Using Geomatics methodology to study gentrification indicators of urban heritage districts case study (Alkurd and Altaees neighbourhood) in Babylon Province - Iraq

S A Hasan\(^1, 2\) and G Hazem\(^3\)

\(^1\) Corresponding author  
\(^2\) University of Baghdad, College of Engineering.  
\(^3\) University of Baghdad, College of Engineering.

Email:

Abstract The current study addresses the gentrification process in the old neighbourhoods of low qualification, a process that could lead to changes in the re-composition of the area and re-use of it is appearance. The research hypothesis of gentrification has imposed a feasible process in reconstructing historical areas by emphasizing its advantages in the study; this study will provide a thorough understanding of the process of gentrification through the method of analysis and description and try to understand how it occurs within the locality of the Al-Krad and Al-Taees area in old historical centre of Hilla City as a case study. The localities of the Al-Krad and Al-Taees are within the historical area of the province of Babylon, where this camp has undergone rapid changes in urban areas, urban and social. The research dealt with two aspects, the first one; dealing with the concept of gentrification process, and how could affected on the area. Second one is about historical analysis of the area, to understand the problems caused by merging economic, cultural, services function that lead to changes in physical and urban form with losing urban identity, where historic cities are at a risk of destruction and neglect, where the population is growing and therefore, the need for more capacity for its citizens, and changing their functions, cities lose their identity, with a lack of awareness of the importance of the region, so research aims was the depending on the gentrification concept, the results and effecting of this concept on the physical enhancement to the study area, with improve their economic, social and cultural level by providing investment opportunities for the residents and improving the quality of life and encouraging the poor and middle class to stay and develop them. The importance of the study lies in the representation of new ideas to look at the historical city itself and think about development in a different way, so this methodology was applied by analysing the locality of the Al-Krad and Al-Taees district within the old city centre as a case study. Then we examined the area indicators of gentrification derived from the theoretical framework and to suit the conditions of the region to improve the quality of life in the study area. The area is very vulnerable to the gentrification process, which needs further study to see how this process evolves in the near future, especially with the recent activities and work that the region may face following changes in recent years.

It is important to note that gentrification is a modern system that was implemented in the 1980s and is subject to examination and exploration, where more and more must be discovered, especially in Iraq, which is considered as the first ground to study the process. The study concluded that it is necessary to understand how future gentrification will be supported and updated in order to consider possible solutions to good ways of dealing with heritage and avoiding its negative consequences while using the positive elements of its development where it can be managed and controlled (before it becomes a random process). This will reduce negative consequences and make the most of its positive results.
1. Concept of Gentrification
Decisions on public policy, natural events, population growth and technological development of the social and economic structure contribute to the unique development of the city. In addition, the cities are often in constant change. Through this change, Ruth Glass used the concept of "gentrification" for the first time to describe the exodus of factory workers in 1964, [1]. This concept emerged in the academic fields of urban planning, which can be the result of making cities better to live and restore the natural balance of the environment as well as ensure social integration and reduce the possibility of future demolition and provide a practical solution to the deteriorating neighbourhoods and improve the streets and related infrastructure. It is important to know that without special planning, economic and social research, any intervention in historic areas, including development, renovation and reconstruction, may lead to negative results. In view of the historical areas in particular, the number of arrivals is much higher than the indigenous population (mostly migrants, visitors or tourists) without any interest or appreciation of the spatial and material importance. In fact, they chose these neighbourhoods because of their proximity to the various activities of the city. Therefore, most of them are characterized by a lack of knowledge about the environment and other residents or interest in belonging to the neighbourhood that would reduce the social ties between the population and low confidence among them.

2. The Gentrification
American Oxford Dictionary has defined it as a movement of middle-class families to urban areas, leading to an increase in land values and a secondary impact on the displacement of poor households. In this process, housing in the affected areas, whether refurbished or not, is subjected to a significant increase in prices, such as the movement to neighbourhood to include a degree of transfer of possession from rent to ownership [2]. So Ruth Glass definition of gentrification ensures that the region is improved and developed after the transition of the middle and upper classes, which result in displacement of the indigenous population, the destruction of social ties, the increase in the number of displaced persons and social displacement, which are considered to be the negative effects of this process.

Neil Smith (1982) defines gentrification as a process by which middle-class residential neighbourhoods are rehabilitated by middle-class home buyers, property owners, and professional developers, not involving the rehabilitation of old structures but the construction of new buildings on previously developed land. The definition of Neil Smith ensures the marginalization of landlords and owners of the rented class (the working class) and their homelessness after being sold to the upper class. The rehabilitation of the buildings is then carried out by the new owners and new additions may change the characterization and identity of the area.

Hamnett (1984) states another definition: gentrification usually involves the occupation of middle-class or high-income groups of working-class neighbourhoods and the replacement or displacement of many indigenous concerns, including physical renewal or rehabilitation of dilapidated buildings and modernization to meet the requirements of their new owners. Hamnett explained that the displacement of the occupants of the poor classes is often the result of their being replaced by the upper classes. Consequently, there is a material renewal and rehabilitation of the houses and buildings. Consequently, changes occurred in the area that was exposed to the crime as a whole due to changes in the different requirements of the new occupants, [2].

Pacione (2009) explained gentrification as a spatial social phenomenon requiring overlapping changes in the values of the city's inner areas, a degree of overall improvement of housing and services, and the affairs of its residents and visitors, or it is primarily a process of transformation of the high-income class and the formation of space or space of wealth [3]. The concept of gentrification
referring to the movement of high class families to poor areas, when families have low incomes, causing to rise up level of construction and all services in the poor area, [4].

Previously, Gentrification was known as the rehabilitation of low-grade housing for middle class in urban centres. In the late 1970's, concepts of filtration and expansion began. In the beginning of 1980, the concept and meaning of gentrification was developed by linking it to spatial, economic and community restructuring, [5].

This process can have several positive results, including: reinvestment, increasing levels of home ownership, improving public services, improving commercial activities, renovating vacant and neglected properties, increasing real estate taxes, sales tax, income tax revenues, neighbourhood jobs, property valuation and economic integration, [6].

The negative results are of concern such as rising housing costs, changes in the human nature of the neighbourhood, loss of sense of "belonging and ownership" by long-term residents and potential conflicts between new residents and residents of the neighbourhood. These contradictions bring some political debate about the original residents, [6].

According to table 1, we conclude from the intersection of all previous concepts, positive results can be invested in the benefit of society through the development of policies by architects and planners to guide the government developers and investors to develop and improve the city in order to raise the living standards of the local population and help them improve the quality of life by providing material and moral support, to prevent their displacement from their areas of residence and thus ensure that the process of gentrification, while maintaining the social and cultural system and the loss of identity and belonging to the place and increase social interaction between the inhabitants.

### Table 1. Effects of the Gentrification Process

| Negatives                                      | Positives                                      |
|-----------------------------------------------|------------------------------------------------|
| Possible displacement                         | Increased property ownership                   |
| Increased dependence on domestic spending due to dependence on the middle class | Physical and moral renewal (social, cultural, economic systems ...)|
| Increased crime                              | Improved public services                       |
| Increased real estate prices and rent         | Increased the value of revenues and taxes      |
| Potential conflicts between expatriates and original residents | Increased social mix |
| Expulsion of tenants                          | Reduced urbanization                           |
| Increased cost of local services              | Increased domestic financial revenues          |
|                                               | Minimized abandoned places                     |
|                                               | Stability of degraded areas                    |
|                                               | Possibility of further development             |

Source: researcher depending on source [3], [5], and [6].

### 3. The stages of gentrification development

Hackworth and Smith (2001) have three major stages of developing the process of gentrification since they were known globally:

#### 3.1. Phase I - Pioneer Stage

These began in the mid-sixties to the early seventies of the last century in Western Europe and northern North America and southern Australia in modest neighbourhoods sporadically and confined
to two or three small neighbourhoods in the cities of the main. This was before the economic recession of the late 1970s and came with government aid, which was often accompanied by appeals for easing urban decline, [7]. This phase is often associated with the gentrification process, when it was accepted partially as solution to these areas; this indicates that the impact of state participation in that period was very limited, [8].

3.2. Phase II - Expansion Stage

The second phase coincided with the improvement of depressed markets in the late 1970's. Hackworth and Smith named it the process of stabilization of the gentrification process by transforming new neighbourhoods into real properties; this phase is deeper and more widespread than the first phase, where characteristic feature is the integration of gentrification into a wider range of cultural and economic processes at global and national levels, [7]. What the researchers noted at this stage is that they are largely market-oriented, with efforts by the local government, which are often limited to encouraging the private sector mainly.

3.3. Phase III - Old scent Stage

This phase is characterized by the presence of the resistance factor, especially in areas with displacement. Displacement and poverty of residents confront directly with upgrading, what is noticeable here is that the collapse of the residential stock market in 1987 in addition to the collapse of the residential land market in the inner city and after two years an end to the second phase, despite predictions of a process called 'de-gentrification' that was found during the global recession in the early 1990s, when the value of the land fell temporarily, the reinvestment process was reinvigorated when the third phase began in the late 1990s. Hackworth and Smith (2001) reported that this process is more broadly linked to capital than ever before "as the older developers are completely redesigning neighbourhoods and often with state support, [7].

3.4. Phase IV - Mature Stage

Phase IV and phase III can be distinguished by a shift in the policy context, which involves unifying existing national policies for rich families and dismantling the latest welfare programs associated with the 1960s, most useful is that the Lees et al analysis integrates the idea that different places go through different stages of upgrading at any time in most global cities with strong economies, the third and fourth phases are more systematic than ever before, [8].

4. City of Hilla

Hilla city is the centre of the Babylon Province, which is located on the longitude (44.26) and latitude (29, 32), the location of the province is distinguished in the centre of the Middle Euphrates Region and the participation of administrative boundaries with six provinces gave an important role, as for the transport routes, it has become a gateway to the passage of a number of main roads linking it with the other provinces such as Baghdad, Karbala, Najaf, Al-Qadisiyah and Wasit as well as neighbouring countries, also the route of the highway and railway line linking the province to the southern, northern and western provinces, as reflected in the ground transport activity.
5. City formation
The two neighbourhoods (AL-Jamaen and AL-Krad) are the first place where the city was built, in 1102 A.D., because the army of Saif AL-dawla AL-Mazaidi consisted of the Arabs and Kurds, so as a solution to the conflicts between them, the Arabs settled in the two main neighbourhoods south of the city and the Kurds settled in the north in an area known according to their names (neighbourhood of the AL-Krad), the oldest two neighbourhoods in the Hilla City.

6. The importance of the city
The importance of the city are as follows -

1- The city has the most important area of its entire region and its population, which is the central commercial area. Therefore, despite the deterioration of the environmental and urban level of most of its buildings, the lack of infrastructure and social services, it is still of great importance. This is indicated by the high price of the land, which avoids moving away from its position towards its external centre edge, according to the focusing of the economic, service and administrative activities.

2- The study area considered a unique mixture of Hilla City, which includes various economic, health and residential functions.
3- The architectural and civilization value of the city, include the locality area of the AL-Krad and AL-Taees, which have distinctive architectural features that reflect its form and personality, its cultural façade and its planning heritage, and express its identity with its distinctive elements.

7. The situation of the AL-Krad and AL-Taees neighbourhoods
The AL-Krad and AL-Taees neighbourhoods are part of the historic centre of Hilla City, which is known for its Islamic and historical landmarks. It represents the historical centre, which is an impressive witness to the international, political, strategic, intellectual and commercial level of the city during different periods. The studied area is located in the north of the old city centre among the streets of AL Ray, AL-Atebaa and AL-Tajayned, which makes it a very important location because of the unique architectural style and the focus of business. However, neighbourhoods have been seen obviously neglected over the past decades. The studied area is famous for its heritage buildings, which are characterized by architectural and historical values, however, there are many business activities, street vendors and buildings used for doctors' clinics, health laboratories, etc, and some places used for storage or parking. Thus, these neighbourhoods are rich in architectural diversity, in addition to the presence of many of the economic facilities, which make them vulnerable to the process of gentrification.

8. Analysis
The research will present an analysis of the status of the AL-Krad and AL-Taees neighbourhoods within the old Kasbah area, Two methods were used; firstly, through interviews with professionals in the studied area, especially, that the area is very popular by various visitors, which makes it an important destination for many of them. Secondly, through a field survey, and depending on geometrics techniques for interpreting data related to the state of the buildings, as the uses of buildings and the building system that was used which helped to give a clear image of the process of gentrification.
The studied community included some personal-interviews with the government agencies such as the Urban Planning Office, the Regional Planning Office, the Antiquities Office and the local government. The value of buildings and rents also plays a very important role in the gentrification process. Interviews have also been conducted with tenants, owners and some locals.

9. Results of interviews
Most residents tend to work in two or three part-time jobs to cover their living expenses, particularly unregistered jobs that explain the high rate of unemployment. Some cases of overtaking result in visual and noise pollution and this requires deep? rooted solutions that require concerted efforts from all sides. However, the process may cause suffering to the local population by increasing the rental allowance by the new owners, which leads to acceptance of the rent allowances imposed for the enjoyment of social, cultural and economic satisfaction and because of their proximity to the urban facilities. Tenants do not like to leave their shops because of their proximity to the city centre (AL-Soq AL-Kabeer). This problem can be addressed by providing job opportunities, raising their living and social standards and making them able to pay the cost of living while imposing criteria for landlords to estimate the rent allowance commensurate with the monthly income of the population.

Landowners tend to build new buildings without regard to the nearby heritage buildings, and thus, many unappealing buildings have appeared in the past decade. In an architectural style that is not relevant to the historical context of the area and with rising land prices and rents of renovated buildings, lack of interest in any hopes for the restoration of their buildings, which lead to a decline in the value of housing in some areas.

10. Spatial analysis of the studied area
We studied reality, buildings and building conditions, so we can analyse geomantic techniques and functions, like using Overlay, Qires, and Buffering function on the vector based map we produced from all map sources related to the studied area.

The handicraft sites were in poor condition while the newly constructed buildings were in good condition; the commercial area varies between good and medium conditions, which give more opportunities for renovation of buildings to catch up with better urban conditions than in neighbouring buildings, so the residential buildings are mostly in poor condition to live.

Buildings with bad conditions are good opportunities for future gentrification. As these buildings are in a negative state, once the adjacent building is renovated or used, the passive building becomes active and more incentive for reuse or renovation.

Rental rates were high in the accessible area; it also explains the intensity of business activities, (see part A1), and from part (H1) we can notice that residential building with bad condition. In the southern and south-eastern parts, some investors attracted to rent or to buy, because of their proximity to domestic services and businesses. As a result we can observe several differences, which can be among buildings; where low-rise buildings are located next to tall buildings and armed concrete buildings next to historic buildings.
The following examination was conducted to examine the indicators of the gentrification in the studied area according to the following:

**Table 2. Analysis indicators of gentrification.**

| Item | Gentrification Indicator                                                                 | Achieves |
|------|------------------------------------------------------------------------------------------|----------|
| 1    | **Areas that are most receptive to Gentrification**                                       |          |
| 1-A  | High rent allowance; Property owners prefer to rent their homes for commercial and service uses such as health or administrative uses. The amount of rent varies from one dwelling to another depending on the area and the urban situation. In addition, the rent increases as the house approaches the big market or a commercial street, due to the possibility of investment opportunities. | Ok       |
| 1-B  | Accessibility to duty stations; The area that represents the commercial centre of Hilla City was closed for security purposes (most of streets were closed for cars to pass through and were confined to walking on foot only). The opening of some of the closed streets has helped employers to reach their workplaces with some reservations for parking places where shop owners prefer to put their cars in front of their workplaces. | Ok       |
| 1-C  | Possibility to invest in decayed neighbourhoods; Some investors are looking for dilapidated neighbourhoods with the potential for improvement to find a housing deal that can be renovated and resold to make big profits. The region represents a great opportunity for investors to achieve goods profits after the rehabilitation of buildings. | Ok       |
| 1-D  | High architectural and heritage value; The history of the region was established in 1101 H. It is rich in heritage and religious buildings, characterized by organic composition and narrow alleys that reflect the identity of the historical region. | Ok       |
| 1-E  | Poor level of residential; (55%) of the housing is in a state (poor), 33% of the housing is in the middle state, which is in a good state of construction, that is very low and amounted to about (12%). | Ok       |
| 2    | **Secondary indicators of gentrification**                                                |          |
| 2-A  | Population awareness of the importance of the region                                     | None     |
| 2-B  | The presence of individuals interested in specific urban or cultural facilities (such as artists and professionals). Recently, cultural activities such as art shows, music in the streets of the region have emerged as an inspiring area for artists, aided by the presence of various social and cultural classes in the region. | Ok       |
| 2-C  | Traffic congestion in the urban area; The urban environment is dynamic, not static, and due to the intensified commercial, administrative, cultural and service activities, there is a movement that happens to the population during the day in the urban centre, and the destination is the commercial sector in all its joints in order to meet their daily requirements, this leads to traffic congestion. | Ok       |
| 2-D  | Increase in the population's desire to easy access to the city centre for various cultural functions and facilities, and optimism about improving the city's future services. | None     |
| 3    | **Other indicators can be tested**                                                       |          |
| 3-A  | Low level of education.                                                                  | None     |
| 3-B  | Change in customs and traditions and transformation in the pattern of construction.       | None     |
| 3-C  | Diversity of visitors.                                                                  | None     |
| 3-D  | Use of handicrafts.                                                                     | None     |
| 3-H  | The differences in volume of population movement between night and day.                  | None     |

The source: The Researcher
Figure 3. Buildings condition in studied area.
Source: by research

Figure 4. Land use in studied area.
Source: by research
11. Conclusion

1- The case study has primary and secondary significant indicators of the gentrification process, which means that many precautions should be taken in consideration, when dealing with the future implementation and planning processes.

2- The existence of some other indicators that must be taken into account, including the low level of education, as it refers to the level of awareness and behaviour and dealing with
archaeological values, as well as change in customs and traditions, where some people tend to live next to religious buildings for ideological reasons. It will show whether the region is very popular where people tend to stay or not, which means greater development.

3- The use of handicrafts that reflect the cultural identity of the region and distinguish them from other regions.

4- The difference in movement and congestion of the number of people between day and night, indicating the desire of various people to visit the region for various reasons such as trade, purchase or treatment.

5- The test of the results of the gentrification indicators answered all the doubts about whether the AL-Krad and AL-Taees neighborhoods can be with gentrification process or not; which with related to main indicators, the result of the analysis was agreed to all the initial indicators, which means that the region is prepared for gentrification.

6- Where the camp enjoys very high architectural values dating back to the Islamic era, characterized by unique architectural style and large buildings.

7- This area has some dilapidated buildings, as well as a high proportion of tenants due to the nature of the business that needs many facilities such as storage areas, galleries and stores.

8- To date, the area has been a major gateway to the duty stations as it is located in the centre of Hilla City.

9- With respect to secondary indicators, was the result of the analysis; The area is a magnet for many people, and its families tend to change the use of their buildings to urban facilities to ease and attract investors, such as urban culture centres, hotels, restaurants, cafes and medical complexes.

12. Recommendation

The current study recommends the following:

1- Spread awareness and culture among the inhabitants of the heritage areas in order to preserve the urban and cultural heritage.

2- Activating legislations and laws that will preserve the cultural heritage.

3- Encourage capitalists to develop commercial and residential establishments within the criteria that preserve the heritage of the region.

4- Provide the necessary support to the residents of the region by the public and private sector in order to raise the economic level and thus, develop the region.

5- Conduct further studies using other gentrification indicators.

6- Involvement of international organizations to register some of the heritage areas in the studied area within the World Heritage List for maintenance and preservation.

References

1. Atkinson Rowland 2003 Introduction: Misunderstood savior or vengeful wrecker, Urban Studies, Vol. 40, pp 2343–2350

2. Hamnett C 1984 Gentrification and residential location theory: review and assessment in Geography and the urban environment (Journal), Vol. 5, pp. 283-319
3. Doucet B 2009 Living through gentrification: subjective experiences of local, non-gentrifying residents in Leith, Edinburgh. Journal of Housing and the Built Environment, Vol.24, No.3
4. Atkinson Rowland, Maryann Wulff, Margaret Reynolds and Angela Spinney 2011 Gentrification and displacement: the household impacts of neighbourhood change for the Australian Housing and Urban Research Institute Southern Research Centre Swinburne-Monash Research Centre
5. Sassen, S. 1991 the Global City: New York, London and Tokyo. Princeton, NJ: Princeton University Press
6. Glass Ruth 1964 Introduction: Aspects of Change, In Centre for Urban Studies (ed) London: Aspects of Change, MacGibbon and Kee
7. Hackworth J and Smith N 2001 The changing state of gentrification. Tijdschrift voor
8. Beauregard R 1986. The chaos and complexity of gentrification. In: Smith, N. and Williams
9. Lees L 1994 Rethinking gentrification: beyond the positions of economics or culture
10. Carpenter J and Lees L 1995 Gentrification in New York, London and Paris: an international economist en Social Geografie 94 (4), pp 464–477
11. Ley 1996 The new middle class and the remaking of the central city. Oxford, UK: Oxford
12. P. (eds) Gentrification of the city. Boston, MA: Allen and Unwin, pp 35–55
13. Sassen S 1991 The global city. Princeton, NJ: Princeton University Press
14. Shaw W 2005 Heritage and gentrification: remembering the ‘good old days’ in postcolonial
15. Smith N 1982 Gentrification and uneven development. Economic Geography
16. Sydney. In: Atkinson, R. and Bridge, G. (eds) Gentrification in a global context: the new urban University Press
17. Van Criekingen M and Decroly J M 2003. Revisiting the diversity of gentrification: Vol.58
18. Malik Jamal Hamzah and Mustafa Abduljalil Ebraheim 2018 Using collective memory to build authenticity case study (al-Adhamiya and al-Kadhmiya districts in Baghdad-Iraq), International Journal of Civil Engineering and Technology (IJCIET), Volume 9, Issue 10, October 2018, pp. 1–11