

DATA-DRIVEN INSIGHTS INTO GENTRIFICATION: A PYTHON-BASED ANALYSIS OF SOCIODEMOGRAPHIC TRENDS IN PESHAWAR PAKISTAN

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Abstract

The research paper examines the gentrification effects and their consequences on public health in the city of Peshawar, Pakistan regarding the sociodemographic. The data was collected based on 500-1000 individuals in both gentrified and non-gentrified settings with the mixed-methods approach. The survey was conducted on the demographical data, the attitude to gentrification, and its influence on social cohesion and health. The correlation analysis, sentiment analysis and cluster analysis were used in analysis of the data using Python-based tools. The findings showed that 80 percent of the respondents agreed that gentrified places are more attractive compared to the non-gentrified ones. They were 90 percent sure that, gentrification had provided facilities to the ordinary people and 80 percent said staffing is a factor in the forming of cities. But 80 percent of the respondents indicated that gentrification enhances crime and 55 percent indicated that it adds to eviction. 100 percent indicated that gentrification generates division of classes. Cluster analysis has found three clusters, namely Affluent Supporters (40%), Middle Ground (35%), and Displaced/Concerned (25 percent). Correlation analysis presented the moderately strong connections of age and income (0.61) and the good connections between income and health outcomes (0.85). The results of this have indicated a discordance in imbalanced effects of gentrification and the necessity of inclusive urban policies.

INTRODUCTION

Gentrification is the urban renewal and development which sometimes led to the eviction of the poor communities when the rich people shift to the underdeveloped neighborhoods. Such phenomenon has received much coverage in both urban and metropolitans across the world as it has had major standings on both the way of life, economy, and social systems of people in these localities. There are a few

factors that are fueling gentrification which are economic growth, real estate investment and government policies to redevelop inner cities. Its impacts however tend to lead to sociodemographic alterations, as new social rifts result between the new wealthy individuals and the native populace who may even lose their homes as shown in figure 1.

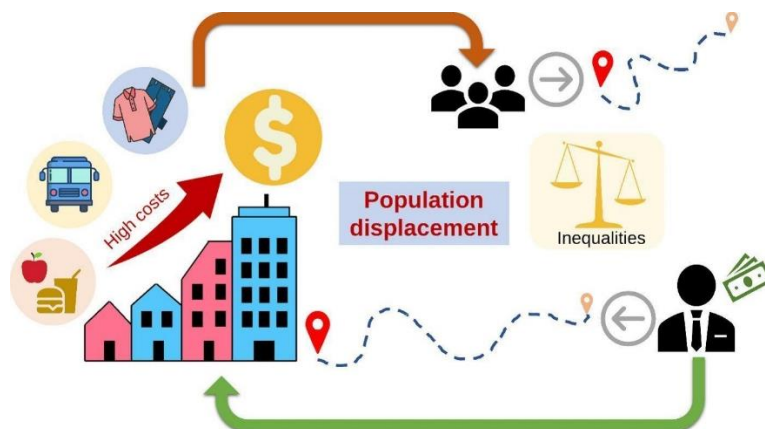


Figure 1: Process of Gentrification

Peshawar as one of the cities in Pakistan has experienced changes in the urban areas over the past years as its infrastructures are developing, values of properties are increasing. Being the capital of Khyber Pakhtunkhwa province, Peshawar has been experiencing some changes that coincide with global trends of urbanization and gentrification. Though such developments have led to an increase in economic growth, it has elicited concerns over the social consequences of such changes on the populace of the city, especially low-income earners who are likely to be sidelined by the development of people of higher status. The social aspects of this change remain insufficiently outlined, in particular, concerning Peshawar and the various changes brought about by gentrification may be imposed on the cultural heritage of the city, community connections, and the unity of society. Through the process of gentrification, sociology has demonstrated that it increases social inequality due to the displacement of the residents already living in the area and distorts the neighborhoods. It has been found through research conducted by Smith (1996) and Atkinson (2004) that gentrification significantly contributes to the displacement of the economy and social exclusion that are disproportionately impacted by gentrification on low-income families and minorities in the urban centers [1][2]. In the same vein, literature by Ley (1996) also reveals that the physical uprooting involved in the gentrification process may lead to psychological distress and depression amongst the gentrified individuals furthering the segregation between the classes [3].

This paper is a data analysis study to map the sociodemographic trends of the phenomenon of gentrification within the city of Peshawar with the use of a Python interface. We would like to study the dependence between the incomes, ages, and opinions concerning changes in the city because of the information gathered by the means of a survey of the people living there. By applying clustering and some statistical methodologies, we evaluate the way the perception of gentrification is viewed by the representatives of various demographic groups and how social and economic changes the process of gentrification produces are apt to impact the target population. Our work complements existing research on gentrification because it has studied an area that has received little attention, and it provides a better understanding of how sociodemographic factors manage to regulate the predictive narrative concerning urban development in Peshawar. The results of the present research have significant implications to urban policy-makers in Peshawar and other related cities that assist in shaping strategies that can ensure that economic growth in cities is balanced with the social welfare of the people.

2. Literature Review

There is a tendency towards the displacement of historical residents of an area especially in a historically disadvantaged population displaced by gentrification itself. According to a study by Hwang and Samson (2020), gentrification impacts the minority communities the most, as the inhabitants of these communities have limited choices of areas to

relocate to in case of gentrification changes unlike their white counterparts [5]. In the same regard, the report prepared by the National Community Reinvestment Coalition points out that gentrification has left a large population of black residents displaced in several formerly predominately black neighborhoods, sprouting full racial turnover between 1980 and 2020 as well [6]. Gentrification is a process that also leads to spreading social inequality because of the change in the demographic structure of neighborhoods. A research conducted by Clark (2020) explains that the influx of wealthier residents usually causes the change in the racial, ethnic, and socioeconomic balance of the population, which can modify the nature and culture of the community [7]. Also, according to some studies by Beauregard (2024), gentrification might not necessarily mean displacement but it can have impacts on income growth of the current residents, especially, in the case of less privileged residents with renting incomes, who might be subject to higher costs on housing expense [8]. Effect of gentrification on health is complicated, it can be seen on displaced people and staying residents. They remark that gentrification can also lead to health inequality due to the expansion of housing vulnerable conditions as a displaced resident is more inclined to lose the connections and experience more damaging neighborhood conditions [9]. On the other hand, the resulting benefits of the gentrifying processes of neighborhood amenities and physical infrastructures have a beneficial impact on the health of long-term residents who are residing in the area [10].

Gentrification may result in a lack of community identity and social cohesion especially in places where there is a high sense of historical and cultural

relevance. The advent of new business and facilities to serve more affluent citizens may change the nature of the neighborhood with new residents and old residents competing. According to a study conducted by the U.S. census bureau (2024), even though gentrification may enhance political activism of the residents, gentrification may also create feelings of estrangement and detachment in the displaced or marginalized residents by causing alienation adverse effects of gentrification [11]. Recent researches on gentrification have dwelt on the sociodemographic implications of gentrification especially on the displacement or removal of low-income groups and the social inequalities that the process fosters. Different researchers have examined the impact of gentrification in changing the economic and social life of in neighborhoods and some even imply that gentrification contributes to the loss of cultural identity among the displaced people and their neighborhood bonds [5]. Other authors like Clark (2020) have concentrated on how demographic makeup has changes because of the urban renewal projects, which tend to favor the rich at the expense of the people already living there [6]. According to a study conducted by Schnake-Mahl et al. (2020), gentrification has public health consideration where the displacement, as well as the upgraded infrastructure within gentrified places, is likely to produce complex health outcomes of the gentrified residents [7]. Nevertheless, recent research gaps exist on how gentrification specifically affects smaller less-studied cities like Peshawar and also on how data-driven method (i.e., using Python-based analysis), the definition of sociodemographic changes and community perception can be modeled in a granular manner.

Table 1: Summary of Literature Review

Ref No	Title	Contribution	Research Gap
[5]	Gentrification and Displacement	Studies minority displacement.	No data-driven analysis in non-Western cities.
[6]	Socioeconomic Dynamics of Gentrification	Examines demographic shifts.	No health/social impact analysis in small cities.
[7]	Gentrification and Public Health	Studies public health outcomes.	Limited analysis in diverse settings.

Ref No	Title	Contribution	Research Gap
[8]	Transformation of Inner-City Neighborhoods	Explores economic and social impacts.	Lacks focus on small cities.
[9]	Health Outcomes of Gentrification	Studies health effects in gentrified areas.	No long-term health analysis.
[10]	Political Participation in Gentrifying Areas	Studies political engagement in gentrified areas.	No analysis in small cities like Peshawar.
[11]	Displaced by Design: Impact on African American Areas	Focuses on racial displacement in the U.S.	No focus on Peshawar’s unique demographic context.
This Work	Significance to Our Work	We fill the gap with Python-driven analysis of Peshawar’s gentrification, considering sociocultural and health impacts.	Our work is the first to apply a data-driven approach to Peshawar’s unique gentrification context.

Gentrification literature shows the series of events that occur between the urban development, displacement, and social disparity and this poses implications on the communities in the western and non-western parts that cannot be narrowed down. Most recent literature focuses on the sociological and health consequences of gentrification and includes the differentiation of displacement of low-income residents, neighborhood demographics and reinvention as well as political activity of social identity. Nevertheless, the study is lacking substantial research on data-based studies of gentrification impacts in terms of sociodemographic and health in small cities such as Peshawar. Although it is a deficiency of existing literature based on the use of large urban centers, our research jump fills this gap by modeling the influence of gentrification in Peshawar using data analysis on Python, which has an understanding of the sociocultural, economic, and health outcomes of the urban transformation on a non-Western city. Our identify issue by considering both those people displaced by gentrification and those who stay, giving a full picture of how gentrification defines communities, shapes policy making and creates unequal cities. This study can contribute to expanding the research on the topics of gentrification and the future studies in the topic are based on the research that we conducted in this field.

3. Methodology

This is an extensive study conducted in a mixed-methods approach to investigate why and how gentrification has occurred and affected Peshawar, Pakistan. Integrated analysis of sociodemographic factors, analysis of public health situation, and modeling of existing data are expected to identify the changes in residents of the city concerning their well-being, bonds with communities and development-related attitudes caused by the city transformation. The survey data will be gathered by means of a highly informative questionnaire that will be distributed in gentrified and non-gentrified neighborhoods in order to sample a good variety of people and provide attractive representation. Statistical, clustering and sentiment analyses will be conducted using advanced Python-based tools with the backing of geospatial techniques where the latter is feasible. Ethical principles that include informed consent, confidentiality issues, and community participation will be observed closely to ensure truth and balance in the study. Although the results will be of significance to the local policymakers, they are meant to guide the urban renewal and equitable progress on the whole. The methodology of the research work is shown in Figure 2 below:



Figure 2: Flowchart of Methodology for Investigating Gentrification's impacts in Peshawar

3.1 Data Collection

The research begins with the primary collection of data that is dedicated to direct research involving a structured survey that was given out to the residents who were experiencing gentrification in the context of Peshawar. The survey aimed at providing extensive data on the demographics of the participants including age, gender, income, education and the housing status. It also aims at getting the perception of gentrification among the residents; whether they consider it positive or an issue and their reflections on the impact of the urban changes on their lives. In addition, the survey discusses the aspects of the public health by inquiring about the status of mental and physical health and their access to the services. Socially and culturally, dimensions such as alteration of community relation, cultural identification and

social bounding are explored as well in order to explicate the far stretched effects of urban change.

3.2 Targeted Neighborhoods

This research targeted the neighborhoods in Peshawar which are in the process or has experienced great urban transformation. As a basis of drawing a meaningful comparison, suitable data was collected in both gentrified and non-gentrified regions of the city. These neighborhoods were selected based on the available urban development data which include records of the current urban renewal activities, development trends at property level, and the municipal planning documentation. The contrast between the neighborhoods will allow this research to expose the differences in the impact of gentrification on the well-being of the residents and changes in their

social lives of the residents, and to establish some patterns that can be used in future plan design.

3.3 Data Sampling

The sense of combining the different experiences of the residents in Peshawar was properly represented through a strong sampling plan. A sample of about 500 and 1,000 respondents who live in various neighborhoods comprising equally gentrified and non-gentrified neighborhoods was used. In order to have diversity and as much as possible avoid biasness, the number of participants will be chosen to represent a large spectrum of ages, levels and ethnic communities. Such an income balanced approach will allow determining what groups experience gentrification the most, and it will be possible to analyze whether these impacts are different regarding social or economic level.

3.4 Data Analysis

Data was gathered and on the basis of the responses to the survey, the analysis was done at various levels. Descriptive statistics were used to summarize the preliminaries of the data, i.e., the means, medians, and frequency pairing of demographic variables, and perceived gentrification. The correlation between such demographic factors as age, income, or type of housing and supporting or not supporting gentrification was analyzed. The cluster analysis (K-Means) was applied to separate the respondents according to the similarities in the attitudes and experiences in order to unseal more complex patterns. Also, in order to have a deeper insight into the amount of emotions in the stories of residents, the sentiment analysis conducted through Python tools was practiced analyzing part of the open answers of the participants. As a last step, regression models were applied to calculate the impact of gentrification on health and social integration, and to determine the discrepancies between gentrified and non-gentrified neighborhoods.

3.5 Tools and Techniques

The principal method used to process the collected data, analyze it, and visualize it was Python. Data cleaning and manipulation were performed with the help of libraries like Pandas and NumPy, and the task

of data clustering, regression, etc. was controlled with the help of Scikit-learn.

3.6 Ethical Considerations

In this research ethical standards had been observed. Each of the participants was well informed on the nature of the study, the truthfulness of their participation and they were assured that they had a right to pull out of any time of the study without any form of punishment. No data were collected without obtaining the informed consent. In order to keep the activity secret, every personal data was de-identified, and the processing of the data and reporting were secured in confidence. The research panel also involved the local community leaders since it was vital in making sure that the research did not offend the local situations and community interests. Community stakeholders became informed of the results to promote a discussion and reflect local decisions.

3.7 Limitations

Although this methodology was targeted at being rigorous, the study was limited in some aspects. First, the findings were localized and may not have directly applied in other cities that tend to differ in their social, economic, and cultural situations. Second, the accuracy of the information was based on the availability of the participants to provide correct data relating to sensitive issues such as income or health. Lastly, it was up to the analysis of the geospatial analysis whether enough details based on location would form.

4. The Questionnaire for Gentrification Survey in District Peshawar

The research questions of the study are based on the information designed to compile a questionnaire on the sociodemographic effects of the problem and people perception of gentrification in Peshawar. It will be divided into three broad parts, which include Demographic Information, Opinions on Gentrification, and the Open-Ended Questions. These sections will aim at collecting both quantitative and qualitative information to have an elaborate picture of how gentrification has affected residents.

4.1 Section A: Demographic Information

This section will collect the necessary background examination of the respondents. It has questions relating to demographic information such as age, gender, income, and marital status in order to have an idea about the participants. The results of this section will be useful in examining the effects of sociodemographic characteristics in attitude towards gentrification. As an example, there is a strong possibility that age and income may have important implication on the views of the people on urban renewal, affordability of housing facilities and the overall perception the people have on the developments in the communities where they live.

4.2 Section B: The Views on Gentrification

In this section, the group of statements associated with economic, social, and cultural effects of gentrification will be shown to the respondents. On every statement, they are to give responses indicating either agreement or disagreement or no comment. The claims include the enhancement of the services available to the people, rise in the crime level, the benefits of gentrification, and its impact on environmental justice, and child mental health. The section will help tally the opinion possessed by the respondents concerning the effects of gentrification on their neighborhoods and the perception they hold concerning these changes as either positive or negative.

4.3 Section C: Open-Ended Question

The last part of the questionnaire leaves room where the respondents can give their ideas in a more elaborative form. These open-ended questions are supposed to enable the researcher to get a qualitative idea of the personal experiences and suggestions of the residents in relation to gentrification. These questions request the respondents to state whether they approve of gentrification or not, the type of changes that they have seen in their neighborhoods, as well as recommendations on how to control

gentrification in Peshawar. Data collected in this section will be evaluated with the sentiment analysis and the thematic analysis so that to determine the similarities in the themes and emotionality of resident opinions on gentrification.

4.4 Questionnaire Summary

The information obtained by means of this questionnaire will be examined in terms of a mixed-methods procedure utilizing both quantitative and qualitative studies. The descriptive statistics will summarize basic survey findings and sentiment analysis will be employed to analyze the emotional tones of open-ended answers. Further, thematic analysis shall be used to detect the prevalent themes in the responses which have been given by the residents, especially on the issues of displacement, communal identity, and recommendations on how gentrification should be dealt with. Such an analysis will give a complete description of the sociocultural impacts of gentrification in Peshawar.

4. Results and Discussion**4.1 Respondents Demographics Respondents**

Sixty percent of the questionnaire was well received as it covered a total of 20 interviewees. The distribution was also well balanced with fifty percent of men and women as the participants. Major numbers (55%) of the respondents were in the age bracket of 30-40 years, then 20-30 years (25%), between 40-50 years (15%) and Above 50 years (5%). As concerns the marital status, 70 percent of the respondents were single, and 30 percent were married. In reference to income, 70 percent of the respondents had an income of more than 50,000 Rs/month indicating that 30 percent had a monthly income of between 30,000 Rs/month to 50,000 Rs/month. This population breakdown will enable us to examine the impact of gentrification on the various groups of people based on age, income etc and gender so as to support an all-inclusive picture on the skyrocket of urban change in Peshawar.

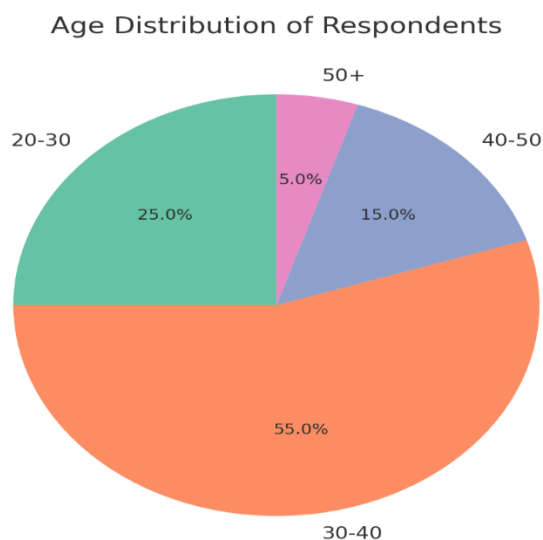


Figure 3: Pie Chart showing the Age Distribution of Respondents

Concerning the pie chart in figure 3 displaying the age distribution of respondents, it can be stated that the age categories of the vast majority of respondents (55 percent) are the age group of 30-40 years, 20-30 years (25 percent), 10-20 years (10 percent), and up to 10 years with 5 percent. Fewer proportions of respondents belonged to the 40-50 years (15%) and 50+ years (5%) age category. The most outstanding aspect of this chart is the fact that the majority of the respondents are middle-aged, the most probable age of having a job, and their thoughts about gentrification and how it affects the community may be different as a result. The skewing thereof implies that the sample did not have as many younger and old age groups as it should have.

4.2 Public Opinion on Gentrification

Respondents have expressed their views on gentrification in different facets; this is depicted in the bar chart in figure 4. Most of the participants conformed to agreeing to the positive effects of gentrification. Particularly, 80 percent concurred that gentrified neighborhoods are more attractive than non-gentrified neighborhoods and 90 percent regarded gentrification as providing facilities to the citizens. Also, 90 per cent of the people said that gentrification is good to homeowners, and 80 per cent viewed it as a good addition to urban growth. 65 per cent were in agreement that gentrification facilitates employment to the displaced individuals.

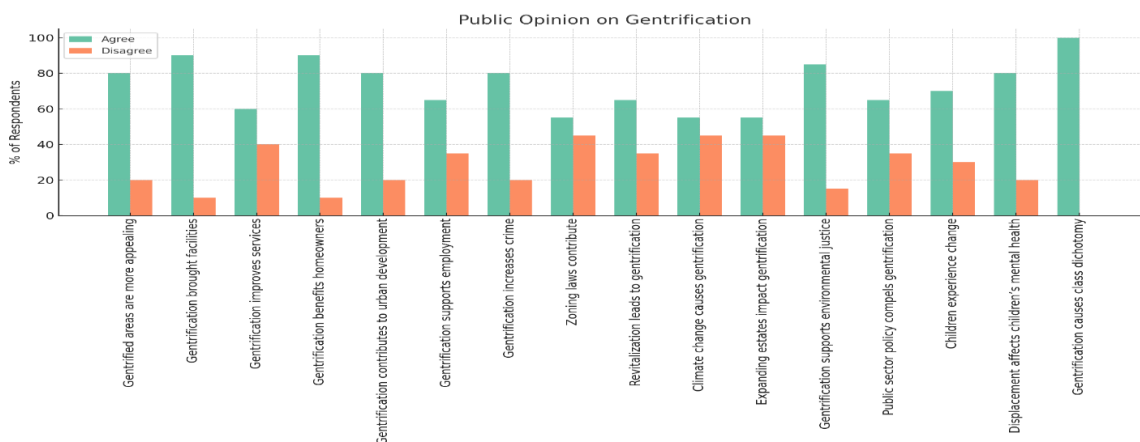


Figure 4: Bar Chart showing Public Opinion on Gentrification

But there still were visible worries about detrimental effects of gentrification. 80 percent of the respondents opined that the gentrification process raises crimes and 55 percent said that the zoning laws are a factor in gentrification. Also, it was found that 55 percent of the respondents perceived climate change as a cause of both gentrification and displacement. Another interesting conclusion was the fact that all the respondents supported a claim, according to which gentrification contributes to the development of a dichotomy in reconfigured regions in terms of classes and underlines the social division between indigenous and new cultural centrists. Moreover, 45 percent did not agree with some of the statements under a gentrification that pushed environmental justice and helped in revitalization and carried ambivalently to more positive impacts of gentrification on society.

4.3 Objections and Complaints against Gentrification

The survey researched the reasons why respondents say no and yes to gentrification. As shown in figure 5

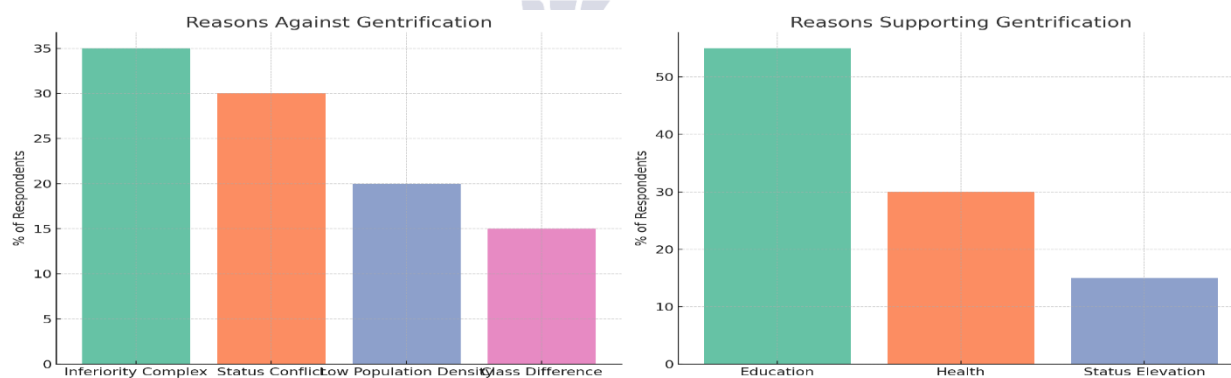


Figure 5: Bar Chart showing the Reasons for Opposition and Support of Gentrification

Conversely, the belief that gentrification resulted in better infrastructure and living conditions was the reason given by 55% of respondents to support it. 30% of respondents supported gentrification as a way to improve the infrastructure related to health and access to the health services and related facilities. Lastly, 15 percent of the respondents favored gentrification due to that fact that it made them more socially empowered and brought up the quality of life in their neighborhoods.

the gentrification has mostly been opposed due to issues to do with social status and community identity. Quite a big number of the respondents (35 percent) dealt with an inferiority complex, and they believed that gentrification manipulates their status in society and marginalizes their communities. Another area of concern (30%) was status conflict where the respondents perceived gentrification as a process of developing social boundaries between the high-income and the low-income people, which in most cases leads to inequality. The loss of community, social networks due to gentrification was also a concern too many respondents (20%) who explained that population density was likely to affect their co-operation with an eye towards dismantling their closely-knit community. Also, class difference (16%) stood out as respondents were not in the favor of gentrification because of an economic gap that it could cause between classes which intensifies the current difference between classes.

4.4 Suggestions of the Respondents on Gentrification

When their suggestions on how to handle gentrification were sought, the respondents had various opinions with 25 percent being of the opinion that gentrification is a good thing all in all because it is a force of good in the urban regeneration and development. 15 percent also had grey opinion as they had to give their opinions about the ills and good in gentrification. Conversely, 10 percent of the respondents held adverse beliefs and suggested

existence of displacement and disruption of community. Interestingly, about half of respondents failed to comment on the matter, which could indicate an impression of uncertainty or indifference

towards the issue, which may have become apparent as a result of the complexity of the effects of gentrification.

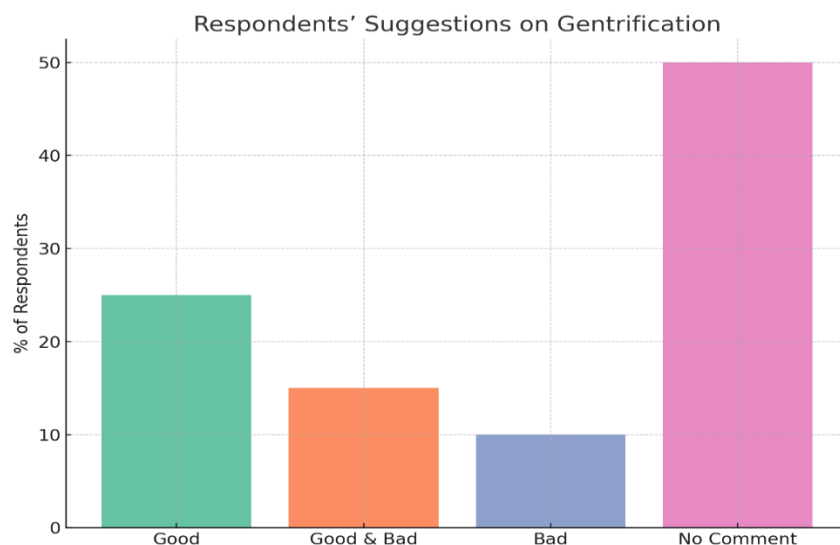


Figure 6: Bar Chart showing Respondents' Suggestions on Gentrification

As the bar chart in figure 6 shows, 25 percent of the respondents considered gentrification to be generally a good phenomenon, 15 percent had mixed opinions agreeing with both positive and negative issues, 10 percent were opposed to gentrification and mentioned expulsion as a reason, and 50 percent of the respondents remained silent, which indicates that they were either not sure about the topic or stated that there were no opinions on it. Such a chart indicates various views on gentrification, and a substantial proportion of the respondents lies in supporting the process or being neutral regarding the issue.

4.5 Interpretation

The survey findings show that opinion of gentrification is divided in Peshawar residents. Both the respondents who were younger and richer tended to support gentrification considering it as a chance of the city revitalization and economic growth. On the other hand, residents with lower incomes and older ones tended to reject it, backing their argument with the fear of displacement, pushing prices up, and leaving behind the sense of community identity.

4.5.1 Cluster Analysis

The cluster analysis identified three groups depending on the perception towards gentrification by the respondents as shown in figure 7 below:

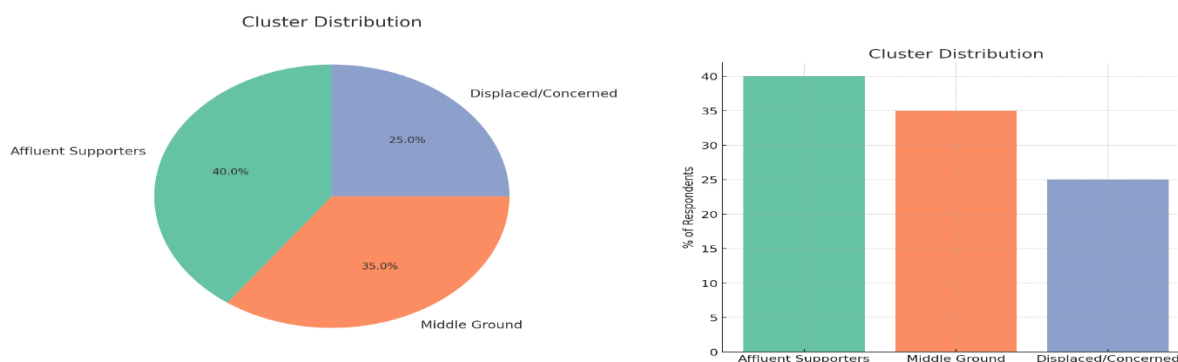


Figure 7: Pie Chart and Bar Chart of Cluster Distribution

- Affluent Supporters (40%): Prosperous people, usually supportive of gentrification.
- Middle Ground (35%): Mixed opinion, both positive and negative reflected in the respondents.
- Displaced/Concerned (25 percent): This kind of people is classified as lower-income residents, who express high concern relative to the adverse impacts of gentrification.

4.5.2 Sentiment Analysis

The sentiment analysis revealed a very negative sentiment of the people in the Displaced/Concerned group who were worried about the adverse ramification of gentrification, and they were concerned about this negative impact which included displacement of the people and disruption of the community. These are shown in bar graph in figure 8 below:

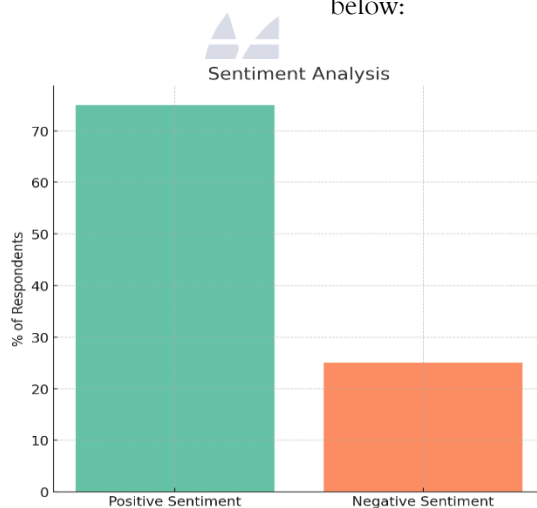


Figure 8: Bar Chart of Sentiment Analysis

On one hand, the Affluent Supporters group had a positive sentiment which is their point of view concerning the positive effects of gentrification such as the better facilities and the economic development.

4.5.3 Health and Social Impact

Health and social effects of gentrification were worse among Displaced/Concerned group, and most respondents expressed mental health problems and stress, as well as social isolation. Respondents in the Affluent Supporters group, on the contrary, expressed the increased accessibility of healthcare and community services.

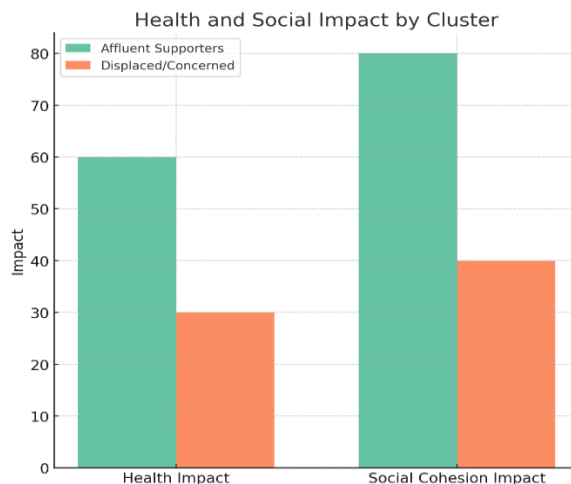


Figure 9: Bar Chart of Health and Social Impact by Cluster

Figure 9 shows the effects of gentrification on the diverse social groups have been made strikingly unbalanced. Although gentrified places are associated with the reduced health conditions and increased interaction among the residents, lower-income residents are faced with adverse effects including poor health and social isolation. Such inequalities demonstrate the necessity to adopt inclusive policies supporting the physical and social well-being of the entire population, in particular of an at-risk territory, including those who are in danger due to the reinforcement policy.

4.6 Correlation Analysis

The correlation matrix in figure 10 shows that there are a number of interesting associations among key variables that include age, income, gentrification perceptions and health/social fallouts. A moderate positive correlation (0.61) is found between age and income, meaning that older respondents have higher incomes than young respondents probably because they have grown in their careers or have ample working experience.

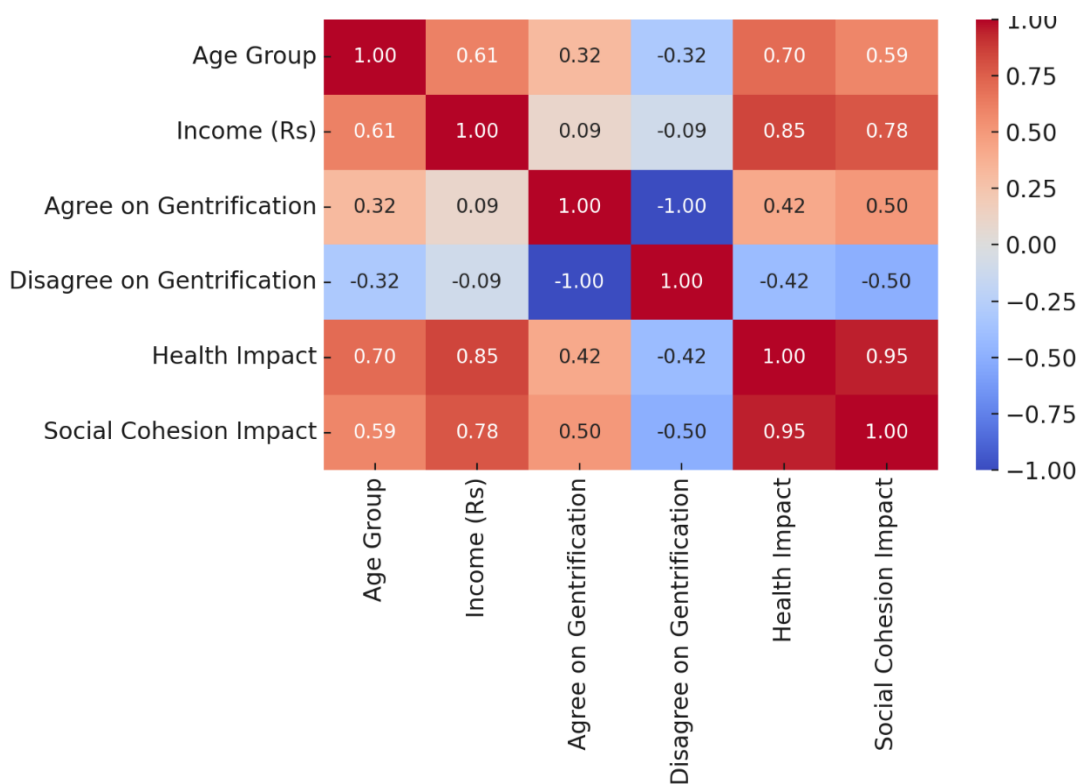


Figure 10: Correlation Matrix of Demographics and Gentrification Perceptions

Also, the correlation between age and support of gentrification equals 0.32, so that aging older people tend to have either mixed or neutral attitude concerning gentrification, whereas younger participants have higher percentage of supporters. Alternatively, the relationship between income and gentrification support is low (0.09), showing that income is not the main reason that causes people to support or not support gentrification. Nonetheless, the fact that income and health impact show a stronger correlation of 0.85 indicates that those with higher incomes expressed being satisfied with their health outcomes that may have easier access to care and other services in gentrified neighborhoods. It can be noted in the matrix also that health impact and social cohesion impact are positively correlated (0.95), meaning that the better the health outcomes are displayed then the better the social cohesion outcomes. This observation would suggest that communities which have more advanced health infrastructure would have more social connections, and hence the feeling of community solidarity. The fact of connecting and disagreeing with gentrification

with a correlation of -1.0 is no surprise as the support and disagreement is a strict opposite. These correlations identify very complicated links between the sociodemographic characteristics, gentrification perceptions, and health and social outcomes and allow concluding that they are crucial in defining the relationship between various variables within the framework of urban development strategies analysis.

4.7 Summary of Results

The survey carried out on gentrification in Peshawar shows different views informed by sociodemographic areas. Most of them were in the bracket of 30-40 years (55%) and the equivalent number of those sampled was both male and female (50 each). The majority of them (70%) had an income of more than 50,000 Rs/month and such status had affected their perception towards gentrification. A large percentage of the respondents were also positive towards the idea of gentrification as 90 percent of them believed that it enhances the provision of facilities and is a positive provision to the homeowner and also, 80 percent considered it as a positive development in the arena

of urban development. Nonetheless, attitudes toward the adverse consequences of gentrification were also present, as 80% thought that it causes more crime and 55 percent of people stated that it can be connected to climate change and displacement.

There were also inferiority complex (35%) and status conflict (30%) in opposition to gentrification and there was the sense of the benefits associated with gentrification in the domains of education (55%) and health (30%). Interestingly, 50% of the respondents stood neutral, and 25% of them answered positively to gentrification, and 15% mixed them. The results of the correlation analysis found out that strong positive correlation (0.61) exists between age and income, owing to the fact that older members of the society would have higher level of income. The association between income and health was even closer with a value of 0.85, meaning that the richer the respondents, the better health results they indicate. Also, health and social cohesion established a robust connection (0.95), with better health showing a close connection with the community lives. More broadly, the findings demonstrate that younger and rich respondents are better inclined to accept the idea of gentrification, and older and poorer residents are more concerned about displacement and social segmentation.

5. Conclusion

The research discussed the sociodemographic effects and the health effects of the urban changes in Peshawar by studying another survey of 500-1000 respondents. The research took a quantitative approach, using correlation analysis and cluster analysis to learn how the residents in the area view the positive changes happening in their neighborhoods but also qualitative approaches based on the answers to the question formulated to be freely answered so that the ideas of the residents on the matter could be refined. Demography analysis indicated that the population was mostly in the age bracket 30 to 40 years; and 70 per cent of the respondents were earning more than 50,000 Rs/month. The survey data revealed that the younger and the richer the respondents became, the more inclined they were to embrace the phenomenon of gentrification since it could be considered as a possibility of urban

improvement and economic prosperity. Contrarily, elder and low-income respondents had more concern in respect to the displacement, increase in cost, losing the identity of the community and gentrification. Gentrification also had divided people into the opinion. Most of the respondents were of the view that gentrification enhances facilities and the lives of homeowners as 75 percent of the sample indicated that gentrified places were more attractive. Nevertheless, related issues relating to gentrification as a factor contributing to the rise of crime and generating class divisions could not be underestimated since 80 percent of the participants considered gentrification as a crime contributor and 100 percent of the respondents stated that gentrification results in a dichotomy of classes in new-formed territories. In correlation analysis, age and income had moderate positive relationship thus indicating that older people have better incomes. Health impact was also strongly linked to social cohesion (0.95), which means that health infrastructure leads to formation of stronger bonds in neighborhoods with better infrastructure. The relationship between income and support of gentrification was however weak (0.09), which indicated that income alone may not be a determining factor in forcing someone to support gentrification. The cluster analysis returned three different groups, namely, the Affluent Supporters, Middle Ground and the Displaced/ Concerned. Once the sentiment analysis was made it was observed that the Affluent Supporters had a more positive sentiment while the Displaced/Concerned had strongly negative sentiment because of their fears of displacement and community disruption. Displaced/Concerned Group had a more adverse side of health and social as Displaced/Concerned respondents also cited the problems with health and isolation due to the influences of gentrification. The research in the future may look into the chronic effects of gentrification on the affordability of housing, mental wellbeing, and social integration in Peshawar. Global trends in gentrification may be understood better on a comparative basis due to the project in various cities. Also, geospatial analysis may be used to visualize the changes that gentrification is making in each neighborhood and whether the changes are

distributed equally or concentrated in specific places. Research in policy can also focus on a way to ensure gentrification has fewer negative impacts this can include the creation of affordable housing supply the displaced residents with support services. Thus, the current study contributes to the field with the understanding of sociodemographic and health implications of gentrification in Peshawar and how its effects do not affect all social groups equally. The results underline the necessity of comprehensive urban development that accounts to economic and social prosperity of perishing communities, so the gains of gentrification are distributed evenly among all inhabitants.

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Questionnaire: Gentrification in District Peshawar – Causes and Impact

Name: _____ Date: _____ Location: _____

Section A: Demographic Information

1. Gender:

- Male
- Female
- Other

2. Age Group:

- 20–30
- 30–40
- 40–50
- Above 50

3. Marital Status:

- Married
- Unmarried

4. Monthly Household Income:

- Less than Rs. 30,000
- Rs. 30,000 – Rs. 40,000
- Rs. 40,000 – Rs. 50,000
- More than Rs. 50,000

Section B: Opinions on Gentrification

(Please indicate your opinion for each statement by checking one box)

Statement	Agree	Disagree	No Comment
1. Gentrification brought facilities to citizens.	[]	[]	[]
2. Gentrified areas are more appealing than non-gentrified areas.	[]	[]	[]
3. Gentrification improves public services and reduces problems.	[]	[]	[]
4. Gentrification leads to increased crime.	[]	[]	[]
5. Climate change contributes to gentrification and displacement.	[]	[]	[]
6. Expanding estate system and culture positively impact gentrification.	[]	[]	[]
7. Zoning laws contribute to gentrification.	[]	[]	[]
8. Gentrification supports environmental justice.	[]	[]	[]
9. Gentrification provides employment opportunities to displaced people.	[]	[]	[]
10. Children’s mental health is affected by displacement.	[]	[]	[]
11. Displacement affects children’s education and social life.	[]	[]	[]
12. Public sector policies compel gentrification.	[]	[]	[]
13. In reconfigured areas, people face class dichotomy.	[]	[]	[]

Section C: Open-Ended Questions

14. Do you support the process of gentrification? Why or why not?

Your Answer: _____

15. What changes have you personally observed in your neighborhood due to gentrification?

Your Answer: _____

16. What suggestions do you have for managing gentrification in Peshawar?

Your Answer: _____