

# IMPACT OF URBAN UPGRADING ON PERCEPTION OF SAFETY IN INFORMAL SETTLEMENTS: CASE STUDY OF BOUAKAL BATNA

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## **Abstract**

The paper explores how modifications of urban space in informal settlements influence the residents' quality of life and perceptions of safety. The case study is "Bouakal", the oldest informal district in Batna, a middle city in Algeria. The aim is to measure the effects of urban upgrading practices in "Bouakal" by exploring two questions: In what ways did the interventions in this informal settlement affect the quality of life of the residents? In which ways do these effects correlate with changes in the perception of safety in this area? 141 interviewees among the residents were selected to collect levels of safety perceived. The paper concludes that urban upgrading had, indeed, improved the quality of life while affecting perception of safety in the settlement.

**Keywords:** informal settlements, safety perception, fear of crime, urban upgrading.

## **1. INTRODUCTION**

Crime and fear of crime has become a major problem faced by a vast majority of countries in the world. Over the past 20 years, there has been an increase in crime rate in many of the world's cities with 100,000 or more inhabitants (Vanderschueren 2000).

In developing countries these are in particular the informal or spontaneous settlements that have often been associated to urban insecurity. The idea that spontaneous settlements like seedbeds in which "delinquents" carry on their activities has been sustained by traditional violence studies (Clinard 1973). An extensive international literature has discussed how underdevelopment and bad physical conditions of urban slums can be related to their crime rates.

To deal with this growing problem, many developing countries started implementing upgrading programs in urban slums. Consequently recent urban studies began to focus on the impact of these improving programs. (A.Khalifa 2011), (Abdul Mohit 2012), (Farouk Hassan 2012), (Samper 2011) But there is a little interest on the effects of these programs on the perception of the safety among the

occupants of slum areas The objective of this paper is to draw attention on this topic. Focusing on the effects of urban upgrading practices in the oldest informal settlement “Bouakal” of a middle Algerian city Batna:

## 2. LITERATURE REVIEW

The growth of research into fear of crime has been significant in recent years (Hale 1996) since it was developed as a research focus in many countries (Evans & Fletcher 2000).The relationship between housing, neighborhood quality and perception of security had been the object of many scientific researches. It was the influential ‘Broken Windows’ thesis (1982) that draw the attention on the negative influence of deteriorating neighborhood conditions The subject of physical and social signs of incivilities and fear of crime has been developed further. Research had consistently demonstrated that deteriorating housing and neighborhood conditions increased concern about neighborhood safety. (Skogan & Maxfield 1981, (Boorah & Carcach 1997); (Roché 2002)

The existence of neighborhood incivilities and other signs of deterioration might lead residents to believe that the level of social control in the area was deteriorating and sparked concern and fear among residents (Skogan 1990, p. 3). Neighborhood residents who perceived their local surroundings to be physically disorderly are more likely to exhibit higher levels of fear (LaGrange, Ferraro, & Supancic 1992).

Planners and urban designers are beginning to consider the capacity of the built environment to reduce both the fear of crime and the potential for offending. (cozens 2002) A Study revealed the contribution of the high quality urban environment in Singapore to its relatively low crime rate and urban safety. (Yuen 2004)

Regarding informal settlements, recently, a researcher explored contemporary urban upgrading practices in Latin America as a fundamental way that interventions in informal settlements can affect the residents’ quality of life and perceptions of security. The study finds that there is an apparent connection between the physical structural changes to the urban form of informal settlements that these interventions create and how residents in these settlement communities are willing to express issues of security (Samper Jota 2011).

Add to this literature, researches focused on social connections between residents, crime rates and perceptions of safety and showed that neighborhoods with strong social networks tend to have lower crime rates than those with weak social ties. (Crutchfield et al. 1982); (Kubrin et Weitzer 2003) (Sun et al. 2004)

Furthermore, a relationship exists between fear, neighborhood satisfaction, and quality of life (Marshall 1991). More recent researches extended the literature by showing an indirect effect operating through the intervening variable of satisfaction with the physical environment of the local, which was in turn related to perceptions of safety.. (Austin, Furr & Spine 2002)

### 3. METHODOLOGY

The objective of the study is to examine the relationship between physical urban environment upgrading and residents' perception of safety in Bouakal .

The paper starts with a longitudinal study of the urban development of the city to explain why and how Bouakal came to be physically segregated and perceived as the most violent district within the city. Data about population profile and resident's perception of security was largely collected through the questionnaire. Firstly, respondents were interviewed about the actual rate of violence within their district. A series of items relating to the frequency of a variety of forms of violence through Bouakal was given to the respondents. They were also asked about the rate of aggression through the district.

Regarding safety perception interviewees were initially asked for their perceptions on the overall state of security in their district. They have been asked then if their district was more or less securing than the other districts. In addition to the perception of the safety, the questionnaire was used to collect information about household incomes, neighborhood relations, and satisfaction with the physical environment and safety in the neighborhood.

On the other hand the interviews focused on the following questions. How was Bouakal in the past? What changes in security happened over time in the area?

The sample was drawn from 141 interviewees which represent 10% of the total number of the dwelling in the study area.

### 4. SITE STUDY

This section aims to provide background information on Bouakal. It explains briefly its origins and evolution, and summarizes its characteristics.

Bouakal is a residential neighborhood it spreads on 30ha. Most of the dwellings are individual constructions of one to two-story, with access to electricity, safe water and cooking gas. Walls are in bricks and the structure is made of reinforced concrete. Because of these physical features, Bouakal

can be considered illegal or informal settlement but not a slum, especially as, the majority of the area was developed in contradiction to planning regulations.

It is one of the oldest districts of Batna. Compared to the other spontaneous district in Batna , it is the most privileged because of its situation near the down town

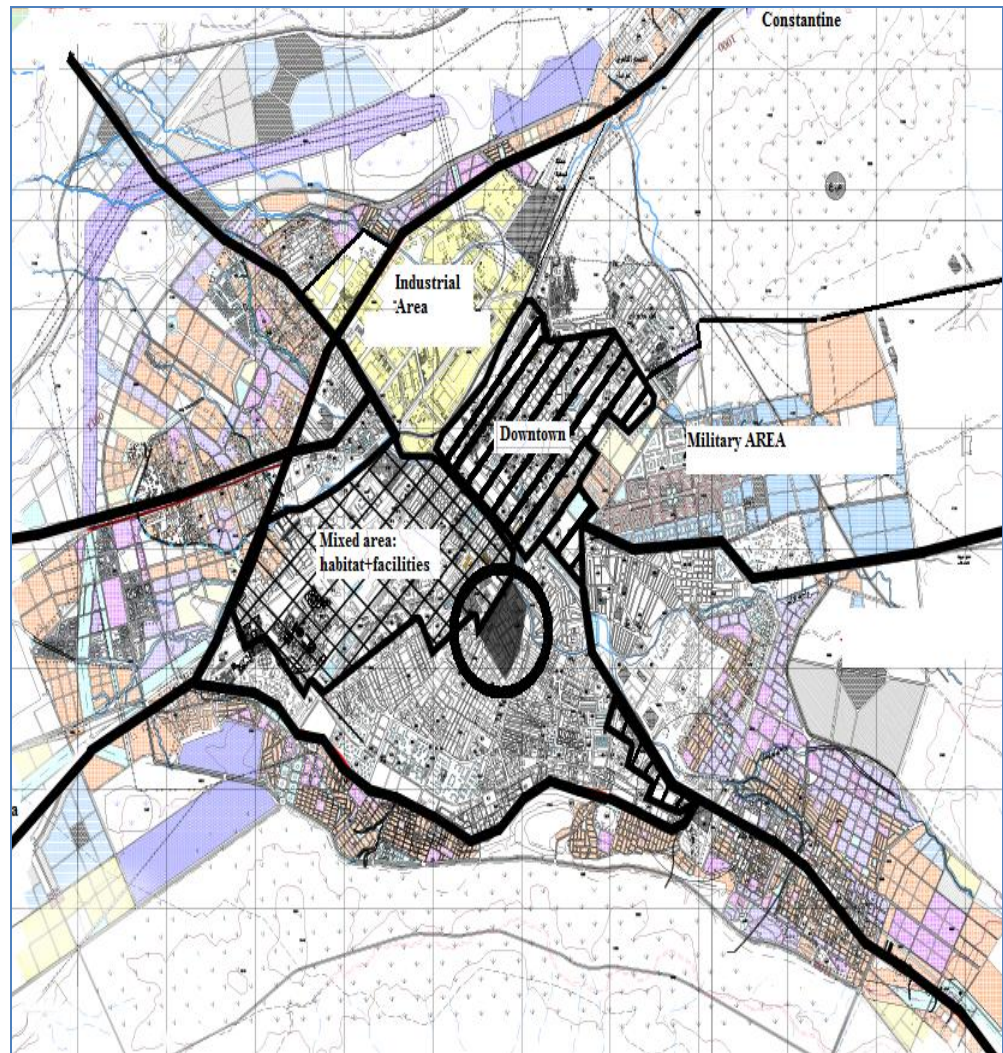


FIGURE.1 - LOCATION OF BOUAKAL

**4.1 Bouakal: origins and evolution:**

Unplanned areas in Batna, have appeared before the independence of the country. They had emerged during the colonial period in margin of the planned colonial city and served as shelter to the underprivileged autochthonous populations. The City was organized in two distinct areas separated by a natural physical barrier “the wadi” Zmala, the first Arabian core was created in 1923, Bouakal-evolving on the adjacent lands of Zmala in 1940, followed its anarchical extension (fig.2)

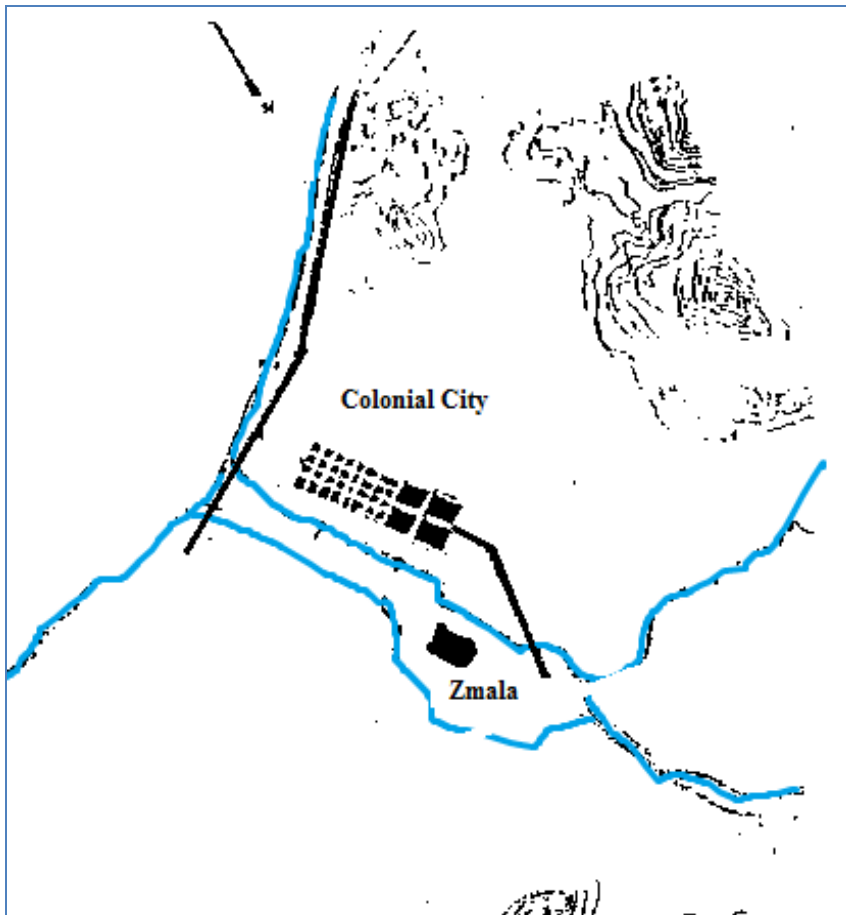


FIGURE 2 - BATNA IN 1923 : TWO DISTINCT AREAS

Two reasons account for the growth of informal settlements in the Batna after the independence of the country. Firstly, the rapid urbanization, over the past five decades. In 1977, the city had a population of 108,700 and it grew to 184,069 in 1987 and further to 247,520 in 1998 and 309,142 in 2012. Commensurate with the increase of population of the city, informal settlements have also grown very fast. Secondly, a regular influx of rural migrants into the city contributed to the densification of these areas. Most of the migrants were attracted by Bouakal, the central and ancient informal district where they rented and shared flats or rooms at a low price.

The weak slope of the lands on the South encouraged the spectacular extension of Bouakal. People turned agricultural land into barren land, and then sold the sites to others as construction land. (fig.3). The government did not follow up with infrastructural services, this reinforced the process of social, spatial and physical segregation of Bouakal from the rest of the city.





FIGURE 3 - BOUAKAL: ORIGINS AND EVOLUTION

#### 4.2 HOW WAS Bouakal PERCEIVED in the past

Zmala, the first informal district in Batna, because of its location and socioeconomic structure was an ideal community for marginalized categories and specially prostitutes and their clients. The emergence of Bouakal, near Zmala allowed the propagation of these social vices through the district . Drug dealers, prostitutes, and their clients moved to Bouakal and used the area as shelter to their doubtful activities

For many years, Bouakal was perceived as doubtful and too dangerous, a place to buy drugs and solicit prostitutes. The bad reputation of the district rebounds on its occupants, affected them negatively and thus discouraged the accessibility of the strangers during numerous years.

Several interviewees commented on the negative image of marginals, crime and violence that has been associated in the past with the area. A few said that they knew of residents who wanted to move out of

Bouakal not because of any concerns about personal safety, but because they were uncomfortable about the negative image of the place.

As many other informal districts, Bouakal was isolated from the center and more importantly to the main institutions of the state. This isolation provides environment that favor informal activities and deviant behavior and emergence of violence.

For decades, the state police considered this area as dangerous. Violence in Bouakal was higher than in the rest of the city (Aichour 1992) During the 1990, because of the terrorism that affected the country, Bouakal turned into a fief for the terrorists and a shelter for the outlaw.

#### **4.3 Upgrading programs in BOUAKAL**

The Algerian government started implementing upgrading programs in urban slums from mid-1980s. These programs were active in most of the Algerian cities, including Batna. Originally, the programs of upgrading of physical infrastructure included development of footpaths, drains, sanitation and street lighting, which led to improvement of slum environment and health conditions of poor and their quality of life.

Several actions have been conducted, for the upgrading of Bouakal .The residential neighbourhood experienced several initiatives for improving the living conditions of its dwellers. Most noticeable of these initiatives is the "P.U.D 1985" program, which the goal was to provide the neighbourhood with the basic urban services including clean water, improved sanitation, electricity, paved roads

The urban facilities implanted on the West fringe of the district, contributed to stop its anarchical extension on this direction. Fig.4 shows the location of these facilities they include: two high schools, a maternity, a stadium and the faculty of social sciences

This set of administrative equipments implanted all along the west urban artery, formed the urban façade. of Bouakal The limits of the infrastructure of these projects became the (borders) with the city

In the other hand many services were initiated for the improvement of the neighbourhood. It was decided to occupy the free lands inside the district by the construction of several public buildings: A retirement house, a library, two elementary schools and a town hall. The resulting changes provide a better picture of Bouakal status .

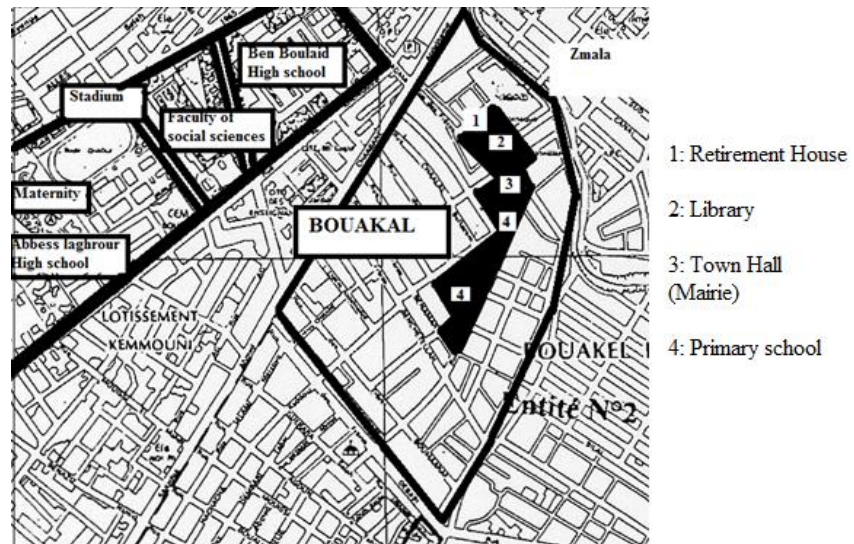


FIGURE 4 - FACILITIES: LOCATION AND TYPE

Neighborhood upgrading programs executed by the municipality of Batna in 1985 aimed to integrated the spontaneous districts into the formal fabric of the city through two actions :

- I. Completion of basic urban infrastructure like water, sewer, electricity and waste disposal;
- II. Physical urban reconfiguration of the district through new street grids ordering

To achieve this goal, an existing street “rue DEBABI” was selected to be the spine of the district accessible to both pedestrian and vehicle transportation. “Debabi” axis, thanks to its regular tracing, clarity and width, acquired a public character and turned into a greatly frequented axis. The emergence of commercial activities on the lower floors of the dwellings has created a real urban dynamics along this axis.

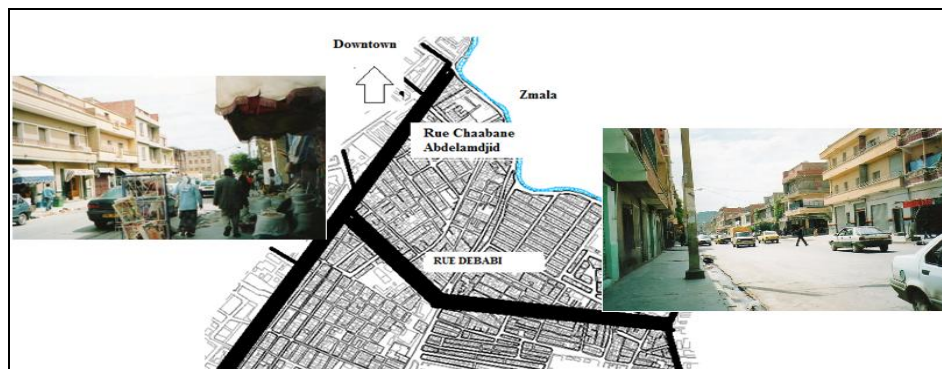


FIGURE 5 - PHYSICAL URBAN RECONFIGURATION

Another main street at the border was used to connect the interior of the district to a network of streets on the outside in the city. The west border of Bouakal has been clearly defined by a major artery that links it with the downtown. Rue Chaabane Ablemadjid became the preferable armature along which



other main public buildings have been situated. This dynamic artery became a mixed use residential and commercial street.

All other streets were paved, houses located in the path of new roads were removed and their inhabitants relocated in new housing projects. New lighting has been added to improve visibility and to extend the use of the walks into the evening.

#### **4.3.1. Commercial dynamism**

After these interventions a very strong commercial dynamism emerged in particular along an interior street: The Rue H. This street turned into a commercial street (trade route) specialized in women and children clothing, shoes, cloths, furnishing, kitchen utensils....., The number of boutiques in H is about 194 boutiques. This commercial dynamism broke down the barriers that have long divided Bouakal from the rest of the city, ultimately enabling people who have never before entered it to drive through the settlement, in order make use of its commerce. (Saidi 1999).

The attractiveness of la rue "H" not only permitted the influx of people from outside of the district but also from the surrounding cities. It is clear from the interviewees' accounts the important role that commercial attractiveness plays in improving the everyday life of communities. The increases in mobility of community members and foreigners are constantly mentioned in interviews as a sign that conditions today are much better than they were before.



PHOTO 1 - THE ATTRACTIVENESS OF LA RUE "H"

## **5. RESEARCH RESULTS**

### **5.1: Impact of Infrastructure improvements on residents' economic situation**

To what extent these infrastructure improvements have increased economical gains and reduced the poverty levels in this community? In order to answer this question we used two sources of information:

Household incomes and the process of improving housing units To get the approximate household incomes, three indicators were used: Occupation of the head of household, quality of the house (number of stores...) and sources of wealth: (possession of cars, trades,...). Results allowed us to regroup households in three categories: low, middle and high incomes. Table 1, shows that 66% of household had a middle income, against 28,4% who had a low income . Thus the residents of the study area represent middle class socio-economic levels in Batna

TABLE 1 - HOUSEHOLD INCOME

	LOW INCOME	MIDDLE INCOME	HIGH INCOME	TOTAL
Number	40	93	08	141
Valid percent	28,4%	66%	5,6%	100%

Bouakal was a lower income neighborhood especially with large concentrations of informal housing. Results of the survey showed the improvement of economic situation of its residents. This can be explained by the commercial dynamism within the district. Renting the business premises constituted an important additional source of incomes for most of the residents.

The rents costs of business premises in Bouakal are nearly equivalent to those of the downtown. The quality of housing revealed also the improvement of the economic situation of the inhabitants; Observations show that many residents improved their units. More floors were added to existing structures and most dwellings underwent renovations.

This drove to the total disappearance of the traditional typology of housing Houses in tile have been replaced by building apartment of one or two story. The number of floors, the quality of the construction materials, the finish, all these factors confirmed the hypothesis of the improvement of the economic situation of the occupants.



PHOTO 2 - TRADITIONAL TYPOLOGY OF HOUSING



PHOTO 3 - HOUSING IMPROVEMENT

### **5.2. What changes in Security happened over time in the area?**

Results of informal interviews with older residents showed that Bouakal was perceived as doubtful and too dangerous for many years, in order to examine if changes in security happened over time in the area, a questionnaire was conducted. Respondents were interviewed about:

1. the actual rate of crime within their district
2. their perceptions on the overall state of security in their district
3. the real rate of aggression through the district.

#### **5.2.1. The actual Rate of crime within the district:**

Respondents were firstly asked to rate crime in their area as “a very big problem”, “a moderate problem or “not a problem”. Results of the investigation revealed that Crime is not seen as a significant problem in Bouakal. Interviewers said that there is little serious crime in their area. The main crime problem mentioned was shoplifting in the rue H

Results about the rate of crime in the districts confirmed this opinion:

The rate of conflicts proved to be moderate, only 20,6% of interviewees in Bouakal think that conflicts are frequent in their district. 85,8 % in Bouakal, said that there is no use of weapons in their district.

Rate of larcenies and burglaries was lower than predicted, 82,3% of the interviewers said that rate of larcenies is low in the neighborhood. Interviews with older residents revealed that Drugs prostitution and violence were all found to be less of a problem than years earlier Criminal activity has been clearly discouraged

TABLE 4 - RATE OF CRIME IN BOUAKAL

	Number	Valid percent	Cumulative Percent
<b>Is crime in your area?</b>			
a very big problem	6	4,3%	4,3%
a moderate problem	37	26,2%	30,5%
not a problem.	98	69,5%	100%
<b>Frequency of conflicts</b>			
Often	29	20,6%	20,6%
Seldom	62	44,0%	64,6%
Never	50	35,4%	100%
<b>Frequency of use of weapons</b>			
Often	09	06,4%	06,4%
Seldom	11	07,8%	14,2%
Never	121	85,8%	100%
<b>Rate of burglaries or robberies</b>			
High	18	12,8%	12,8%
Average	20	14,2%	27,0%
low	103	73,0%	100%
<b>Rate of larceny thefts</b>			
High	10	7,1%	7,1%
Average	15	10,6%	17,7%
Low	116	82,3%	100%
<b>Drug abuse</b>			
High	15	10,6%	10,6%
Average	36	25,5%	36,2%
Low	90	63,8%	100%
<b>Existence of places of prostitution in the district</b>			
No	136	96,4%	96,4%
Yes	05	3,6%	100%

### 5.2.2. Levels of safety perceived

To measure perception of safety in one's neighborhood. Respondents were asked to reply to the following statements: (1) "people who live in this neighborhood have to worry about someone breaking into their home to steal things"; (2) "people in this neighborhood can walk around without fear of being attacked or bothered.

These items had been used in past research (Baba & Austin, 1989), Interviewers were then asked to compare safety within their district to other districts in the city.

Results of the survey showed that almost all the interviewers considered their community to be a safe place to live. Most of those surveyed felt secure, 92,2% said that people in Bouakal can walk around without fear of being attacked or bothered. Only 11,3% said that people who live in Bouakal have to worry about someone breaking into their home to steal things While 78% perceived Bouakal to be safer than most other districts.



Nevertheless, the perception of the insecurity within the Bouakal district, is felt more among the owners of the stores. Many owners, affirmed us during our interviews, the recourse to a guard during the night in the garages to prevent burglarize.

TABLE 5 - PERCEPTION OF SAFETY

	Number	Valid percent	Cumulative percent
People who live in this neighborhood have to worry about someone breaking into their home to steal things			
Yes	16	11,3%	11,3%
No	125	88,7%	100%
people in this neighborhood can walk around without fear of being attacked or bothered			
Yes	130	92,2%	92,2%
No	11	7,8%	100%
Is Bouakal safer than other districts			
Yes	110	78%	78%
No	31	22%	100%

### 5.2.3. The real rate of aggression in the district:

In addition to the levels of safety perceived interviewers were asked about the real rate of aggression in the district. Rate of aggression was measured from responses to two items: (1) "have you or anyone you know in this neighborhood ever had their home broken into and/or had something stolen?" and (2) "have you or anyone you know ever been attacked, mugged, or robbed while out walking in the neighborhood?"

Finding of the survey revealed that the rate of those that has been attacked personally in the -district is relatively weak. 2,1% only of the interviewers underwent an aggression in their district.

TABLE 6 - RATE OF AGGRESSION

	Number	Valid percent	Cumulative percent
"have you or any one you know in this neighborhood ever had their home broken into and/or had something stolen?"			
Yes	04	2,8%	2,8%
No	137	97,2%	100%
"have you or anyone you know ever been attacked, mugged, or robbed while out walking in the neighborhood?"			
Yes	03	2,1%	2,1%
No	138	97,9%	100%

### 5.2. Social Connections and "neighborliness"

According to the literature review, neighborhoods with strong social networks tend to have lower crime rates than those with weak social ties

To test this hypothesis, we tried to examine the existence of social connections between residents and “neighborliness” in Bouakal. In the questionnaire survey, the extensiveness of social networks was studied by investigating how well residents knew others in the neighborhood. Table. 2 shows that the respondents have more extensive networks of interactions as many of them said that they know almost all their neighbors

TABLE 2 - SOCIAL INTERACTION

Social interaction	Number	Valid Percent	Cumulative percent
<b>Number of persons known in your district</b>			
almost all	83	58,9%	58,9%
half	25	17,7%	76,6%
very few	33	23,4%	100%
<b>Frequency of visits to people living in your neighborhood</b>			
Often	35	24,8%	24,8%
Sometimes	65	46,1%	70,9%
Seldom	25	17,7%	88,6%
Never	16	11,4%	100%
<b>Nature of exchanges and services</b>			
Loan of domestic objects	15	10,6%	10,6%
Taking care of children	25	17,7%	28,3%
Financial help	10	07,1%	35,4%
Ceremonies ,Death and illness	85	60,3%	95,7%
None	06	4,3%	100%

In order to investigate the intensity of social interaction, two indicators were designed in the questionnaire survey:

- frequency of visits between neighbors
- nature of the exchanges and services between neighbors

Respondents were asked how often do they exchange visits with their neighbors .According to the statistics, 70,9% said that they often or sometimes visit their neighbors. 17,7 % said that they seldom visit their neighbors. Only 11,4% of the respondents said they never visit their neighbors

60,3% of the respondents said that : death, marriage ceremonies or eventually illness are the opportunities for exchanges with their neighbors. For 35,4 % of the respondents the exchanges with their neighbors are more frequent and more personal. Nature of exchanges varies from: taking care of children, loans of domestic objects to financial aid in case of crisis.

Results show that respondents had more extensive networks of interactions, visits were more frequent and many services were exchanged between neighbors. Accordingly we can affirm that degree of social interaction is rather higher than predicted.

### 5.3. Satisfaction within the neighbourhood:

The improvement of neighborhood conditions induced many positive effects on quality of life on the residents; in this section we will examine the levels of satisfaction in the districts

To measure satisfaction with the physical environment, respondents were asked to use a three point Likert scale ranging from very satisfied to dissatisfied to indicate how satisfied they were with: (1) "physical environment of the district; (2) "safety in the neighbourhood

High scores represented higher levels of satisfaction.

As evident from Table 3, residents expressed high levels of satisfaction with the physical environment of their district and safety in their neighborhood. 85,1% of the interviewers, felt satisfied or very satisfied with the physical environment. 89,4% felt satisfied or very satisfied with safety

All interviews point out that present living conditions of the neighborhood are better today than they were before the interventions. All interviews also narrate how changes in the provision of appropriate sewer, water and the pavement and creation of new roads contributed significantly to the improvement of their communities.

TABLE 3 - SATISFACTION WITH THE NEIGHBOURHOOD

	Number	Valid Percent	Cumulative percent
<b>Satisfaction with physical environment</b>			
Dissatisfied	21	14,9%	14,9%
Satisfied	51	36,2%	51,1%
Very satisfied	69	48,9%	100%
<b>Satisfaction with safety</b>			
Dissatisfied	15	10,6%	10,6%
Satisfied	62	44,0%	54,6%
Very Satisfied	64	45,4%	100%

## 6. CONCLUSIONS

The main hypothesis of the present study that urban upgrading in Bouakal improved the quality of life of the residents and the perception of safety in the area is clearly confirmed

Beyond the sanitary conditions and aesthetic value, the physical interventions in Bouakal induced many positive impacts on the quality of life of the residents. The image of the district had been improved Housing had been refurbished improving not only spatial conditions but also the add-on of personal and esthetical elements. Commercial attractiveness within the district brought more people to the districts and reduced the poverty levels in this community.

The resulting changes provide a better picture of Bouakal , increased the mobility through the district and discouraged criminal activity.

On the other hand many changes in security happened over time in the area. Results of the investigation revealed that Crime is not seen as a significant problem in Bouakal. Interviewers said that there is little serious crime in their area. They tended not to consider crime and safety to be major issues in their lives, and few had personally experienced crime. Drugs prostitution and violence were all found to be less of a problem than years earlier. Criminal activity has been clearly discouraged, the overall crime rate in the development dropped.

Bouakal which was perceived as doubtful and too dangerous during numerous years, is becoming a pleasant place to live and a safe neighborhood The Majority of its residents felt safe. Most of the interviewers asked to compare safety in their district to other districts said that Bouakal is safer than the other districts

Findings show that physical interventions in this informal settlement had positive impacts on both quality of life of the residents and on individuals perceptions of security overall.

These results were in accordance with finding of previous researches that high quality urban environment contribute to its relatively low violence and urban safety

In addition to the improvement of safety, regarding social life, the investigations showed that neighborhood relations are intense, the interactions proved to be stronger than supposed. Residents expressed high levels of satisfaction with both physical environment and safety in the neighborhood

Paper concludes that after two decades of Bouakal implementation, that involve physical interventions, urban upgrading benefits residents' in terms of both modifying perceptions of security and helping to alleviate the conditions of poverty. Bouakal is today a better place to live, with strong social networks, high level of "neighborliness" and satisfaction among its residents.

The present study confirmed past research that had found a positive relationship between neighborhood quality, satisfaction with the local physical environment and perceptions of safety. More importantly, the results corroborate with finding of previous researches on spontaneous settlements that improving neighborhood conditions had a positive influence on perceptions of safety Samper Jota (2011).

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Naceur F.

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