022

Table 1	Surface Building m ²	Surface. green area m ²	Adults area equipped	surface needed for play equipment	Traffic and relaxation 20%	Total surface
The Land use area before installation of play equipment Percent %	146	1317.50	386.2	/	4940.30	6790
	2.2 %	19.40 %	5.60%		72.70%	
The Land use area before installation of play equipment percent %	211	1317.50	1607.30	817,06	3718,9	7670,8
	3 %	19.40 %	23.6%	12%	54 %	



When we asked the children's carers: "Do you think that the surface of the square is sufficient for the children to play and move freely? » The answers were as follows: 34/50 of those questioned judges it to be categorically insufficient, whether for children's free play, games or mobility, the percentage is 68% of the total, while 14 /50 said it is sufficient from their point of view, which represents 28%. The remaining 2% believe that it is relatively sufficient

Those who answered that the surface is insufficient indicated that this had a correlation with the organization of space and their mobility, which was expressed by the positive correlation test of which 54% between the surface of the place and the organization, we conclude that the more the surface is sufficient, the more the space will be organized (See Figure 5)

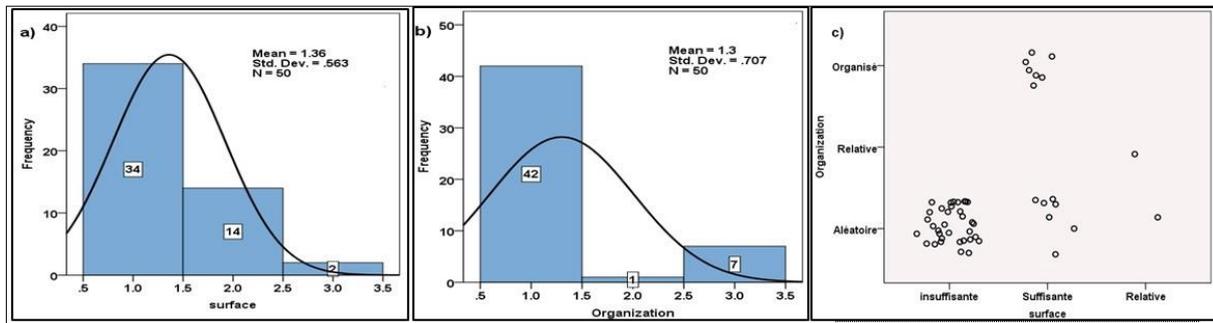


Figure 5: a) surface variable
 b) Organization variable,
 c) Correlation between surface and organization
 Source Author’s exploration 2022

4.2. Overlapping and Disorder (Use Area/Activities):

The random occupation of the surface, the disorder of the arrangements and the unavailability of the surface necessary for each type of activity lead to an overlap, an intersection of surfaces, an interpenetration of the different fields of use of the play area with areas for: relaxation, service, supervision of children, paths for walks, (See figure 6). In addition, the playground circuits and the new arrangements for adults have invaded the circulation and relaxation areas.

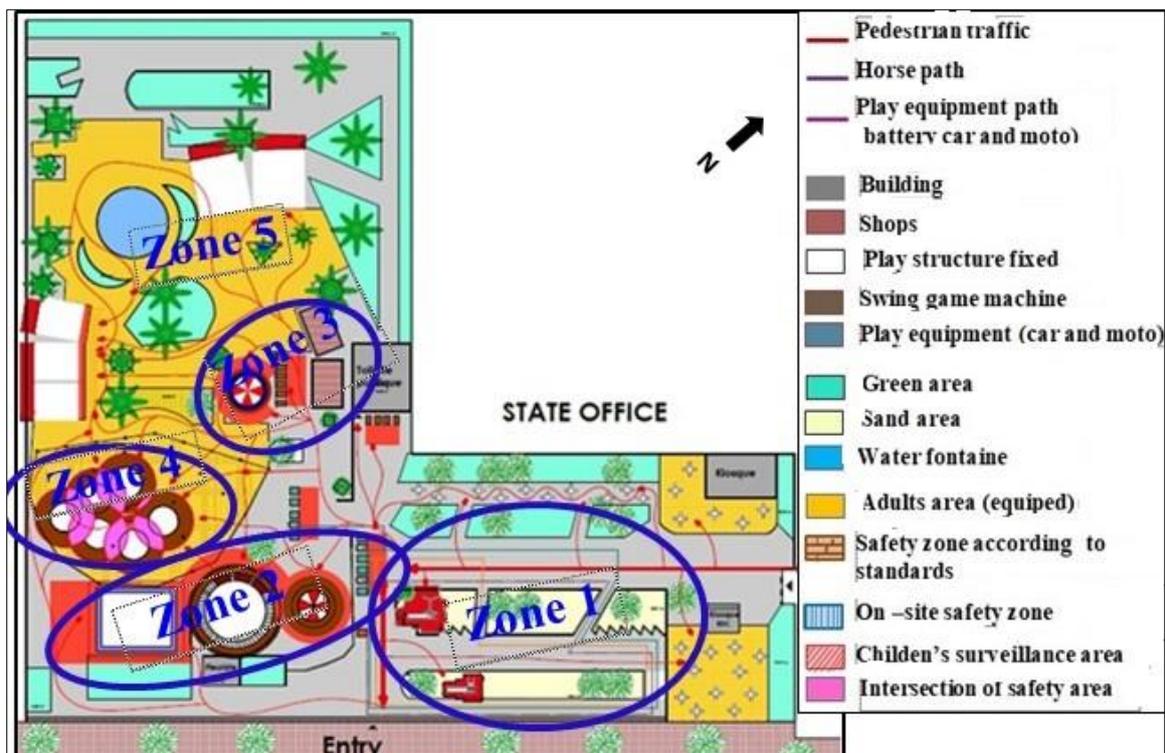


Figure 6: Overlapping areas, activities, pathways
 Source: Author’s exploration 2022

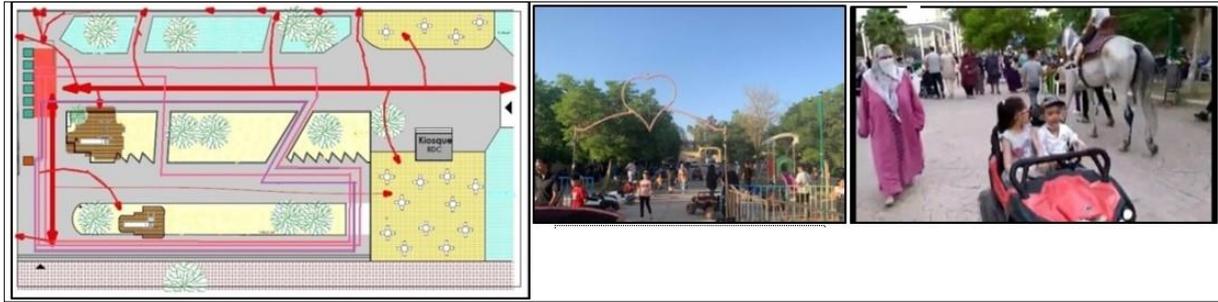


Figure 7: Zone 1 Plan of the overlapping part of the paths
Source: Author's exploration 2022



Figure 8: Zone 2 Plan of the part of overlapping area, activities and traffic
Source: Author's exploration 2022



Figure 9: Zone 3 Plan of the part of overlapping part of the area (safety, surveillance and play) Source: Author's exploration 2022



Figure 10: Zone 4 Plan of the part of overlapping part of the area (safety, surveillance)
Source: Author's exploration 2022



Figure 11: Zone 5 Plan of the overlapping part of the area: relaxation, service and traffic
Source: Author's exploration 2022

The analysis of the interview comes to confirm our findings, the answers of the children's carers to the question "What do you think of the spatial organization of the place?" the results were as follows: 42/50 answered that the positioning and arrangement of games, urban furniture and equipment for the various activities is random, giving a percentage of 84%. While 7/50 answered that, the space is barely organized because there are games with supplies with 14% of respondents. The 2% just replied that it is relative

The majority of those who answered that the exploitation of the place is random indicated that it had a negative effect on security because of the strong relationship and correlation between space organization and security required level. The more organized the place, the more secure it is, which the positive correlation test (50%) (See figure 12)

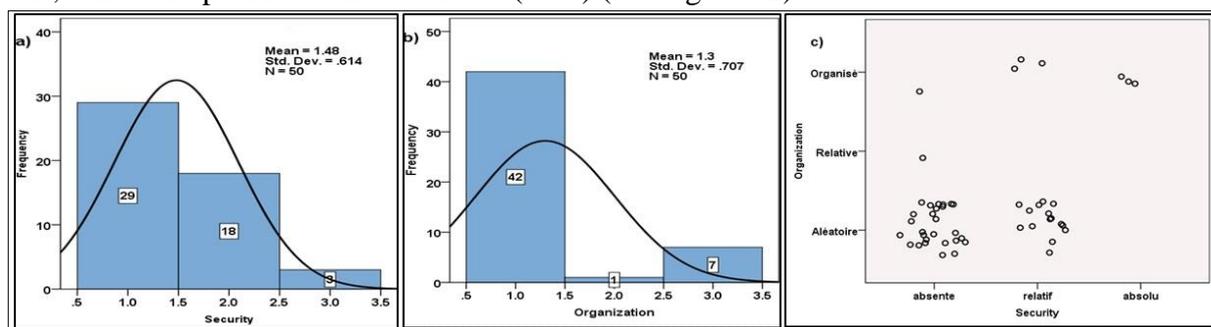


Figure 12: a) Security variable
b) Organization variable
c) Correlation

Source Author's exploration 2022

4.3. Insecurity: Insufficient surface area and the overlaps have led to a problem of insecurity on site, especially in terms of the supervision of children, their autonomy and their mobility while they play, but also in terms of the play equipment

4.3. 1. Play Safety Surface is a surface around each type of play equipment and it is three dimensional (height - length - width) it varies from one type to another, it must be a space free of any elements or arrangement which is not part of the play and does not intersect with paths of access and movement or with any space with a suitable coating. This space ensures the safety of children when they use this play equipment, in addition to the safety of their parents and all space users.

The security space in the square is totally absent and even if it does exist, it is absolutely out of standard in all kinds of equipment, which proves that the occupation of this space was not organized and studied. Those in charge of the site conduct it in a very spontaneous way without worrying about the insufficiency or the absence of the safety surface (See Figure13)

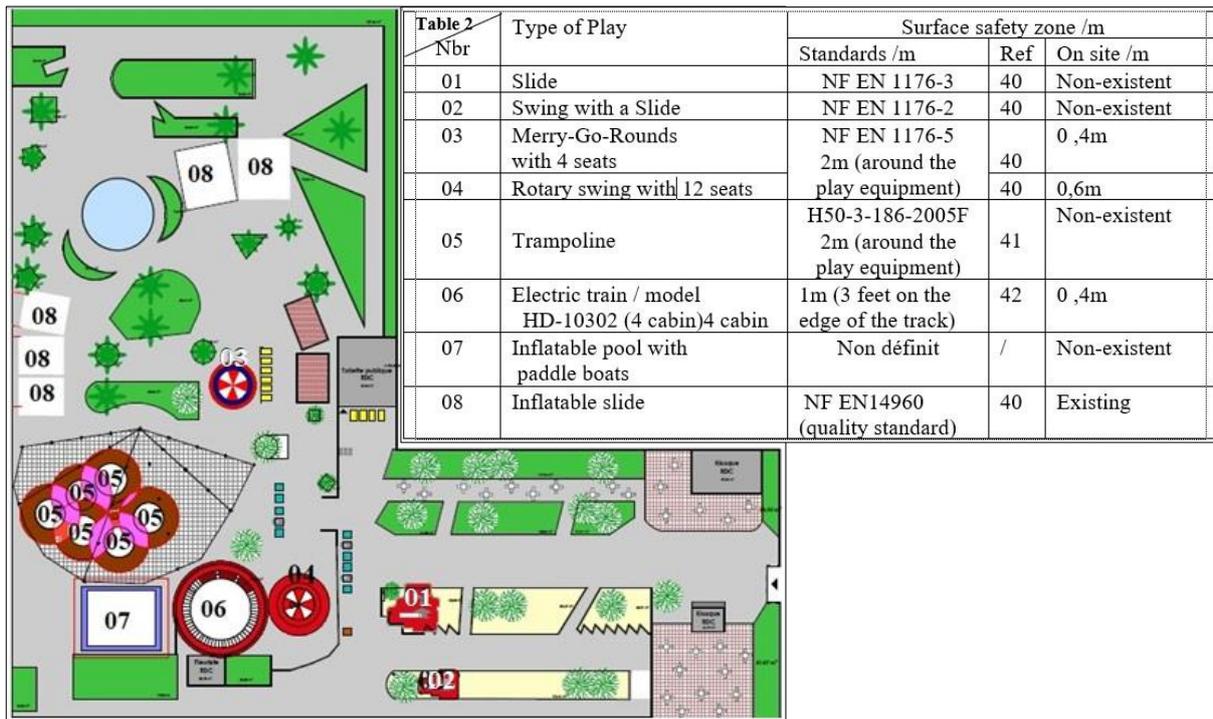


Figure 13: Plan and table 2: represents the safety area (on site and in the standards)
Source: Author’s exploration 2022

4.3.2. Play supplies safety: Crowding is almost present in the majority of games, because the number of games is very limited, where we found a swing and two slides on the entire surface of the place, intended for use by all local children (See table 3) who are of an average age. of 6.33 (6 years) and a standard deviation of 2.854 (6.33 ± 2.854) (this is the age when children prefer this type of game).

Table 3: presents the insufficient number of sets, the overcrowding of the capacity of uses
Source: Author’s exploration 2022

Table 3 Type of game	Dimension M	N br	Capacity to use			Age of user	
			Standard	Ref	On site	Standard	One site
Slides	H2 ,9m/W :1,10 m/L : 3,10m	1	NF EN 1176-3	40	9 and more	3 to 6 years	Non respected
Swing with a slide (a)	H :253m/w :474 m/L :301m	1	EN 1176-2	40	4 and more	3 to 6 years	Non Respected
Merry-Go Rounds (4seats)	φ =5	1	8	40 & 43	12to 14	3to6 years	Non Respected
Rotary swing 12 seats	φ = 6	1	12	40&43	12	6and more	Non Respected
Trampoline	φ = 4.27H=2.6	6	130 kg	41	150k g	3to16years	Non Respected
Electric train	φ = 10	1	14	42	16to 17	3to10years	Respected
Inflatable pool with paddle boats	10*8	1	6 boats	/	8 boats	4 to 10	Respected

Inflatable slide	4*4 H=6 6*5 H=8 8*7 H=8	4	6 kids 8 kids 8 kids	40 & 44	10 10 à 12 10 à 12	4to7years 6to10 years 8to14 years	Non Respected
Roking machinery toys	1,3 * 0 ;8	1 0	1	/	1	2 to 5	Respected
Battery Car (Electric)	1,2 * 1	6	2	/	2	2 to 6 by type exists	Respected

The majority of parents of children reported this lack of games during the interview where 37/50 answered insufficient to 74%. When 10/50 indicate that the number is relative, i.e. 10% and at 03/50 judge that it is sufficient, 6% (Figure 14).

Children's desire to play all the games makes waiting a compulsory yet disturbing station to go from one game to another (in situ observation). The waiting time sometimes reaches 35 minutes. This situation greatly embarrassed the children's carers when asked the question "Do the children wait a lot for their turn to play?" 40/50 answered "Yes" or 80%. This insufficiency in relation to the number of children present has accelerated the process of degradation of different play equipment, where each game accommodates more than its capacity, (to absorb waiting and overcrowding this limitation in number has a negative impact on their flexibility of use and their degree of security

The answers of the children's carers on the flexibility of the games, most of them (26/50) or 52% affirmed that they were inflexible, (12/50) indicated relative with a rate of 26% and the same number relative judge (12/50) because their children never complain about the difficulty in using them. (Figure 14).

We conclude that the more there are, the more games are secure, because the correlation between them is positive and equal to 65 %.(Figure 15)

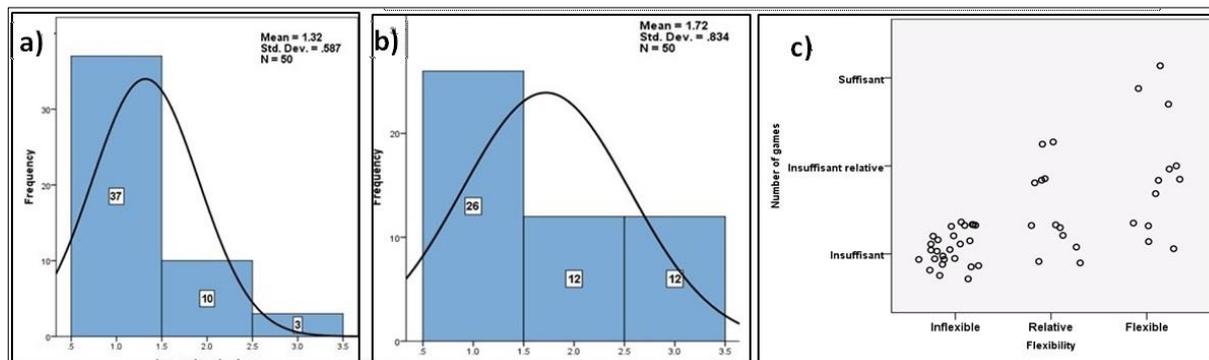


Figure 14: a) the number of play equipment variable,
b) the flexibility of play equipment variable
c) Correlation between the number of play equipment and flexibility.
Source Author's exploration 2022

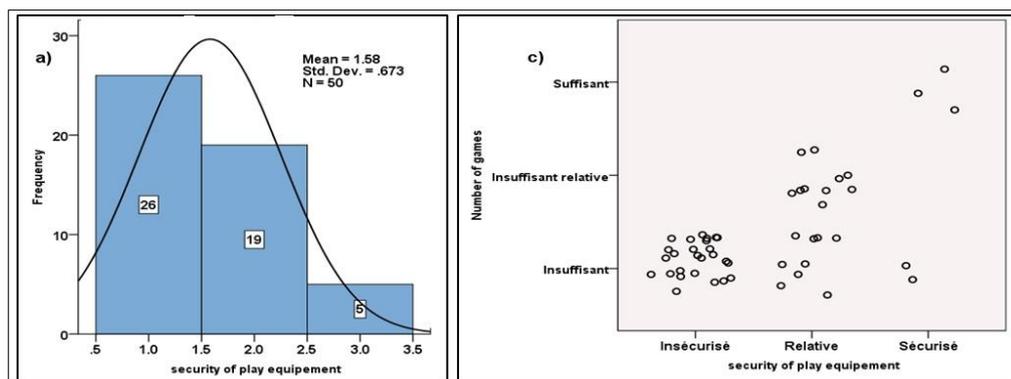


Figure 15: a) Security of play equipment variable
b) Correlation between the number of play equipment / Security of play equipment
Source Author’s exploration 2022

4.4 Autonomy of mobility and Supervision: the insufficiency of the surface, the disorganization in the planning, the overlapping, and the insecurity directly influenced the mobility of the children, they reduced their freedom of movement and their traffic in the place as well as between games and other activities. The children’s carers are also referred to these two points and the answers when they were asked about "the degree of safety in the place" and "The ease of movement and circulation of the children in the space and between the games. It was as follows: (29/50) to 58% answered that the place is not secure, which hindered the movement of children and prevented them from moving freely, which they answered that the mobility is difficult by (35/50) at 70%.

Furthermore (18/50) to 36% they answered that safety in the place is relative, noting that the movement of children is also relative (11/50 to 22%), considering that they are always accompanied by them at inside the square.

The last, (3/50 to 6%) answered that security is absolute there, and (4/50 to 8%) indicate that traffic is easy.

Security and mobility having a positive relationship, a correlation of 67% (lack of autonomy in unsecured spaces) which does not present any flexibility of use and hinders the mobility of children and their companions (Figure 16)

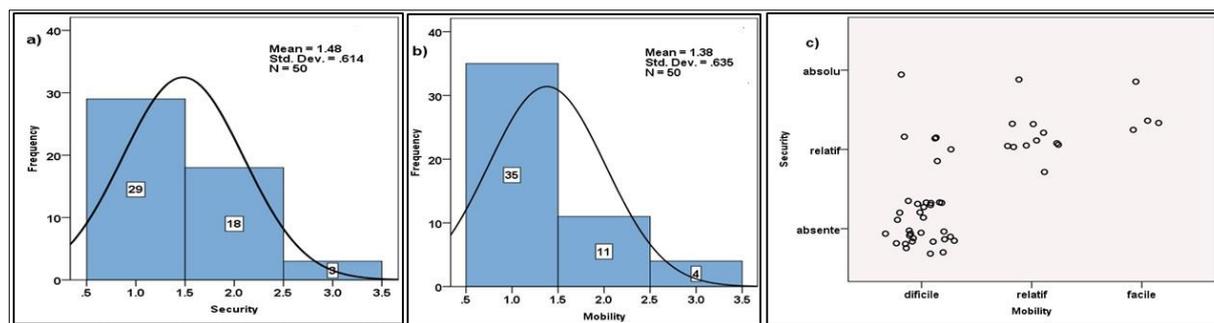


Figure 16: a) Security variable
b) Mobility variable
c) Correlation
Source Author’s exploration 2022

4.5. Ergonomics of play furniture ladder in the square:

Through the videos, it was observed that First November Square never categorized the games according to age, which resulted in overlapping use. The existing games are allowed at any age, while each game, by the standards, is intended for a specific age for its use. This disproportion between the scale of play equipment and size of the child and his age (upper or

lower) strongly affects the flexibility of using games, as well as the degree of pleasure they provide.

Young children share the same games with others older, such as trampolines and slides (see photos.)

The children’s carers confirmed through the interview, (31/50) at 62% said that the absence of this classification and the way in which this disproportion between the age of the child and the play equipment negatively affect their children in terms of enjoyment and use. Therefore, they strongly wanted the games to be separated according to age and plan other games for children between the ages of 12 and 14, other from (12/50) to 24% answered that it exists, but relatively unsatisfactory and (7/50) at 14 % They see that it exists

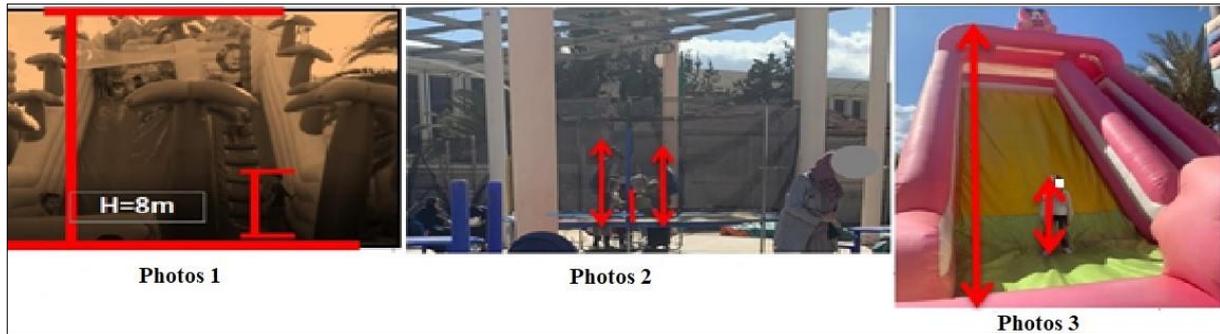


Figure 17: photo 1 and 3 represents the disproportion between the scale of play equipment and the child’s size

Photo 2 represents the disproportion between the size and age of the child

4.6. Quality / Suitability of physical characteristics in place

Besides to what we have discussed previously, there are other factors, which are the qualities of physical characteristics having a large impact on the flexibility of the use of space, namely:

Coatings: they are diverse (marble, striated tiles) but are not suitable and inflexible to be used by all age groups, especially children, as they are the most sensitive due to their excessive movements and runs, especially since the space is not organized. In addition to the risk of falling games embedded in these coatings and the absence of the safety surface. The percentages of responses from the children's carers confirmed their inflexibility and insecurity (See figure 18)

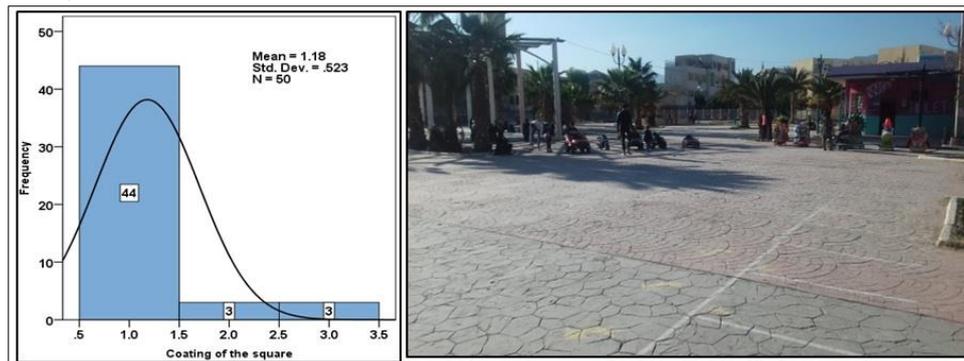


Figure 18: Responses from children's carers on coatings

Urban furniture: The furniture in the square represents a very large size compared to the size of children, it has been placed on the scale of adults only, although the public square as an urban space is dedicated to all installments of age, including children who have never been taken into consideration in terms of furniture

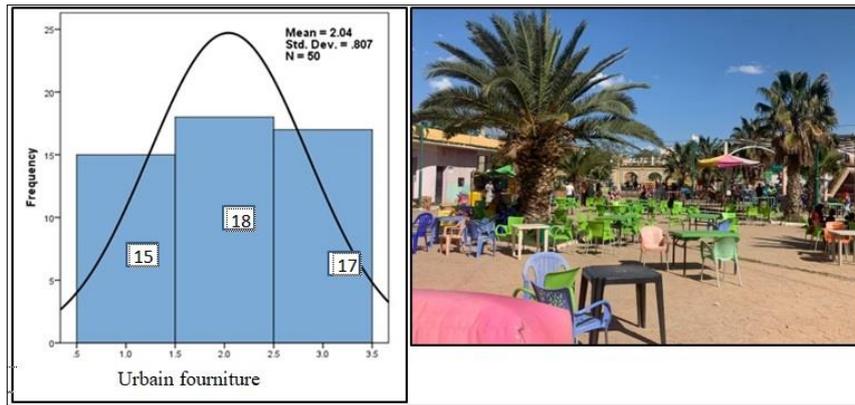


Figure 19: Responses from children's carers on urban furniture

The Vegetation Component: Through the study conducted in the field, the share of green spaces is very low, because it is fixed in the landscaped spaces. The paths are defined as weeds and a few wild plants and scattered trees (palms, ornamental trees and short trees), despite its importance on the health and psychological level of the individual and the insistence of Algerian regulations (laws 06/07 of 13/05/2007) on its presence in all spaces of the city, for space and regulation in all spaces of the city (on the spatial and artistic level it is neglected, abandoned and badly maintained in place.

The children's carers have a different opinion on this factor, some consider it non-existent due to his miserable state, and others say that it is present but insufficient requiring special attention, since it is a very important factor for the visual, auditory comfort and attractiveness, especially for children

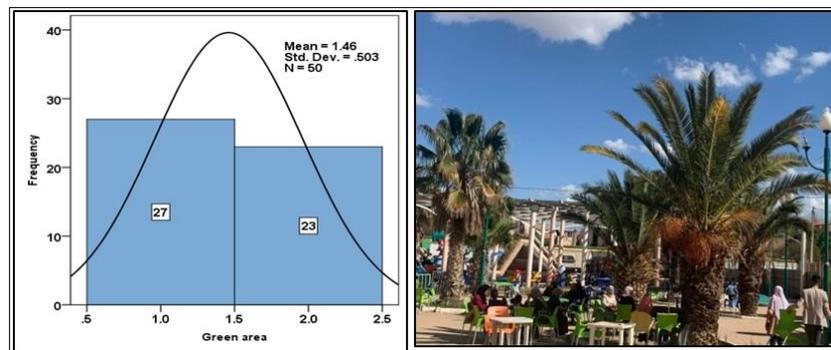


Figure 20: Responses from children's carers on the vegetation component

Water jet and sand areas: despite their importance and effectiveness in increasing interactions with the environment, the water is limited to a neglected fountain which is always dry, the sandy areas around the slide and some trees are messy and dangerous which means that they are considered as non-existent by the children's carers. What is captive is the presence of a horse, which makes the children more interested and motivated



Figure 21: Responses from children's carers on the water jet and sand areas

Cleanliness: despite the diversity of its activities, the difference in its users, and the high attendance, cleanliness is relatively discussed from the point of view of the children's carers and they have linked this to the fact that the cleanliness furniture available does not is not sufficient for the number of its visitors.

Variety of shapes, colors: are considered one of the most important stimulating and attracting factors for children and adults. Considering that the square is an active and lively space in the city, the presence of colors in this space increases its efficiency, activity, profitability and improves the aesthetics of First November square. The coloring is relative, limited to the games, but it is absent in the coatings of the constructions and the furniture, which has made the overall aesthetic view deficient and pale, which has led the majority of children's carers to answer replied that the colors are present, but simple or even bland and not stimulating for children

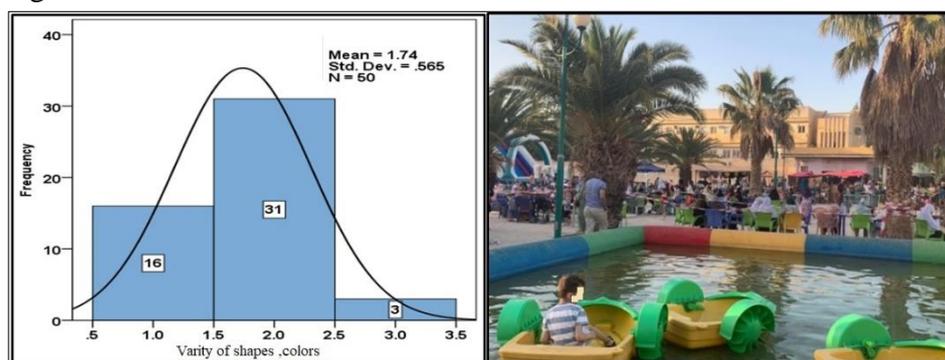


Figure 22: Responses from children's carers on variety of shapes, colors:

5. CONCLUSION

The square does not sufficiently meet the expectations of the people who visit it, it is overused, it certainly offers miscellaneous activities, which can be largely satisfactory, but the arrangement of the furniture and its density are of an intensity caused by children's play, causes a lot of problems in addition to the lack of shared surfaces. The insecurity, lack of independence and mobility, inappropriateness of furniture scale and physical characteristics, which have affected the space in terms of use, and has become inflexible and unsuitable for children and their companions.

Our results are in agreement with previous studies that have shown that the place of the child is marginalized in public space, whether in terms of design or layout. Which allowed him to impose this appropriation that affected the appropriateness of use and made us think about how children behave in this space and the types of use that can appear because of these results. Consequently, the public square is a place in the city with fixed urban limits, that is, we cannot increase its area to adapt it to the new reality, but we can at least redevelop it at all the plans so that it suits the children and their activities so that the spontaneous occupation and utility use for children becomes an organized and harmonized occupation with standards and measures that is appropriate for them

REFERENCES

- 1 Korosec-S, P. (1988). La sociabilité publique et ses territoires - Places et espaces publics urbains. *Architecture et comportement, Behav*,4 (2), 111-132.
- 2 Fleury, A. (2007). Les espaces publics dans les politiques métropolitaines réflexions au croisement de trois expériences : de Paris aux quartiers centraux de Berlin et Istanbul. Thèse de doctorat en géographie, Université de Paris 1 Panthéon-Sorbonne,
- 3 Moreau. D. (2015). Pour un autre partage de l'espace public : la place des enfants et des jeunes, Rue de l'avenir.
- 4 Paquot. T. (2009). L'espace public. La Découverte, Paris.
- 5 Piché. G. (2011). L'appropriation de l'espace public : le cas du canal de Lachine dans l'arrondissement le Sud-Ouest [Thèse]. Université de Montréal Institut d'urbanisme.
- 6 Gehl, J. (1987). *Life between Buildings: Using Public Space*, Island Press.
- 7 Kahn, L. I. (1953). Toward a Plan for Midtown Philadelphia, *Perspecta. The Yale Architectural Journal* ,2, 10–27
- 8 Bendicht. W. (2015). L'enfant : un impensé du travail de conception architecturale ? La trajectoire réflexive de Louis Kahn, *Métropolitiques*.
- 9 Hartle. L, & Jonhanson. E. (1993). Historical and contemporary influences of outdoor play environments. In C. H. State University Of New York Press
- 10 Geneviève.C. (2009). L'utilisation et L'appréciation des lieux extérieurs par des enfants dans un Quartier défavorisé [Thèse]. Université Du Québec A Montréal.
- 11 Lindstrand, P. (2005), *Playground and Outdoor Play – A Literature Review*. Stockholm:
- 12 Legendre, A. (2009). Espaces cités comme lieux de jeux extérieurs par des enfants de six à onze ans : Exemple d'une petite ville de la région parisienne. <https://shs.hal.science/halshs-00438840>
- 13 Paquot. T. (2015) .la ville récréative, enfants joueurs et écoles buissonnières. *Infolio*
- 14 Elsa.Z.(2016). Plaidoyer pour des villes propices au développement des enfants.
- 15 Tsoukala.K. (1995). La ville en tant qu'environnement d'expériences pour l'enfant. In *Arch. & Comport. 1 Arch. & Behav* (Vol. 11, Issue 1).
- 16 MacDougall.C, Schiller.W, & Darbyshire, P. (2009). What are our boundaries and where can we play? perspectives from eight- to ten-year-old Australian metropolitan and rural children. *Early Child Development and Care*, 179(2), 189–204. <https://doi.org/10.1080/03004430802667021>
- 17 Aldo Van Eyck (1959), L'histoire d'une autre pensée, *Forum 7/1959*, Amsterdam
- 18 Gorlitz, D., Harloff, H. J., Mey, G., & Valsiner, J. (1998). children cities and psychological theories : developing relationships
- 19 Hart. R. (1979). *Children's-Experience of Place*.
- 20 Lynch . K. (1977). Growing up in cities: studies of the spatial environment of adolescence in Cracow, Melbourne, Mexico City, Salta, Toluca and Warszawa | WorldCat.org. Lynch k
- 21 Ramadier. T, & Depeau . S. (2010). Approche méthodologique (JRS) et développementale de la représentation de l'espace urbain quotidien de l'enfant. In *Enfants et jeunes dans les espaces du quotidien*. Presses universitaires de Rennes. <https://doi.org/10.4000/BOOKS.PUR.27144>
- 22 Enaud; C, & Legendre.A. (2010). Méthode d'identification des lieux investis par des enfants de six à onze ans dans leur espace de vie urbain quotidien. <https://www.researchgate.net/publication/49135863>
- 23 Tsoukala. K. (2007). *Les Territoires Urbains De L'enfant*. <https://www.editions-harmattan.fr/>

- 24 Amamou.I. (2016). Enfant, espace public et ambiances. Observations au sein des espaces de jeu. <https://hal.archives-ouvertes.fr/hal-01404379>
 - 25 Abu-Ghazze, T.M. (1998). Children's Use of the Street as a Playground in Abu-Nuseir, Jordan. *Environment and Behavior*, 30, 799 - 831.
 - 26 Gabr, H. (2019). Responsive Open Spaces for Children in Residential Communities in Cairo: A Child Participatory Approach. *International Journal of Engineering Research and Technology*, 12(12), 2169–2178.
 - 27 Elkhoully. A, M.Shawket .I, & M. Ahmed. M. (2022). Child Friendly Cities Between Theoretical Conceptualization and Real Perception. The Arab Association of Civilization And Islamic Arts, vol. 7, n° 5.p 136-155
 - 28 Abada, R. E. A. (2019). La ville sous le regard d'un enfant; le cas de le Rue du 19 Juin 1965 Constantine. *Algerian Journal of Engineering Architecture and Urbanism*, 3.
 - 29 Bibimoune.K. (2015). اي حضور لفضاء لعب الطفل في المدن الجزائرية في ضوء تحديات الثقافة الحضرية
 - 30 Benghabrit.N. (2008). حالة الجزائر الطفل، المدرسة والشارع فضاء للعب: . *Insanity / إنسانيات*, 41, 11–34. <https://doi.org/10.4000/insaniyat.2276>
 - 31 Choay Françoise et Merlin Pièrre ; dictionnaire de l'urbanisme et de L'aménagement (1988) ; 3eme édition : mai 2000 ; P.U.F / Paris/ France
 - 32 Bertrand.M.J, & Listowski.H. (1984). Les Places dans la ville. Lectures d'un espace public. (Dunod).
 - 33 DeSablet.M. (1991). Des Espaces Urbains Agréables à Vivre : Places, Rues, Squares Et Jardins (Le Moniteur, Paris). <https://www.abebooks.fr/>
 - 34 Camillo .S. (1889). L'art de bâtir les villes (Seuil). <https://www.decitre.fr/>
 - 35 Max Antoni .R. (n.d.). Place Publique extrait du Vocabulaire français de l'art urbain. Retrieved January 18, 2023, from www.arturbain.fr
 - 36 Monographie of the wilaya of Batna . 2021. D.P.S.B : Directorate of Programming and Budgetary Monitoring of the wilaya
 - 37 Loi n° 07-06 du 25 Rabie Ethani 1428 corresponding to 13May 2007 relating to the management, protection and development of green spaces. official journal of the Algerian republic N 31 .
 - 38 official journal of the Algerian republic N°85 de 24/12/1997
- site web:
- 39 <http://www.Google earth.com>
 - 40 <https://www.economie.gouv.fr/dgccrf/Les-equipements#rotation>
 - 41 https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/hl-vs/alt_formats/pacrb-dgapcr/pdf/iyh-vsv/prod/trampoline-fra.pdf LE Ministre de la Santé canada. Catalogue Heath Canada N°: 0-662-7453 56-6 ISBN: H50- 3/186-2005F-pdf
 - 42 <https://mhtntoy.en.made-in-china.com/product/CByxDoTPCEYO/China-Children-Parks-Cartoon-Electric-Train-Kids-Play-Toys-HD-10302-.html>
 - 43 sales catalogue, Title : FAMILY SWING [/sbf@sbfrides.com](mailto:sbf@sbfrides.com) / Email: sbf@sbfrides.com
 - 44 <http://www.gonflable-import.com/> website: <https://www.c2j-loisirs.com> /E-mail: contact@c2j-loisirs.com