

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

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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.

Index terms— built environment _ environmental behavior_ high density.

1 INTRODUCTION

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

Author: e-mail: aloofdaoudieh@gmail.com 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

5 C) THE IMPLICATIONS OF THE HIGH DENSITY ENVIRONMENTS ON HUMAN BEHAVIOR

43 create an effective environment for future humanitarian use as a result of the continued increase in the number
44 of residents.

45 ? The most important reasons that led to the emergence of the problem Natural increase One of the main
46 reasons for the increase in population is the low mortality rate and the high birth rate due to the development
47 of medicine and the increase in the number of hospitals ? The increase due to the inclusion of new areas for
48 administrative boundaries of the area

49 2 ?

50 The increase due to wars Crowding and density Jordan has a population estimated at about 6,508,271 (est.
51 July 2011). The country's population is growing rapidly, over the next fifty years, will change the demographics
52 in Jordan dramatically0 F 1 . Crowding is a subjective experience that is only mildly related to the objective
53 index, population density (Stokols, 1972), as is obvious to anyone at a good party or anyone who has felt
54 crowded in another contexts by one other person. It exists in three modes (Montano & Adamopoulos, 1984):
55 situational (such as feeling constrained or having expectations dashed), emotional (usually negative, but positive
56 emotions can occur), and behavioral (such as activity completion or assertiveness). Crowding is accentuated
57 or ameliorated by personal factors (e.g., personality, expectations, attitudes, gender), social factors (e.g., the
58 number, type, and actions of others, and attitude similarity), and physical factors (e.g., architectural features
59 and spatial arrangements). Prolonged high indoor population density often impairs mental and physical health,
60 task performance, child development, and social interaction (e.g., Evans & Saegert, 2000). Individuals in some
61 cultures seem to cope with high density better, but sensory overload and lack of personal control lead to many
62 negative outcomes. Short-term high density may have positive outcomes when social and physical conditions are
63 positive. High outdoor density, as in large cities, certainly can provide an enjoyable variety of social and cultural
64 experiences. In general, high density tends to magnify pre-existing social conditions (Freedman, 1975). To reduce
65 the negative effects of high density through environmental design, more space is not always needed. Rather,
66 careful environmental design (such as partitioning and behavioral Zoning) can ease crowding within a limited
67 space1 The experience of living in high density environments is much more complex than living in lower density
68 environments. Thus, I believe that understanding the relationship between people and the built environment and
69 the way in which high density affects human behavior and social relations is particularly important for designing
70 and constructing new highdensity residential environments in the future. Due to the urban way of life in which a
71 large number of residents live in artificially built areas in the city of Amman, many of their behavior is believed
72 to be influenced by the architectural character of spaces and the characteristics of the physical environment. The
73 built physical environment directly affects our behavior, the social systems that govern our social interactions,
74 our individual experience and our behavior, such as infrastructure, housing and roads. The high density of the
75 affected population in Amman is based on the multifaceted environment3 F 4 .High density of population affected
76 in the city of Amman on the built environment from several aspects:

77 3 a) Traffic jams

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

83 4 b) The lack of urban services

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

90 5 c) The implications of the high density environments on 91 human behavior

92 With the beginnings of industrialization the scientific attention to the effects of overcrowding on people began
93 to emerge and became organized in the 1920s, coinciding with the time when urban dwellers first exceeded rural
94 populations in many cities. Studies on the effects of high negative density on the built environment and behavior
95 of individuals in urban life after the Second World War have increased when American and European cities
96 recorded an unprecedented real estate boom. The first sociological studies on the influence of density are based
97 on the premise that urban life is a continuous source of aggressive behavior, frustration and conflict that generates
98 as a final result a number of evils and social dysfunctions. ?? II.

99 6 Density and Social Pathologies

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

106 The grouping of those manifestations was defined by Calhoun as a "behavioral sink", and the conclusions of
107 the study and the term that describes them became very influential after they were published, migrating from
108 the academic area into urban culture. A behavioral sink is described as being "the outcome of any behavioral
109 process that collects animals together in unusually great numbers. The unhealthy connotations of the term are
110 not accidental: a behavioral sink does act to aggravate all forms of pathology that can be found within a group"
111 6

112 7 a) Effect of density on social behavior

113 From this experience, the effect of high density in the impact and change in behavior of individuals, especially
114 in the built environment ? -High density reduces attraction (less liking for people and places) .long term density
115 dormitory students living in triples were less satisfied with their roommates than those living in doubles 7

116 ? -Withdrawal may be associated with high levels of social contact; it functions as response for high
117 density, a means of coping or an aftereffect. Withdrawal responses include: less eye contact, head movements
118 away from others, maintenance of . ?? Huang,Ed Tieh-yeu,Impact of environmental design on residential
119 crowding,1982,.Dissertions and theses paper 774 6 greater interpersonal distance. Also the greater density leads
120 to less helping 8 Higher-density development leads to Aggression and higher crime rates. People sometimes
121 associate density with crime, even though numerous studies show that no relationship exists between the two. A
122 study in Irving, Texas, using geographic information systems and crime statistics, found no Link between crime
123 and density. There are many studies that have shown a high correlation between high density and crime in high
124 density cities. The number of blocked and invisible areas increases, thus increasing the crime. The number of
125 foreign individuals in the region increases, thus reducing the security ratio in the region

126 8 Case study in Amman a) Society and the study sample

127 The study represents the community Capital Governorate is the most populous province and the third largest
128 area of the province after the governorates of Mann, Mafraq, and the most important and represent the backbone
129 of the Jordanian state. The 2009 High social density may cause negative affective states (bad mood) and anxiety.
130 Negative feelings caused by high density may be stronger in males than in females, males have greater personal
131 space needs than do females. Females socializing is more affiliate (affinity for others at close range). Woman
132 sometimes approach high density setting in more cooperative ways than do men. High density also affect in
133 human health Higher pulse rate and blood pressure is related to high density conditions High density conditions
134 in transportations media leads t stress. Regardless of high density, passengers boarding an empty transportation
135 media at the first stop had lower stress (they had more control were able to chose where to sit and with whom)
136 compared to passengers boarding halfway to the final destination 10 Living under high density conditions can have
137 negative health consequences (somewhat inconsistent) and the disease can spread more quickly in high density
138 conditions One study has shown that the high population density led to the emergence of social stratification and
139 the lack of per capita health care and services which led to the high rate of crime and the emergence of diseases
140 11 population estimates indicate that the number of residents of the capital province, approximately two million
141 people, making it about one-third of Jordan's population 12 . Amman is divided administratively area to 9 areas
142 13 The study sample was selected by two samples of the above areas, namely Zahran area which has a population
143 of 70,648 and the Yarmulke area, which has a population of 206,570 inhabitants. Zahran and Yarmulke were
144 selected regions because the different population densities in the two regions to comparison between the two
145 regions by the impact on the population density of the urban area and how it affect in the social behavior.

146 9 b) Study area (yarmulke and Zahran region)

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

151 10 c) Trends of Demographic Growth in Amman

152 The Urbanization in Jordan is the result of a rapid population growth caused by high natural growth and a flow
153 of refugees. This essentially unplanned and therefore uncontrolled process results in the destruction of natural
154 landscape and ecological footprint. Historically, urban immigration in Amman has increased at rates that have
155 exceeded those of infrastructure development in the destination cities, resulting in concentration of population

214 High people density can enhance the opportunity for using public transit and thus help to reduce the use of
215 private cars.1 7 F 18 * There is the impact of high-density drain on resources Environment affected the way you
216 consume the city's land and other resources urban informal -and growth, both measured by an increase in the
217 numbers of the population or the amount of space that is spread by Alepeshr-depends on the land, water and
218 energy from the surrounding areas to meet the needs of humans. And increases dependence on cars and buildings
219 need energy and increasing environmental pollution and destruction of the use of gas and oil and the flow of
220 pollutants in lakes and rivers1 8 F 19 * There is the impact of high population density on the expansion of the
221 expense of Agricultural land and the mixing of industrial projects with efficient housing Maintaining agricultural
222 land and lack of urban expansion at the expense of only extreme necessity and in the minimalistic and expansion
223 as much as possible in the desert areas Redirection of migration away from the densely populated cities and
224 by strengthening the economic base and the infrastructure of some cities, the availability of consumer needs
225 and entertainment services, all of which say what will be in the countryside and is grounds for attracting more
226 population groups that seek to stability in the social milieu advanced * There is a statistically significant effect
227 on the rising prices and the depreciation of buildings has structural Maintenance costs and higher depreciation
228 and structural restoration of the buildings and the difficulty of expanding horizontally or vertically, which led to
229 the increasing demand for housing and the next rising housing prices1 9 F 20 * There is a statistically significant
230 effect on the difficulty of inferred housing Renewal of worn-out areas of the city to improve health conditions by
231 providing better living conditions for residents by replacing older units desolated and spam and improve service
232 delivery and improve the environment 2 0 F 21 2. there is the impact of the high density on human behavior *
233 There is a statistically significant effect of the high density of the high crime rate and lower the level of security
234 in the region.

235 There is a clear relationship between the physical environment of the home and educational attainment of the
236 children to Congestion caused by the home of the lack of privacy and noise and turned into a home environment
237 Repellent lead to leakage of the children to the street, which could lead to a deviation of the children toward
238 crime2 1 F 22 * There is the impact of high-density on the use of alternative means of transport There are many
239 methods in the style of addressing urban land use can reconcile the communities and transport considerations
240 growth will need and, in particular renovation followed the old laws on zoning, (have planners continued in most
241 industrialized countries in the West to isolate homes for the workplace and in spite of it far longer pose a threat
242 to the health, Vtahjr residential areas during the day and keep the workplace free at night and some areas do
243 not increase too much on being the ways * The key to the success of the division of integrated areas as a strategy
244 for the transfer is to encourage dense urban development enough to promote alternatives to cars in compact
245 communities can be a lot of activities grouped in the range of distance can be traversed on foot or riding a bike2
246 2 F 23 * There is the impact of the high density of the few open areas of social relationships between individuals
247 Territory in large cities is limited.. Every person needs a space free of noise, interruptions, and contact with
248 others. Note in high densely populated areas few areas that promote social relations. Most people in these areas
249 live in apartments. This gives an indication of the low number of areas of communication between people in areas
250 that contain density A high security factor that reduces the area's environmental psychology may determine in
251 the future what designs will help to alleviate the stresses of population density. The nonapplication of laws and
252 codes for the design of residential neighborhoods according to the residential housing density led to the lack of
253 services in the residential neighborhoods of green spaces, children's games and infrastructure For land in large
254 cities is limited. Most people in densely populated areas have no land to protect Obviously every person needs
255 their space that is free of noise, interruption, and contact with others. Living is full of options for contact with
256 other people, when those options are taken away by population density, people will feel the anxiety build. Every
257 person has to have a measure of privacy and personal space. Environmental psychology may determine in the
258 future what designs will help to alleviate the stressors of population density.2 3 F 24 Not to apply the laws and
259 codes for the design of residential neighborhoods by density residential neighborhood led to the lack of services
260 in Year 2017

261 15 J

262 The Impact of High Population Density on the Built Environment and the Behavior of Individuals in Amman *
263 There is a statistically significant effect on increasing environmental pollution Massed the proportion of individuals
264 at risk of developing respiratory disease The problem of noise and pollution is one of the most important problems
265 that are clearly visible in areas with high population density, which increases the possibility of respiratory diseases
266 and damage to the built environment. This is evident from the emissions of cars due to the increase in the number
267 of cars in Amman due to the increase in population.2 4 F 25 VI.

268 16 Recommendations

269 A scientific international case study has given solutions to reduce in high region Station)

270 This project illustrates one of the proposed solutions that can be used in Jordan to minimize the impact of
271 high negative population density on the built environment and the behavior of individuals Where the functions
272 are integrated with housing these multi-use neighborhoods make it easy for people to park their car in one place
273 and accomplish many tasks so less impact of pollutants on the car environment is a city that promotes walking,

16 RECOMMENDATIONS

274 where all the facilities combine the same place from the center of the cinema commercial buildings and others,
275 Dallas Express Transportatio car trips required but also reduce overall parking needs for the community. But if
276 retail uses are to survive, they must be near households with disposable income. Having those households within
277 walking distance of the shops builds in a market for the stores. One study indicates that in some markets, 25
278 to 35 percent of retail sales must come from housing close to shops for the shops to be successful. A scientific
279 international case study has given solutions to reduce the crimes in high density region (Westminster Place)

280 Although today Westminster Place is a thriving, safe community in midtown St. Louis, it was not always the
281 case. The area, approximately 90 acres, was well known by the St. The solution that has been used in this area
282 to reduce the crime rate to contain this area on a ??⁵ What are the Effects of Population Density? January 11,
283 2017 large population is to develop a new plan aimed at slowing traffic through the community, Streets, parking
284 lot lighting, "new eyes on the street," Making it difficult for criminals to notice unnoticed.

285 The area flourished to a place where people were back Feel safe walking Successful community success in
286 revitalizing the surroundings 2 5 F 26 . Increasing the housing density, adding some market-rate housing, And
287 developing a design that slowed traffic and added additional Lighting changed Westminster Place from a crime-
288 ridden neighborhood To a thriving, safe community.

289 a) Environmental Solutions To Urban Problems *Providing parks and urban gardens can cure many of the
290 ails of cities that have high population density that affect on human behavior. Cities need to provide a variety of
291 green areas ? -Specialized parks and cultural centers (botanical gardens, zoos, and aquariums) ? -public parks to
292 support sporting events and passive activities ? -Private gardens .The presence of trees and maintained grassy
293 areas increases feelings of safety in inner city neighborhoods. *level of play children, supervision by adults and
294 creativity of play doubled in areas with green grass and trees compared with barren areas. Play activity has
295 great significance for children it is a way to learn about the world. Play grounds may be better used and more
296 important in cities than in small towns, because there is less space for children in cities .

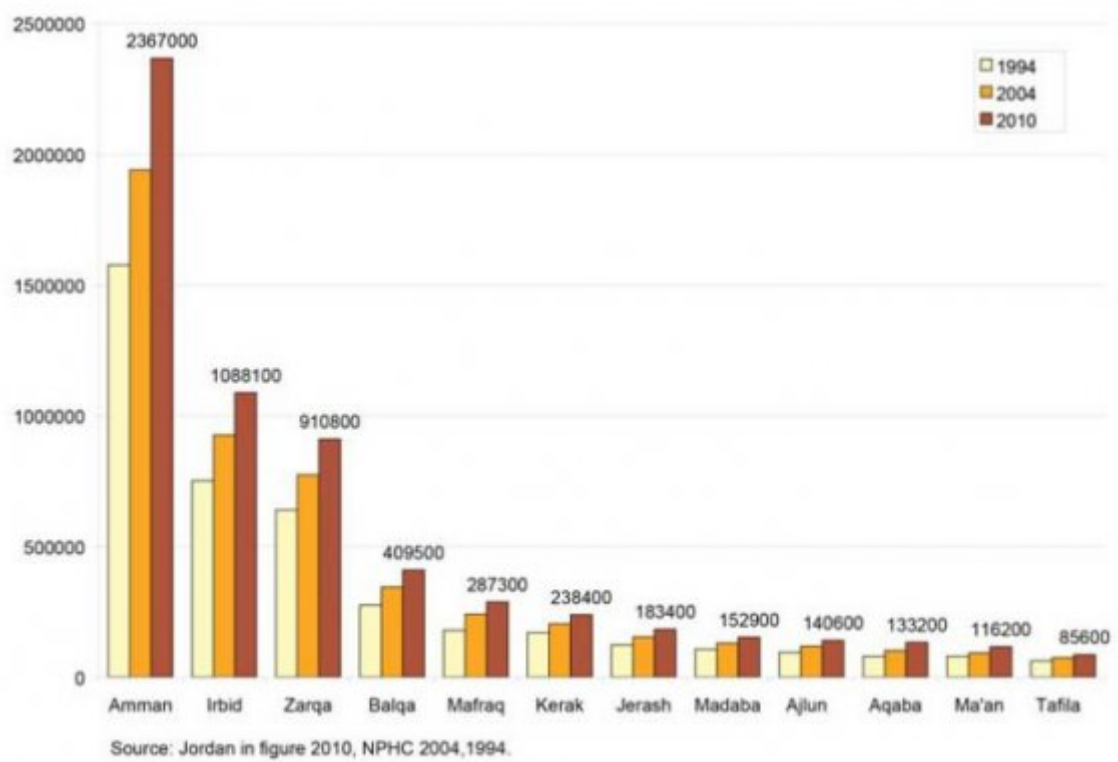
297 There are three types of playgrounds: traditional playgrounds contemporary playgrounds and adventure
298 playgrounds. *Traditional playgrounds: contain standard apparatus (swings?.) concrete paving) and low
299 aesthetics. *Contemporary playgrounds: same as traditional designing but more aesthetics and abstract shapes,
300 a single apparatus serves multiple functions. *Adventure playgrounds: begun in Denmark, encourage children to
301 use scrap wood and there cast of material to build their own world of fantasy, tools are supplied (hammers?.),
302 children build and modify structures, needs adults supervision. Support more fantasy and richer cognitive
303 experience *Urban renewal: an integrated series of steps taken to maintain and upgrade the environmental,
304 economic and social health of an urban area. Started with the city beautiful movement, while more modern
305 initiatives focus more on decaying residential and commercial parts of cities: demolishing neighborhood and
306 resident which may destroy a functioning social system and sense of identity of its old residents. Allocated
307 residents may stay depressed two years after moving. 27 An urban planning and transportation theory that
308 concentrates growth in compact walk able urban centers to avoid sprawl. It the use of pedestrian malls to
309 enhance city life, a street in a commercial downtown area is blocked off and turned in to a plaza for pedestrians
310 to: Beautify the area, Reduce traffic congestion and Encourage commerce in deteriorating areas. Designs that
311 reduce the perceived density could be associated with less crowding and negative effects .High rise buildings are
312 associated with greater feelings of crowdedness and less perceived control, safety, privacy and satisfaction with
313 relations with other residents than low rise buildings² ?? F 28 ^{1 2 3 4}

¹Baum A, Valins S. Architecture and Social Behavior: Psychological studies of social density. Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers, 1977. © 2017 Global Journals Inc. (US)

²FHow has the high density of the population effect on the built environment?

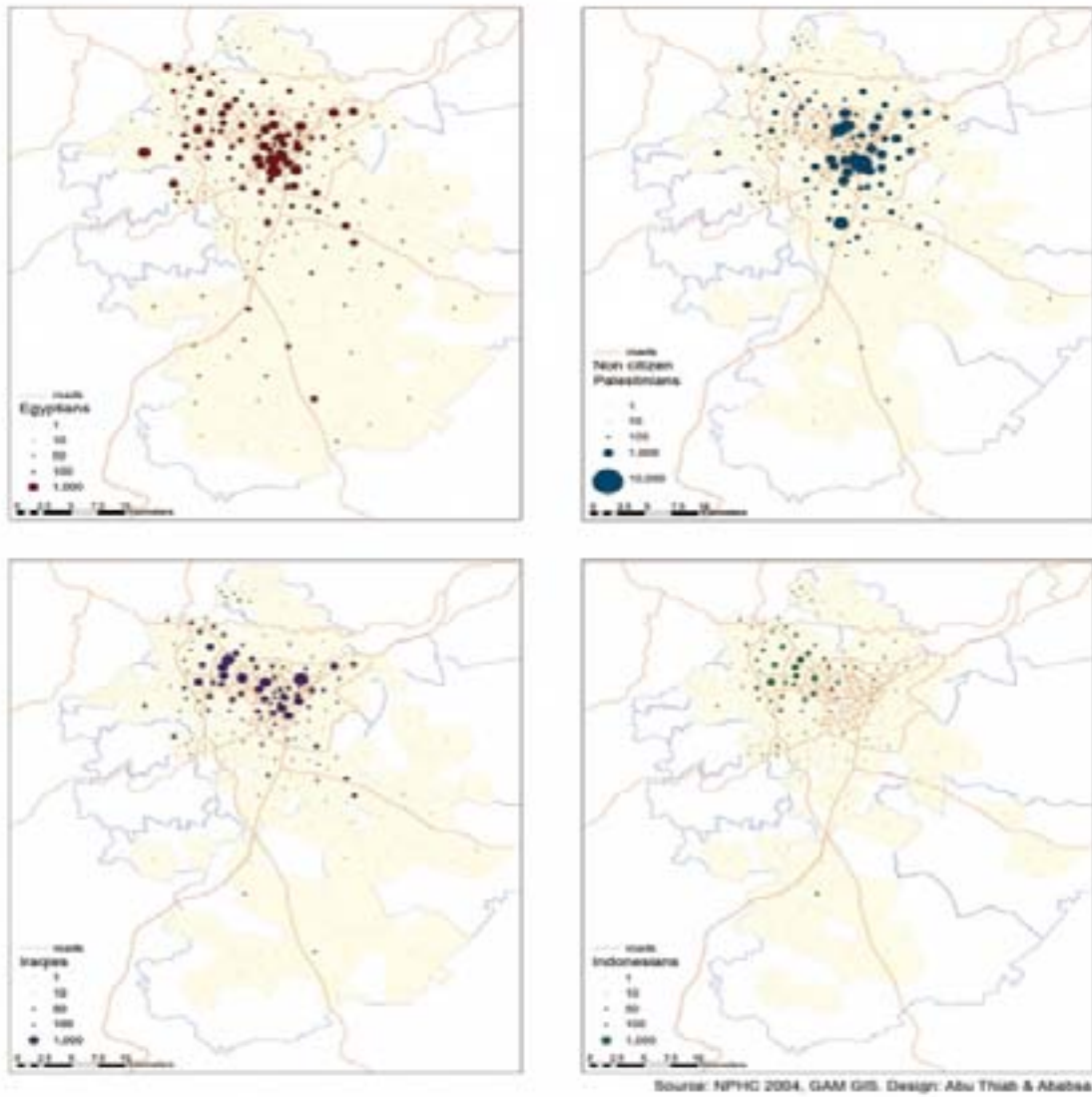
³Understanding Density and High Density Vicky Cheng p.15 © 2017 Global Journals Inc. (US)

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Figure 1: . 9 b



14

Figure 2: 14 '



Figure 3:



Figure 4: 2 .

Figure 5:

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