



GLOBAL JOURNAL OF RESEARCHES IN ENGINEERING: J
GENERAL ENGINEERING

Volume 17 Issue 1 Version 1.0 Year 2017

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 2249-4596 & Print ISSN: 0975-5861

The Impact of High Population Density on the Built Environment and the Behavior of Individuals in Amman

Elaf Dawodieh
University of Jordan

Abstract- When thinking of high density, one of the most important issues is how we perceive it and how it affects us, the users of high density environments. The built environment affects directly personal relationships and neighborhood relations, while spatial configuration is an important factor in determining satisfaction of residents. Also, the experience of living in high density environments is much more complex than living in lower density environments. Thus, I believe that understanding the relationship between people and the built environment and the way in which high density affects human behavior and social relations is particularly important for designing and constructing new high-density residential environments. Amman the primate capital city of the Hashemite Kingdom of Jordan currently has a population in excess of 2 million, but in 1924 it consisted of little more than a collection of dwellings and some 2000–3000 inhabitants.

Keywords: *built environment _ environmental behavior_ high density*

GJRE-J Classification: *FOR Code: 091599*



Strictly as per the compliance and regulations of :



© 2017. Elaf Dawodieh. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License <http://creativecommons.org/licenses/by-nc/3.0/>), permitting all non commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

The Impact of High Population Density on the Built Environment and the Behavior of Individuals in Amman

Elaf Dawodieh

Abstract- When thinking of high density, one of the most important issues is how we perceive it and how it affects us, the users of high density environments. The built environment affects directly personal relationships and neighborhood relations, while spatial configuration is an important factor in determining satisfaction of residents. Also, the experience of living in high density environments is much more complex than living in lower density environments. Thus, I believe that understanding the relationship between people and the built environment and the way in which high density affects human behavior and social relations is particularly important for designing and constructing new high-density residential environments. Amman the primate capital city of the Hashemite Kingdom of Jordan currently has a population in excess of 2 million, but in 1924 it consisted of little more than a collection of dwellings and some 2000–3000 inhabitants. The present paper sets out to document and explain the phenomenal expansion of “ever-growing Amman” Through research will review the impact of population density on the built environment and the behavior of individuals through the study of two areas in the city of Amman in different population density and ask some design solutions after comparing the two areas of study global status.

Keywords: *built environment _ environmental behavior_ high density*

I. INTRODUCTION

Jordan's Population is Estimated at About 6,508,271 Countries' Population is Growing Rapidly, Over the Next Fifty Years; the Demographics Will Change Dramatically in Jordan Lack of Justice, where the Population Distribution in High-Density Concrete Spokesman Suffer While the East and South Parts of the Lack of Investment and Lack of Development of the Non-Availability of Human Potential in Them. Here we Do Not Discuss that Human Nature Feels Secure and Stability in the Booming Places Such as Cities, Villages and Various Centers, but if we Want to Continue to Develop and Thrive on Those Responsible Must Begin the Rehabilitation of Remote Areas to Accommodate the Increasing Human Energy in Jordan.

High density is a physical state involving potential inconveniences (loss of control, stimulus, lack of behavioral freedom, resources or privacy) which may or may not be prominent to a person in the situation prominence of the conditions depends on individual

differences between people ,situational conditions and social condition. Growing interest in the science of psychological self as a result of environmental degradation and urban violence and dwindling natural resources and the impact of environmental pollution on health has not theories methodology sophisticated enough available for behavioral scientists to study the psychological performance and health effects of complex environmental problems and because of this growing awareness of heart society - the environment has expanded the field of Environmental Psychology this axis Scientific study of the various relationships between human behavior and the physical environment and the effects of environmental processors on human psychology and environmental science teenager is closely related to the daily life of different sites and psychologists are studying environmental aspects of this relationship is to increase the positive and constructive findings lose demolition factors. We will search through study the impact of high population density on the built environment and the behavior of individuals in two different areas in terms of population density are the regions of Amman The importance of the study from a scientific point of being considered the first study in Jordan, which is studying the impact of population density on the behavior of individuals and the built environment. The importance of the study and practice as an important aspect for architects, designers and scientists planning to create an effective environment for future humanitarian use as a result of the continued increase in the number of residents.

- The most important reasons that led to the emergence of the problem Natural increase

One of the main reasons for the increase in population is the low mortality rate and the high birth rate due to the development of medicine and the increase in the number of hospitals

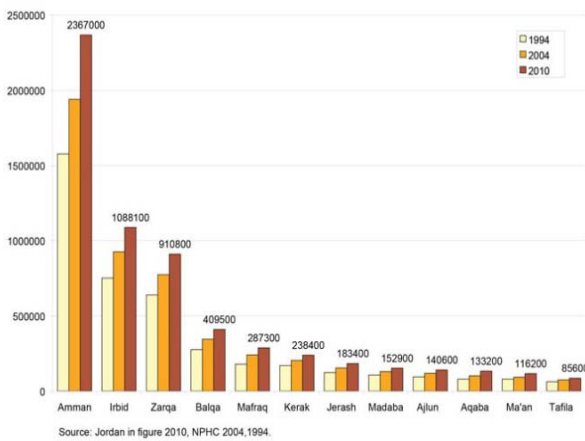
- The increase due to the inclusion of new areas for administrative boundaries of the area

- The increase due to wars

Crowding and density Jordan has a population estimated at about 6,508,271 (est. July 2011). The country's population is growing rapidly, over the next fifty years, will change the demographics in Jordan

Author: e-mail: aloofdaoudieh@gmail.com

dramatically¹. Crowding is a subjective experience that is only mildly related to the objective index, population density (Stokols, 1972), as is obvious to anyone at a good party or anyone who has felt crowded in another contexts by one other person. It exists in three modes (Montano & Adamopoulos, 1984): situational (such as feeling constrained or having expectations dashed), emotional (usually negative, but positive emotions can occur), and behavioral (such as activity completion or assertiveness). Crowding is accentuated or ameliorated by personal factors (e.g., personality, expectations, attitudes, gender), social factors (e.g., the number, type, and actions of others, and attitude similarity), and physical factors (e.g., architectural features and spatial arrangements). Prolonged high indoor population density often impairs mental and physical health, task performance, child development, and social interaction (e.g., Evans & Saegert, 2000). Individuals in some cultures seem to cope with high density better, but sensory overload and lack of personal control lead to many negative outcomes. Short-term high density may have positive outcomes when social and physical conditions are positive. High outdoor density, as in large cities, certainly can provide an enjoyable variety of social and cultural experiences. In general, high density tends to magnify pre-existing social conditions (Freedman, 1975). To reduce the negative effects of high density through environmental design, more space is not always needed. Rather, careful environmental design (such as partitioning and behavioral Zoning) can ease crowding within a limited space²



3

How has the high density of the population effect on the built environment?

¹<https://www.google.jo/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiW6JbdzrXSAhUBuhoKHcDZCaQQFggYMAA&url=https%3A%2F%2Far.wikipedia.org%2Fwiki%2F%25D8%25A7%25D9%2584%25D8%25A3%25D8%25B1%25D8%25AF%25D9%2586&usq=AFQjCNFcIEIGVDsCaIMyotswkSRgmucxzQ&sig2=wHfXFcTYvltYOrFcf4BF7w>

² Robert Gifford, Linda Stag, and Joseph P. Reser, Environmental Psychology, Published by Blackwell Publishing Ltd, p.444-445, 2011.

³ Department of Statistics, 1992-2014

The experience of living in high density environments is much more complex than living in lower density environments. Thus, I believe that understanding the relationship between people and the built environment and the way in which high density affects human behavior and social relations is particularly important for designing and constructing new high-density residential environments in the future. Due to the urban way of life in which a large number of residents live in artificially built areas in the city of Amman, many of their behavior is believed to be influenced by the architectural character of spaces and the characteristics of the physical environment. The built physical environment directly affects our behavior, the social systems that govern our social interactions, our individual experience and our behavior, such as infrastructure, housing and roads. The high density of the affected population in Amman is based on the multi-faceted environment⁴. High density of population affected in the city of Amman on the built environment from several aspects:

a) *Traffic jams*

Constitute a clear manifestation of the congestion caused by the growing role of the car in most big cities and seen this look like a noise of modern life and increase the problems of employment, housing and social services. The traffic jams today represent a severe problem for most cities in the area of goods and movement of people and the consequent loss of resources such as time, energy, fuel.. And reduce the economic productivity of the city and thus adversely affect the jobs and employment growth.

b) *The lack of urban services*

Usually it is difficult for local governments and departments of the cities to find or provide the services required by the population, or aspire to it as a result of the large number of these populations Lack of housing or housing crisis spread worldwide, but the people or the people of the poorest are hurting so dramatically has recorded land values in some areas, it figures high became a large section of people cannot get housing also note the low level and area of residence of the majority and basic urban services to mostly humanitarian needs are less than desired, such as educational and health facilities at all levels, as well as recreational facilities and other service

c) *The implications of the high density environments on human behavior*

With the beginnings of industrialization the scientific attention to the effects of overcrowding on people began to emerge and became organized in the 1920s, coinciding with the time when urban dwellers first

⁴ Baum A, Valins S. *Architecture and Social Behavior: Psychological studies of social density*. Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers, 1977.

exceeded rural populations in many cities. Studies on the effects of high negative density on the built environment and behavior of individuals in urban life after the Second World War have increased when American and European cities recorded an unprecedented real estate boom. The first sociological studies on the influence of density are based on the premise that urban life is a continuous source of aggressive behavior, frustration and conflict that generates as a final result a number of evils and social dysfunctions.⁵

II. DENSITY AND SOCIAL PATHOLOGIES

Calhoun's laboratory study, One of the first studies on the effects of crowding is conducted on a population of rats. In laboratory conditions, populations of rats were subjected to spatial constraints and limitations, while being provided with enough water and food supplies. While the only limited resource was space, the rat population instead of growing exponentially because of food suffered a dramatic decrease, exhibiting violent and aggressive behavior, high infant mortality, a decreased quality of nests and even a lack of nest building exhibited by mothers, cannibalism, followed by asexual behavior and total withdrawal from the community's social life.

*The grouping of those manifestations was defined by Calhoun as a "behavioral sink", and the conclusions of the study and the term that describes them became very influential after they were published, migrating from the academic area into urban culture. A behavioral sink is described as being "the outcome of any behavioral process that collects animals together in unusually great numbers. The unhealthy connotations of the term are not accidental: a behavioral sink does act to aggravate all forms of pathology that can be found within a group"*⁶ From this experience, the effect of high density in the impact and change in behavior of individuals, especially in the built environment

a) Effect of density on social behavior

- High density reduces attraction (less liking for people and places) .long term density dormitory students living in triples were less satisfied with their roommates than those living in doubles⁷.
- Withdrawal may be associated with high levels of social contact; it functions as response for high density, a means of coping or an aftereffect. Withdrawal responses include: less eye contact, head movements away from others, maintenance of

greater interpersonal distance. Also the greater density leads to less helping⁸.

Higher-density development leads to Aggression and higher crime rates. People sometimes associate density with crime, even though numerous studies show that no relationship exists between the two. A study in Irving, Texas, using geographic information systems and crime statistics, found no Link between crime and density. There are many studies that have shown a high correlation between high density and crime in high density cities. The number of blocked and invisible areas increases, thus increasing the crime. The number of foreign individuals in the region increases, thus reducing the security ratio in the region⁹

b) Feeling the effects of density Physiological arousal

High social density may cause negative affective states (bad mood) and anxiety. Negative feelings caused by high density may be stronger in males than in females, males have greater personal space needs than do females. Females socializing is more affiliate (affinity for others at close range). Woman sometimes approach high density setting in more cooperative ways than do men. High density also affect in human health Higher pulse rate and blood pressure is related to high density conditions High density conditions in transportations media leads t stress. Regardless of high density, passengers boarding an empty transportation media at the first stop had lower stress (they had more control were able to chose where to sit and with whom) compared to passengers boarding halfway to the final destination¹⁰

Living under high density conditions can have negative health consequences (somewhat inconsistent) and the disease can spread more quickly in high density conditions One study has shown that the high population density led to the emergence of social stratification and the lack of per capita health care and services which led to the high rate of crime and the emergence of diseases¹¹

III. CASE STUDY IN AMMAN

a) Society and the study sample

The study represents the community Capital Governorate is the most populous province and the third largest area of the province after the governorates of Mann, Mafraq, and the most important and represent the backbone of the Jordanian state. The 2009

⁸ Robert Gifford, Linda Steg, and Joseph P. Reser, Environmental Psychology, Published by Blackwell Publishing Ltd,p.,2011.

⁹ University of Alaska Justice Center, "The Strength of Association: Housing Density and Delinquency," *Anchorage Community Indicators*, series 3A, no. 1, <http://justice.uaa.alaska.edu/indicators/series03/>

¹⁰ Robert Gifford, Linda Steg, and Joseph P. Reser, Environmental Psychology, Published by Blackwell Publishing Ltd, p., 2011.

¹¹ Hassan Jaw khaddar: 1992 Juvenile Delinquents Act, culture Library for Publishing and Distribution, Amman, Jordan,p.90

⁵ Huang,Ed Tieh-yeu,Impact of environmental design on residential crowding,1982.,Dissertations and theses paper 774

⁶ Calhoun JB. Population Density and Social Pathology. Scientific American, Vol. 206 (3), pp. 139–148, 1962.

⁷ Baum A, Valins S. *Architecture and Social Behavior: Psychological studies of social density*. Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers, 1977

population estimates indicate that the number of residents of the capital province, approximately two million people, making it about one-third of Jordan's population¹². Amman is divided administratively area to 9 areas¹³

The study sample was selected by two samples of the above areas, namely Zahran area which has a population of 70,648 and the Yarmulke area, which has a population of 206,570 inhabitants. Zahran and Yarmulke were selected regions because the different population densities in the two regions to comparison between the two regions by the impact on the population density of the urban area and how it affect in the social behavior.

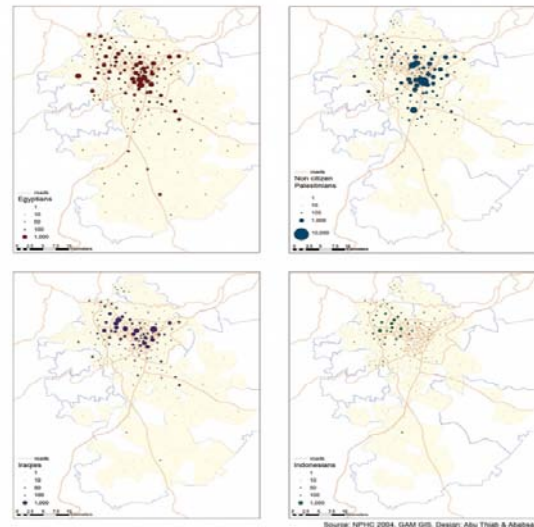
b) Study area (yarmulke and Zahran region)

Jordan is a small country, whose population is concentrated predominantly along the Mediterranean climate, in close proximity to its major cities Amman, Zarqa, Madaba, Salt and Irbid . The population of these cities and their immediate hinterland amounts to some 75% of the Jordan residents as indicated in. The study focuses on Yarmulke and Zahran region with an area of around 900 km², which is part of greater Amman-area

c) Trends of Demographic Growth in Amman

The Urbanization in Jordan is the result of a rapid population growth caused by high natural growth and a flow of refugees. This essentially unplanned and therefore uncontrolled process results in the destruction of natural landscape and ecological footprint. Historically, urban immigration in Amman has increased at rates that have exceeded those of infrastructure development in the destination cities, resulting in concentration of population and increasing of population density. Continuous migration flows have largely contributed to an increase of the population density and built-up areas, one of the main effects of such a situation is the transformation of settlement structures and urban services.

The population growth of Amman since the second half of the 20th century has been Phenomenal, in terms of its population, density, and socio-economic characteristics. This has Transformed Amman from small town in the early 1920s of little more than 3000 people to a major city with a population of 2.4 million people¹⁴



The physical expansion of Amman 1956–1985.¹

First region _Yarmulke¹⁵ Yarmulke: one of the Greater Amman Municipality areas that make up the brigade Reed Amman, capital of the province of the Hashemite Kingdom of Jordan. Located in the central part of the Jordanian capital, Amman, and consists of three neighborhoods or residential areas. Hit area (5.502) and by (44.6) of the total area of the Greater Amman Municipality and the number of inhabitants (207.866 inhabitants).

Picture¹⁶



Second region _ Zahran¹⁷ Zahran region one of the Greater Amman Municipality areas that make up the

¹⁵[https://www.google.jo/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwig9P2au8XSAhVEOxQKHeOmB_kQFggYMAA&url=https%3A%2F%2Far.wikipedia.org%2Fwiki%2F%25D8%25A7%25D9%2584%25D9%258A%25D8%25B1%25D9%2585%25D9%2588%25D9%2583_\(%25D8%25B9%25D9%2585%25D8%25A7%25D9%2586\)&usq=AFQjCNEWax3t9S5N56SqOSAzSIMWWYTpDg&sig2=cOJBQu2IGyN7RCvhDnRijw&bvm=bv.148747831.d,d24](https://www.google.jo/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwig9P2au8XSAhVEOxQKHeOmB_kQFggYMAA&url=https%3A%2F%2Far.wikipedia.org%2Fwiki%2F%25D8%25A7%25D9%2584%25D9%258A%25D8%25B1%25D9%2585%25D9%2588%25D9%2583_(%25D8%25B9%25D9%2585%25D8%25A7%25D9%2586)&usq=AFQjCNEWax3t9S5N56SqOSAzSIMWWYTpDg&sig2=cOJBQu2IGyN7RCvhDnRijw&bvm=bv.148747831.d,d24)

¹⁶<https://www.google.jo/search?q=%D8%A7%D9%84%D8%A7%D8%B2%D9%85%D8%A9+%D8%A7%D9%84%D9%85%D8%B1%D9%88%D8%B1%D9%8A%D8%A9+%D9%81%D9%8A+%D9%85%D9%86%D8%B7%D9%82%D8%A9+%D8%A7%D9%84%D9%8A%D8%B1%D9%85%D9%88%D9%83+%D8%B9%D9%85%D8%A7%D9%86&sa=X&biw=1366&bih=613&tbm=isch&tbo=u&source=univ&ved=0ahUKEwi54lv9s7SAhUCMBokHc4yB50QsAQIGQ>

¹² Distribution of the population in Jordan for the year 2015 from the official website of the Department of Statistics

¹³ Ministry of Interior Administrative Devisions

¹⁴ "Ever-growing Amman", Jordan: Urban expansion, social polarisation and contemporary urban planning issues Robert B. Potter a,*, Khadija Darmame a, Nasim Barhamb, Stephen Nortcliff 2009

brigade Reed Amman, capital of the province of the Hashemite Kingdom of Jordan. Located in the central part of the Jordanian capital, Amman, and consists of five neighborhoods or residential areas. An area of (13.8) square kilometers and with a population (600,000) people.



The picture taken by researcher

*Statistical methods used to analyze the questioner*_To achieve the objectives of the study and verification of hypotheses has been relying on statistical methods and descriptive as follows:

1. Measures of central tendency: the arithmetic mean.
2. Measures of dispersion: standard deviation
3. Cranach's alpha reliability coefficient for the detection reliability of study tool. Testing one sample T-test to accept or reject hypotheses

IV. CONCLUSIONS

In light of the questionnaire analysis and analysis of the responses of the study sample, this aspect deals with a presentation of the overall findings of the researcher, as an answer to the questions that have been raised in the first chapter of this study, which represented her problem and hypotheses which it was built, and in the light of these results that have been reached in the current study, the researcher made a number of recommendations.

From Table (1_10) note that the arithmetic mean of all the paragraphs is greater than the arithmetic mean premise (3) this shows that all the study sample have a positive opinion towards them, demonstrating their approval of the paragraphs of the hypothesis. It also notes that the standard deviation for most paragraphs of the hypothesis is smaller than the right one, which demonstrates the heterogeneity of most of the answers to the study sample paragraphs hypothesis individuals, as well as fined that the significance (sig) for all ferries

¹⁷[https://www.google.jo/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiyvlfirusXSAhVLRQKHQWYDaMQFggYMAA&url=https%3A%2F%2Fwww.wikipedia.org%2Fwiki%2F%25D8%25B2%25D9%2587%25D8%25B1%25D8%25A7%25D9%2586_\(%25D8%25B9%25D9%2585%25D8%25A7%25D9%2586\)&usg=AFQjCNFYU1_bpKLSovUFbcfv6MxliuuxfA&sig2=OmPsThRmNsXPHiwThk4Ryw](https://www.google.jo/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiyvlfirusXSAhVLRQKHQWYDaMQFggYMAA&url=https%3A%2F%2Fwww.wikipedia.org%2Fwiki%2F%25D8%25B2%25D9%2587%25D8%25B1%25D8%25A7%25D9%2586_(%25D8%25B9%25D9%2585%25D8%25A7%25D9%2586)&usg=AFQjCNFYU1_bpKLSovUFbcfv6MxliuuxfA&sig2=OmPsThRmNsXPHiwThk4Ryw)

less than (0.05), which confirms the approval of the sample clauses hypothesis. Also note that (9) vertebrae reached the arithmetic mean in categorical term (4.21-5.0), the extent to approve strongly, while there are direct and signed in categorical term (3.41-4.2), which is the extent of approval. That reach the approval of the study sample of all first hypothesis phrases in the regions of Zahran and Yarmulke this confirms the validity of the hypothesis (*no effect of the high population density on the built environment*)

From Table (1_12) note that the arithmetic mean of all the paragraphs is greater than the arithmetic mean premise (3) This shows that all the study sample have a positive opinion towards them, demonstrating their approval of the paragraphs of the hypothesis. It also notes that the standard deviation for most paragraphs of the hypothesis is smaller than the right one, which demonstrates the heterogeneity of most of the answers to the study sample paragraphs hypothesis individuals, as well as fined that the significance (sig) for all ferries less than (0.05), which confirms the approval of the sample clauses hypothesis. Also note that (6) vertebrae reached the arithmetic mean in categorical term (4.21-5.0), the extent to approve strongly, while there are five paragraphs and signed in categorical term (3.41-4.2), which is the extent of approval. That reach the approval of the study sample all the second hypothesis phrases this confirms the validity of the hypothesis (*no effect of the high population density on the behavior of individuals*)

V. DISCUSS THE RESULTS

1. There is the impact of the high density in built environment

* There is the impact of high-density wear on roads and traffic accidents as the number of individuals over a year thus increasing the number of cars with the roads remain the same size

High people density, by providing a greater number of users, would sustain the use of the mass transit system and thus improve its efficiency and viability. Furthermore, high building and people density means that both places and people are concentrated and close to each other. This offers more opportunities for walking and cycling, and therefore would reduce the number of car trips, as well as the travel distance per trip. High people density can enhance the opportunity for using public transit and thus help to reduce the use of private cars.¹⁸

- * There is the impact of high-density drain on resources

Environment affected the way you consume the city's land and other resources urban informal - and growth, both measured by an increase in the numbers

¹⁸ Understanding Density and High Density Vicky Cheng p.15

of the population or the amount of space that is spread by Alepeshr- depends on the land, water and energy from the surrounding areas to meet the needs of humans. And increases dependence on cars and buildings need energy and increasing environmental pollution and destruction of the use of gas and oil and the flow of pollutants in lakes and rivers¹⁹

* There is the impact of high population density on the expansion of the expense of Agricultural land and the mixing of industrial projects with efficient housing

Maintaining agricultural land and lack of urban expansion at the expense of only extreme necessity and in the minimalistic and expansion as much as possible in the desert areas

Redirection of migration away from the densely populated cities and by strengthening the economic base and the infrastructure of some cities, the availability of consumer needs and entertainment services, all of which say what will be in the countryside and is grounds for attracting more population groups that seek to stability in the social milieu advanced

* There is a statistically significant effect on the rising prices and the depreciation of buildings has structural

Maintenance costs and higher depreciation and structural restoration of the buildings and the difficulty of expanding horizontally or vertically, which led to the increasing demand for housing and the next rising housing prices²⁰

* There is a statistically significant effect on the difficulty of inferred housing

Renewal of worn-out areas of the city to improve health conditions by providing better living conditions for residents by replacing older units desolated and spam and improve service delivery and improve the environment²¹

2. there is the impact of the high density on human behavior

* There is a statistically significant effect of the high density of the high crime rate and lower the level of security in the region.

There is a clear relationship between the physical environment of the home and educational attainment of the children to Congestion caused by the home of the lack of privacy and noise and turned into a home environment Repellent lead to leakage of the children to the street, which could lead to a deviation of the children toward crime²²

¹⁹ Cities dimensional environment and humanitarian planning Author: Lao Marcia p43

²⁰Social inhabitant, Rania Mohammed Ali Taha 2010 mutual influence between Allowaf urban housing and cultural identity

²¹ Dr. Malik Ibrahim and Dr. Mohammed al-Obeidi Urban planning and humanitarian problems, p 481

²²Social inhabitant, Rania Mohammed Ali Taha 2010 mutual influence between Allowaf urban housing and cultural identity

* There is the impact of high-density on the use of alternative means of transport

There are many methods in the style of addressing urban land use can reconcile the communities and transport considerations growth will need and, in particular renovation followed the old laws on zoning, (have planners continued in most industrialized countries in the West to isolate homes for the workplace and in spite of it far longer pose a threat to the health, Vtahjr residential areas during the day and keep the workplace free at night and some areas do not increase too much on being the ways

* The key to the success of the division of integrated areas as a strategy for the transfer is to encourage dense urban development enough to promote alternatives to cars in compact communities can be a lot of activities grouped in the range of distance can be traversed on foot or riding a bike²³

* There is the impact of the high density of the few open areas of social relationships between individuals

Territory in large cities is limited.. Every person needs a space free of noise, interruptions, and contact with others. Note in high densely populated areas few areas that promote social relations. Most people in these areas live in apartments. This gives an indication of the low number of areas of communication between people in areas that contain density A high security factor that reduces the area's environmental psychology may determine in the future what designs will help to alleviate the stresses of population density. The non-application of laws and codes for the design of residential neighborhoods according to the residential housing density led to the lack of services in the residential neighborhoods of green spaces, children's games and infrastructure For land in large cities is limited. Most people in densely populated areas have no land to protect

Obviously every person needs their space that is free of noise, interruption, and contact with others. Living is full of options for contact with other people, when those options are taken away by population density, people will feel the anxiety build. Every person has to have a measure of privacy and personal space. Environmental psychology may determine in the future what designs will help to alleviate the stressors of population density.²⁴ Not to apply the laws and codes for the design of residential neighborhoods by density residential neighborhood led to the lack of services in the residential neighborhoods of green spaces and Kids Games and infrastructure

²³ Cities dimensional environment and humanitarian planning Author: Lao Marcia

²⁴ Page, Richard A. (1977). *Noise and Helping Behavior*. Retrieved on June 13, 2010 from <http://140.234.1.9:8080/EPSessionID=19913e563c67577d812f76d2350dbcf/EPHos>

* There is a statistically significant effect on increasing environmental pollution. Massed the proportion of individuals at risk of developing respiratory disease.

The problem of noise and pollution is one of the most important problems that are clearly visible in areas with high population density, which increases the possibility of respiratory diseases and damage to the built environment. This is evident from the emissions of cars due to the increase in the number of cars in Amman due to the increase in population.²⁵

VI. RECOMMENDATIONS

A scientific international case study has given solutions to reduce the traffic in high density region (Mockingbird Station)



This project illustrates one of the proposed solutions that can be used in Jordan to minimize the impact of high negative population density on the built environment and the behavior of individuals. Where the functions are integrated with housing, these multi-use neighborhoods make it easy for people to park their car in one place and accomplish many tasks, so less impact of pollutants on the car environment. It is a city that promotes walking, where all the facilities combine the same place from the center of the cinema, commercial buildings, and others. Dallas Express Transportation car trips required but also reduce overall parking needs for the community. But if retail uses are to survive, they must be near households with disposable income. Having those households within walking distance of the shops builds a market for the stores. One study indicates that in some markets, 25 to 35 percent of retail sales must come from housing close to shops for the shops to be successful.

A scientific international case study has given solutions to reduce the crimes in high density region (Westminster Place)

Although today Westminster Place is a thriving, safe community in midtown St. Louis, it was not always the case. The area, approximately 90 acres, was well known by the St. The solution that has been used in this area to reduce the crime rate to contain this area on a

large population is to develop a new plan aimed at slowing traffic through the community, Streets, parking lot lighting, "new eyes on the street," Making it difficult for criminals to notice unnoticed.

The area flourished to a place where people were back. Feel safe walking. Successful community success in revitalizing the surroundings²⁶. Increasing the housing density, adding some market-rate housing, And developing a design that slowed traffic and added additional Lighting changed Westminster Place from a crime-ridden neighborhood To a thriving, safe community.

a) Environmental Solutions To Urban Problems

*Providing parks and urban gardens can cure many of the ails of cities that have high population density that affect on human behavior. Cities need to provide a variety of green areas

- Specialized parks and cultural centers (botanical gardens, zoos, and aquariums)
- public parks to support sporting events and passive activities
- Private gardens. The presence of trees and maintained grassy areas increases feelings of safety in inner city neighborhoods.

*level of play children, supervision by adults and creativity of play doubled in areas with green grass and trees compared with barren areas. Play activity has great significance for children it is a way to learn about the world. Play grounds may be better used and more important in cities than in small towns, because there is less space for children in cities.

There are three types of playgrounds: traditional playgrounds, contemporary playgrounds, and adventure playgrounds.

**Traditional playgrounds*: contain standard apparatus (swings....) concrete paving) and low aesthetics.

**Contemporary playgrounds*: same as traditional designing but more aesthetics and abstract shapes, a single apparatus serves multiple functions.

**Adventure playgrounds*: begun in Denmark, encourage children to use scrap wood and their cast of material to build their own world of fantasy, tools are supplied (hammers....), children build and modify structures, needs adults supervision. Support more fantasy and richer cognitive experience

b) Urban Renewal and Revitalizing

**Urban renewal*: an integrated series of steps taken to maintain and upgrade the environmental, economic and social health of an urban area. Started with the city beautiful movement, while more modern initiatives focus

²⁵ What are the Effects of Population Density? January 11, 2017

²⁶ Haughey, Richard M. *Higher-Density Development: Myth and Fact*. Washington, D.C.: ULI—the Urban Land Institute, 2005.

more on decaying residential and commercial parts of cities: demolishing neighborhood and resident which may destroy a functioning social system and sense of identity of its old residents. Allocated residents may stay depressed two years after moving.²⁷

c) *Smart Growth*

An urban planning and transportation theory that concentrates growth in compact walk able urban centers to avoid sprawl. It also advocates compact, transit oriented, walk able, bicycle friendly land use, including neighborhood schools, complete streets, and mixed use development a range of housing choices. The Principles of smart growth are Mixed land use, Take advantage of compact building design, Create a range of housing opportunities and choices, Create walk able neighborhoods, Foster distinctive, attractive communities with a strong sense of place, Preserve open space, farmland, natural beauty, and critical environmental areas, Strengthen and direct development toward existing communities, Provide a variety of transportation choices, Make development decision predictable, fair, and cost effective and Encourage community and stakeholder collaboration in development decisions

d) *Pedestrian environments*

the use of pedestrian malls to enhance city life, a street in a commercial downtown area is blocked off and turned in to a plaza for pedestrians to: Beautify the area, Reduce traffic congestion and Encourage commerce in deteriorating areas. Designs that reduce the perceived density could be associated with less crowding and negative effects. High rise buildings are associated with greater feelings of crowdedness and less perceived control, safety, privacy and satisfaction with relations with other residents than low rise buildings²⁸

REFERENCES RÉFÉRENCES REFERENCIAS

1. Baum A, Valins S, 1977.. *Architecture and Social Behavior: Psychological studies of social density.* Hillsdale, New Jersey: Lawrence
2. Calhoun JB. Population Density and Social Pathology. *Scientific American*, Vol. 206 (3), pp. 139–148, 1962.
3. Department of Statistics,1992-2014
4. Distribution of the population in Jordan for the year 2015 from the official website of the Department of Statistics
5. Erlbaum Associates, Publishers
6. Hassan Jaw khaddar: 1992 *Juvenile Delinquents Act*, culture Library for Publishing and Distribution,

Amman, Jordan,p.90

7. Haughey, Richard M. , 2005.*Higher-Density Development: Myth and Fact.* Washington, D.C.: ULI–the Urban Land Institute
8. Huang,Ed Tieh-yeu1982, Impact of environmental design on residential crowding, ,(Dissertions and theses paper)
9. Lao Marcia Cities dimensional environment and humanitarian planning Author p43
10. Malik Ibrahim and Dr. Mohammed al-Obeidi Urban planning and humanitarian problems, p 481
11. Rania Mohammed Ali Taha 2010 Social inhabitant mutual influence between Allowaf urban housing and cultural identity
12. Robert B. Potter a,* , Khadija Darmame a, Nasim Barhamb, Stephen Nortcliff 2009 Ever-growing Amman”, Jordan: Urban expansion, social polarisation and contemporary urban planning issues
13. Robert Gifford, Linda Stag, and Joseph P. Reser, 2011, *Environmental Psychology*, Published by Blackwell Publishing Ltd, p.444-445. (Book style)
14. Richard A. (1977).*Noise and Helping Behavior.* Retrieved on June 13, 2010
15. Understanding Density and High Density *Vicky Cheng p.15*
16. University of Alaska Justice Center, *Anchorage Community Indicators* “The Strength of Association: Housing Density and Delinquency,”
17. <https://www.google.jo/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKewiW6JbdzrXSAhUBuhoKHcDZCa0QFggYMAA&url=https%3A%2F%2Far.wikipedia.org%2Fwiki%2F%25D8%25A7%25D9%2584%25D8%25A3%25D8%25B1%25D8%25AF%25D9%2586&usg=AFQjCNFciEIGVDsCaIMYotswkSRgmucxzQ&sig2=wHfXFcTYvItYOrFcF4BF7w>
18. [https://www.google.jo/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKewig9P2au8XSAhVEOxQKHeOmB_kQFggYMAA&url=https%3A%2F%2Far.wikipedia.org%2Fwiki%2F%25D8%25A7%25D9%2584%25D9%258A%25D8%25B1%25D9%2585%25D9%2588%25D9%2583_\(%25D8%25B9%25D9%2585%25D8%25A7%25D9%2586\)&usg=AFQjCNEWaX3t9S5N56SqOSAzSIMW WYTpDg&sig2=cOJBQu2lGyN7RCvhDnRjww&bvm=bv.148747831,d.d24](https://www.google.jo/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKewig9P2au8XSAhVEOxQKHeOmB_kQFggYMAA&url=https%3A%2F%2Far.wikipedia.org%2Fwiki%2F%25D8%25A7%25D9%2584%25D9%258A%25D8%25B1%25D9%2585%25D9%2588%25D9%2583_(%25D8%25B9%25D9%2585%25D8%25A7%25D9%2586)&usg=AFQjCNEWaX3t9S5N56SqOSAzSIMW WYTpDg&sig2=cOJBQu2lGyN7RCvhDnRjww&bvm=bv.148747831,d.d24)
19. <https://www.google.jo/search?q=%D8%A7%D9%84%D8%A7%D8%B2%D9%85%D8%A9+%D8%A7%D9%84%D9%85%D8%B1%D9%88%D8%B1%D9%8A%D8%A9+%D9%81%D9%8A+%D9%85%D9%86%D8%B7%D9%82%D8%A9+%D8%A7%D9%84%D9%8A%D8%B1%D9%85%D9%88%D9%83+%D8%B9%D9%85%D8%A7%D9%86&sa=X&biw=1366&bih=613&tbm=isch&tbo=u&source=univ&ved=0ahUKewi54lv9s7SAhUCMBokHc4yB50QsAQIGQ>

²⁷ Robert Gifford, Linda Steg, and Joseph P. Reser, *Environmental Psychology*, Published by Blackwell Publishing Ltd,p.,2011.

²⁸ Robert Gifford, Linda Steg, and Joseph P. Reser, *Environmental Psychology*, Published by Blackwell Publishing Ltd,p.,2011.

20. [https://www.google.jo/url?sa=t&rct=j&q=&esc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiyvlfirusXSAhVLRQKHQWyDaMQFggYMAA&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2F%25D8%25B2%25D9%2587%25D8%25B1%25D8%25A7%25D9%2586_\(%25D8%25B9%25D9%2585%25D8%25A7%25D9%2586\)&usg=AFQjCNFUYI_bpKLSoVUFbcfv6MxliuuxfA&sig2=OmPsThRmNsXPHiwThk4Ryw](https://www.google.jo/url?sa=t&rct=j&q=&esc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiyvlfirusXSAhVLRQKHQWyDaMQFggYMAA&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2F%25D8%25B2%25D9%2587%25D8%25B1%25D8%25A7%25D9%2586_(%25D8%25B9%25D9%2585%25D8%25A7%25D9%2586)&usg=AFQjCNFUYI_bpKLSoVUFbcfv6MxliuuxfA&sig2=OmPsThRmNsXPHiwThk4Ryw)
21. <http://140.234.1.9:8080/EPSessionID=19913e563c67577d812f76d2350dbcf/EPHos>