Impact of Poverty Level on Settlement Problems and Patterns: A Case Study of Jhang, Pakistan

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Abstract

Poverty is a multidimensional dilemma, and it elicits severe impacts on people's lifestyles. The present study identifies the impact of poverty on settlement problems and settlement patterns in the study area and their correlation with poverty. Primary data was collected through a pre-designed questionnaire using a purposive sampling technique from the six nearby sites of Jhang city, namely Pakkywala, Chundharwana, Daduana, surrounding abodes of the general bus stand, Chak Janobi Jhang, and Satellite town. For this purpose, 400 male respondents were selected using a convenient sampling method. The data analysis is done in SPSS 17 by applying descriptive statistics and Pearson correlation (bivariate method). Results of the study found that poverty is the core reason for multiple settlement problems of the inhabitants, as 93.8% agreed that low income is the cause of settlement problems. The settlement problem also caused homelessness and subsequent insecurity for the majority of the respondents (90.8%). The joint family system was also responsible for many settlement problems, as agreed by over 72% of respondents, similar to early marriage (83.5%). The hiking property rates in the study area also created settlement problems (90.1%) and increased crime rates (85.2%). Settlement problems also intensified due to respondents' inadequate land (84.8%) for housing; therefore, most lived in mud-made tiny houses (83.5%). Due to acute poverty, the respondents' settlement patterns were dispersed (35.5%) and irregular (35.3%). Correlation analysis also verified that the level of poverty has a highly significant impact on settlement problems and patterns.

Keywords: Poverty, Settlement Problem, Settlement Pattern, Inadequate Land, Jhang.

Introduction

Poverty has severe impacts on people's lifestyles, eating habits, and thoughts. It is a multidimensional problem in many developing and less developed countries, so poverty is still counted as a global problem (Ram, 2020; Santos et al., 2019; Liu & Li, 2017b). The multidimensionality of poverty involves expenditure or income and other dimensions such as health, education, social status, and leisure (Asselin, 2002; Reyes et al., 2004). Poverty can be defined in many ways. Still, generally speaking, it means needing more resources or money, and the individual cannot pay for his necessities like bread and butter and home. It results in poor

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education and skills, poor health, ignorance, and inability to make a living. The World Bank first estimated the utter poverty stroke as $1 per day in 1990. In 2005, after widespread studies, the World Bank defined the quantity of global poverty stroke: extreme poverty as living below the United States, 1.25$ per day, and modest poverty as under 2$ per day (World Bank & National Statistical Coordination Board, 2005). After several decades of continuous global poverty reduction, significant crises, and shocks resulted in around three years of lost progress during 2020-2022 due to the COVID-19 pandemic. Low-income countries, which saw poverty increase during this period, have yet to recover and are not closing the gap (World Bank, 2024).

Moreover, poverty eradication is the first of the United Nations' (UN) sustainable development goals (SDGs) of 2030 (UNDP, 2015). The effect of poverty on settlement dispersion and changes in land use is often underestimated. However, it has a particular impact on spatial patterns, dispersion of settlements, and alteration in land use (Xu et al., 2020). The existence of people is associated with human settlements. People learn, do jobs, create things, and abode in certain places that might be formal and informal, rural and urban, small and big. They consist of essential components of the whole environment vs. the built environment. In developing countries, the population of metropolitan areas is increasing dramatically. Basic and fundamental health, employment, and education opportunities are the chief factors that attract people worldwide to urban settlements. Increasing urban growth usually exceeds the local administrations' capability to deliver services and infrastructures, which raises urban poverty and shantytowns, particularly in developing countries (Duque et al., 2015).

A study conducted in the Shahid Ghorbani quarter (Mashhad, Iran) by obtaining data from 220 settled households concluded that almost 87% of these households were living lower than the absolute poverty line. Moreover, 20% lived below extreme poverty (Soltani et al., 2019). The impact of poverty on the living conditions of the people is evident. The majority of people with low incomes live in rented houses that are affordable to them. Their homes are overcrowded, and the facilities available in a house must be more sufficient. With increasing numbers of people, many other social and economic problems occur (Aluko, 2011).

In Pakistan, absolute poverty, which refers to the group of people or individuals deprived of income, schooling, standard of living, and other resources required to attain better life conditions, is widespread, mainly in rural areas (IPC, 2006). It is estimated that 59% of the population living in rural areas is ranked as poor, and among these, 29% is below the poverty line (Hameed et al., 2016). Moreover, in Pakistan, the share of poverty showed a substantial decline from 61.6% in 1998-99 to 21.5% in 2018-19. During the same period, urban poverty declined from 47.4% to 10.7% and rural poverty from 67.5% to 27.6% (Haque et al., 2021). The most responsible poverty factor is the irregular income distribution, which causes poverty, meager human development, inequality, etc. (Yasmeen et al., 2011). The incidence of poverty is higher among illiterate heads of households, as the study suggests that the literate heads of households were 82%, whereas 27% were illiterate poor household heads.

Similarly, the rate of poverty incidence is three times higher among the heads of households with less than that have not had ten years of schooling (Arif, 2000; Majeed & Malik, 2015). *Poverty* is a fundamental problem that deprives people of getting an education. Poverty indicates the level to which an individual remains without possessions. The resources comprise passionate, intellectual, economic, and physical resources, as poverty comes from a lack of resources, directly affecting the student's academic achievements (Khalid, 2014). Settlement is a major cause in how the public is placed in specific localities and why they start living or leaving those regions and localities. It helps the poor to reach the standard related to poverty in terms of

schools, places of employment, and movement (Lawal, 2011). Thus, the main objective of this research was to identify the impact of poverty level on settlement problems and settlement patterns in the study area and find a correlation between poverty and settlement problems and patterns.

Settlement Pattern in Jhang

A wide range of settlement patterns prevails in this area according to a family's living standard and available resources. The landlords live in huge Bungalows and *deras* (large houses with expansive courtyards) for public relations and political activities. In contrast, the poor people live in tiny homes, often made with mud bricks of two, three, and four *Marla*. The same is true of the condition of the quality of construction. There are most luxurious Bungalows with ultra-modern designs, and, on the other hand, poor people live in slums. The middle class mainly lives in 5 to 10 *Marla houses* with an average standard of material used in construction. They have e-infrastructure such as roads, streets, sewerage, electricity, etc. Proper w, water supply is almost yet to be available. People are using their own motor pumps and hand pumps. However, the quality of water available from these resources is not worth drinking. Filtration plants are also available at certain places, but filters should be maintained and replaced according to the recommended schedule (Sadiq, 2002).

Materials and Methods

Study Area

Jhang is among some of the ancient districts of the Punjab, Pakistan. Jhang in the local language (Punjabi) means a grove of trees. During the Indus Valley civilization, there were forests due to rivers, and their catchment area had soil nutrients for the growth of jungles. Jhang was invaded by Alexander the Great in the 4th century BC. In 1462 AD Mal Khan Chuchkana Sial founded the city of Jhang. The Sial tribe ruled over this city for three hundred and sixty years. The last ruler of the Sial tribe was Ahmad Khan (1812-1822). After his regime, the Sikhs became rulers. After the Sikhs, the British took over Jhang till independence in 1947 (Sadiq, 2002). The district Jhang was established in 1849. The first settlement in the district was approved in 1856. Jhang District is located between 30º55′57″ N latitude to 31º21′15″ N latitude and 71º43'0″ E longitudes to 72º35′15″ E longitudes and the elevation above sea level is 679 feet (Urban Unit, 2011). It is bounded by district Sargodha on the north, Chiniot on the northeast, Faisalabad on the east, Toba Teak Singh on the south-east, Khanewal on the south, and Khushab, Layyah, and Bhakkar on the west (figure 1).

Figure 1: Map of the study area
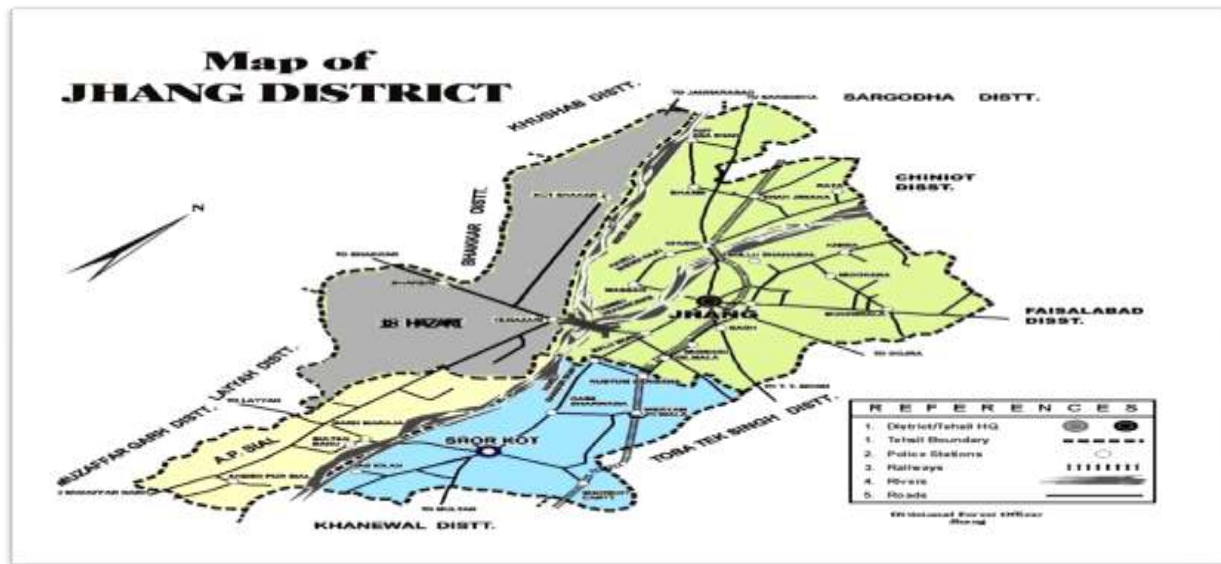
Source: GoP (2014).

Jhang has four administrative tehsils: Jhang tehsil, 18-Hazari tehsil, Shorkot tehsil, and Ahmad Pur Sial. It is nearly 25 kilometers from the Trimu Headworks, a place where the two rivers Chenab and Jehlum meet. There are 84 union councils in district Jhang, 66 of which are rural and 18 urban (PBS, 2010; Urban Unit, 2011).

Data Collection and Sampling Technique

The present research is based primarily on a field survey to obtain primary data related to poverty. This is a continuation of previous research conducted in the study area by Iqbal and Mohsin in 2020. This study is descriptive quantitative research based on a field survey to identify the selected socio-economic indicators of households' viz. low income, homelessness and insecurity, joint family problems, high crime rate, high property rate, early marriage issues, inadequate land for housing, utilities use and irregular and unplanned settlement patterns problems and their relation with poverty. Primary data was collected through a pre-designed questionnaire using a purposive sampling technique from the six nearby sites of Jhang city, namely Pakkywala, Chundharwana, Daduana, surrounding abodes of the general bus stand, Chak Janobi Jhang, and Satellite town. The reason for the selection of these sites is that low-income people inhabited these localities, and most of them were living below the poverty line. A sample of 400 male participants was selected for data collection regarding the availability of resources and poverty level.

Variable Description

The variables subjected to finding the association were 'level of poverty' as an independent variable or predictor. On the other hand, the dependent or explanatory variables chosen to determine association with independent variables were 'settlement problem' and 'settlement pattern,' which are assumed to be highly influenced by the inhabitants' poverty level. These variables were selected after keen observation by the researchers.

Data Analysis

The collected data is arranged and tabulated based on the variables under consideration. The data analysis was carried out in IBM SPSS version 17, and the relationship between different variables with the poverty level was examined. A four-point Likert scale (strongly agree to disagree strongly) was used to measure the respondents' responses regarding the levels of poverty and their associated problems. Descriptive statistics (frequency, percentages) and inferential statistics (Pearson correlation, bivariate method) were applied to get results. It is a valuable method to find the association between two variables with their corresponding significance (Mohsin, 2014).

Results and Discussion

Low Income and Settlement Problem

Income is the leading indicator of poverty level and determines people's ways of living. Table 1 indicates that 51% of respondents strongly agreed that low income is the leading cause of settlement problems in the study area. In comparison, only 2% of respondents strongly disagreed with the response that low income is the cause of settlement problems. A poverty and social impact analysis (PSIA) household survey conducted in major cities of Punjab also explored the fact that income levels directly impact settlement type and location (Urban Unit, 2008).

Table 1: Low income is cause of settlement problem

Response	Frequency	Percentage
Strongly Agree	204	51
Agree	171	42.8
Disagree	17	4.3
Strongly Disagree	8	2
Total	400	100

Homelessness and Insecurity

Poverty is also responsible for homelessness and subsequent insecurity in society. Table 2 indicates the respondents opinion regarding insecurity created due to homelessness. The results showed that the maximum respondents (51%) were strongly agreed that homelessness creates settlement problem and insecurity for inhabitants of study area. While the proportion of disagreed and agreed respondents' were 7% and 2.3% respectively. Homelessness is a social problem that exists in many societies and countries around the world. Alowaimer (2018) assert by the sufferings of homeless individuals and explored three very projecting factors which were poverty, starvation and aloneness. Elkins et al., (2023) find in the context of Australia that homelessness is basically concerned with the housing insecurity.

Table 2: Homelessness creates insecurity

Homelessness creates insecurity	Frequency	Percentage
Strongly Agree	204	51
Agree	159	39.8
Disagree	28	7
Strongly Disagree	9	2.3
Total	400	100

Joint Family System and Settlement Problem

The joint family system is visible and very common family system in many rural as well as urban households in Pakistan and also originates various socioeconomic and cultural problems. Table 3 elaborates a different aspect about the family system was studied that indicated the respondents' opinion regarding to settlements problems created due to joint family system. According to these results, 32% respondents were strongly agreed that joint family system leads to settlement problems in study area and 40.3% of the inhabitants were strongly agreed whereas, 22.5% respondents were disagreed to this statement. A study conducted in Quetta City (Pakistan) concluded that joint family system brings various changes in social family system and also caused housing problems (Ahmed et al., 2022). In rural vicinities of Pakistan, joint family system is common and a major way of creating conflicts and intolerable situation of different members of family. It disturbs the social strata and often leads to separation and chaos.

Table 3: Joint family system leads to settlement problem

Response	Frequency	Percentage
Strongly Agree	128	32
Agree	161	40.3
Disagree	90	22.5
Strongly Disagree	21	5.3
Total	400	100

Settlement Problem and Crime Rates

The crime rates are linked with poverty, social inequality and housing problems. Table 4 reflects the respondents' opinions regarding settlement problems are increasing crime rates in society. The results indicated that 45.7% of the respondents strongly agreed the opinion that crime rates are increasing in the society due the settlement problems and 39.5% of the respondents were agreed. Whereas, 9.5% of the respondents were disagreed regarding above mentioned statement. Moreover, the structure and pattern of settlement also has a close connection with crime that may vary in urban and suburban and peri-urban areas (Mátyás et al., 2024). It is found that the size and congestion of the settlement i.e. density of settlements and tightness of inner lanes associated with the settlement size creates problems of social protection and increased street crimes (Gunetilleke et al., 2004).

Table 4: Settlement problems are increasing crime rates in society

Increase in crime rate	Frequency	Percentage
Strongly Agree	182	45.7
Agree	158	39.5
Disagree	38	9.5
Strongly Disagree	22	5.3
Total	400	100

High Property Rate Caused Settlement Problem

Poor people are not able to afford to live in big luxury houses. The increasing rates of property augment the housing and settlement problems and evolve the *kachi basties* (illegal housing). Table 5 indicates the responses regarding to high property rate which is the major cause of

settlement problem. Majority of the respondents were agreed with this as 45.3% were strongly agreed with this statement while 44.8% were agreed. Whereas the disagreeing respondents were meager one, generally, the mounting rates of property in bigger urban centers of Pakistan are one of the leading causes of settlement problems that created illegal settlements around them (Urban Unit, 2008).

Table 5: High property rate is a cause of settlement problem

High Property Rate	Frequency	Percentage
Strongly Agree	181	45.3
Agree	179	44.8
Disagree	31	7.8
Strongly Disagree	9	2.3
Total	400	100

Early Marriage and Settlement Problem

Early age marriages (14-18) are a common phenomenon in rural areas of Pakistan especially among the females of poor and conservative families (Anwar et al., 2023). Table 6 indicates that the statement is absolutely true. In fact the verdict is given if we look at the result response of "Strongly Agree" and "Agree". Individually, 41% of the respondents strongly agreed to the issue, whereas, 42.5% of the respondents agreed to the statement. A smaller number of respondents' were disagreed and strongly disagreed with this notion with 10.8% and 5.8% share respectively. Numerous studies pointed out that early marriage of girls before the age of 18 years is a common practice in Pakistan and it causes various societal, cultural, health and as well as settlement problems (Shabbar and Manzoor, 2022; Muzaffar et al., 2018).

Table 6: Early marriage is one of the causes of settlement problem

Early Marriage	Frequency	Percentage
Strongly Agree	164	41
Agree	170	42.5
Disagree	43	10.8
Strongly Disagree	23	5.8
Total	400	100

Living of Poor in Low Standard /Mud Houses

Poor lives in mud made houses that are termed as *Kacha*. Table 7 elaborates the respondents' response regarding to poor' living in a low standard/mud houses owing to the poverty, main stream of the inhabitants i.e. 59.5% were strongly agreed while 34.5% respondents were agreed regarding to the above mentioned statement. The previous study conducted in Jhang district delves that 67% respondents' were resided in *kacha* (mud and straw made) houses, while 29.5% of respondents were housed in *pakka* (cement and concrete made) houses. Remaining 3.5% were abodes in semi-pakka houses (Iqbal and Mohsin, 2020). It is evidenced that poverty in rural areas of Pakistan is much high as compare to the urban areas therefore alleviation of rural poverty is unviable until the new opportunities created by the economy for new jobs creation, entrepreneurship chances and sustainable livelihood (Chaudhry et al., 2006).

Table 7: Poor are living in a mud houses

Poor live in Mud Houses	Frequency	Percentage
Strongly Agree	238	59.5
Agree	138	34.5
Disagree	19	4.8
Strongly Disagree	5	1.3
Total	400	100

Inadequate Land as a Source of Settlement Problem

Land is precious resource for making home and abode of humans but in many rural and peri-urban poor communities of Pakistan the land area is inadequate and insufficient to house a large number of family members. Table 8 shows that 43% respondents were strongly agreed that inadequate land is becoming source of settlement problem in the study area and 41.8% respondents were agreed with the above mentioned statement and 10% respondents were disagreed with the above mentioned statement. Previously, it is found that the primary causes of settlement issues are limited financial resources and inadequate land availability, as indicated by the overwhelming majority (111) of respondents who strongly agreed with this statement. Furthermore, there is a significant correlation between low income and land scarcity, highlighting their interconnected role in exacerbating settlement problems (Iqbal and Mohsin, 2020). Poverty is a prevalent issue in Pakistan, with numerous individuals experiencing prolonged periods of economic hardship. Rural areas are disproportionately affected, with the majority of the poor population residing in these areas (Mumtaz, 2006). In this context, the anti-poverty relocation and settlement program (ARSP) is a strategy to adapt poor farmers the urban livings with changing customary housing pattern and non-agrarian resettlement manner. This also boosts their households' savings (Zhou and Chen, 2023).

Table 8: Inadequate land is becoming source of settlement problem

Inadequate Land	Frequency	Percentage
Strongly Agree	172	43
Agree	167	41.8
Disagree	40	10
Strongly disagree	21	5.3
Total	400	100

Attitude towards Use of Utilities

The basic utilities like electricity, clean drinking water, and heating are essential and many poor communities are used them with different scales but the recent surge in power and other utilities tariffs makes it very problematic to enjoy these utilities. Table 9 shows response of the respondents when they were inquired about the sufficient availability of utilities resources. The results showed that 71% participants responded in yes, stating that they were having sufficient basic resources, but not able to utilized all of these due to high poverty levels. On the other hand 29% respondents replied in not sufficient, stating that they were not having the enough resources. The acquisition and utilization of daily life resources are based mainly on the food and energy basis in rural areas of Pakistan. The energy efficiency is crucial factor to foster the economic growth and development but in many poor households its affordability is becoming difficult due

to abolishing subsidies. This situation creates energy poverty among the rural households particularly and put burden on their resources and utilities use (Sohail and Fatima, 2019). Moreover, the previous research found that levels of poverty are very high in study area due to joblessness and high population growth (Iqbal and Mohsin, 2020).

Table 9: Attitude towards use of utilities

Use of utilities	Frequency	Percentage
Sufficiently	284	71
Not Sufficiently	116	29
Total	400	100

Patterns of Settlement

The patterns of houses in a settlement vary both in rural and urban areas of Pakistan. In rural and peri-urban areas the pattern of settlement greatly varies and these are mostly based on the functions of the settlement. The primary pattern of these settlements is mainly isolated dwelling (Mohsin, 2021). Table 10 indicates the respondents' opinions regarding the patterns of settlement in the study area. According to results, 35.5% respondents resided in dispersed/ scattered rural settlements and in an unplanned/un-surveyed settlement patterns each, 10.5% resided in Long-knot settlement pattern. The land tenure system, along with various location-specific factors in rural areas and risk management strategies employed by households, collectively play a significant role in maintaining rural residency and keeping people tied to their land, in both rural and urban settings (Robinson, 2003).

Table 10: Settlement patterns of residents

Settlement pattern	Frequency	Percentage
Long-lot	42	10.5
Circular	33	8.3
Dispersed	142	35.5
Unplanned	141	35.3
Grid-Pattern	42	10.5
Total	400	100

Satisfaction with Settlement Pattern

Table 11 showed the level of satisfaction of the respondents with the pattern of settlement in the area. Out of 400 participants, 216 (54%) answered in negative manner which shows that major part of the population was not satisfied with the settlement pattern in the study area. On the other hand, 184 participants (46%) responded in the favour of statement and said that they were satisfied with the pattern of settlement. A study conducted in Zimbabwe find the unusual settlement patterns were because of rural population, which accounts for more than two-thirds of the total population, faces alarming poverty rates and woefully inadequate social service delivery outcomes (Swinkels et al., 2019).

Table 11: Satisfied on the pattern of settlement

Satisfaction on Settlement	Frequency	Percentage
Not Satisfied	216	54
Satisfied	184	46
Total	400	100

Desire to Change in Settlement Pattern
The change in dwelling and dwelling pattern is also a preference of many rural communities. Table 12 represents the distribution of respondents according to their thinking about "do you want any change in your settlement pattern?" According to this statement majority of the respondents in the study area i.e. 81% wanted change in the pattern of settlement in their area. A study conducted in China concluded that rural households relocated for extended periods are more susceptible to long-term poverty, characterized as voluntary poverty and chronic poverty. The type of poverty experienced by rural households is shaped by a combination of factors, including demographic characteristics, resource endowments, and geographical location, which collectively influence their vulnerability to poverty and their ability to escape it (Liu et al., 2019).

Table 12: Desire to change in settlement pattern

Do you want change	Frequency	Percentage
Wants Change	324	81
Do not want change	76	19
Total	400	100

Approach to the City
Pattern of settlement also does matter in the accessibility and approach to the nearby city by the availability of means of transportation i.e. roads. In study area, table 13 indicates that when respondents were asked whether it was easy for them to approach the city or not. About 29% of the respondents were agreed that approaching the city was easy for them whereas 71% of the respondents stated that it was tough for them to approach the city. Rural poverty is a more intensive issue than commonly acknowledged, with contributing factors including low wages, precarious job security, unaffordable housing, and inadequate public transportation. However, the conventional metrics used to assess poverty levels and allocate state resources often fail to accurately account for the unique challenges faced by rural communities, resulting in potential misallocations of support (The Conversation.com, 2024).

Table 13: Approach to the city

Approach the city is	Frequency	Percentage
Easy	116	29
Tough	284	71
Total	400	100

Inferential Statistics
Correlation results showed the measurement strengthen of the relationship between the level of poverty on the settlement problems and settlement patterns. It is manifested that there is a significant relationship between the independent variable (level of poverty) and dependents

variables (settlement problem and settlement pattern). Table 14 showed that correlation between the level of poverty and settlement problem. The correlation value of .616 is highly significant with p-value of .001 at 99% level of confidence. It demonstrate a positive relationship between level of poverty and settlement problems often aroused with low income, homelessness, high crime rate and others. Likewise, table 15 showed the level of poverty and settlement pattern. The correlation value of .418 is highly significant with p-value .002 at 95% level of confidence. It advocates that level of poverty affects pattern of settlement like dispersed and unplanned were common patterns of settlement in study area. This is due to the persistent poverty and less dense population.

Table 14: Correlation between Level of Poverty and Settlement Problem

		Level of poverty	Settlement problem
Level of poverty	Pearson Correlation	1	.616**
	Sig. (2-tailed)		.001
	N	400	400
Settlement problem	Pearson Correlation	.616**	1
	Sig. (2-tailed)	.001	
	N	400	400
**. Correlation is significant at the 99% confidence level (2-tailed).			

Table 15: Correlation between Level of Poverty and Settlement Pattern

		Level of poverty	Settlement pattern
Level of poverty	Pearson Correlation	1	.418**
	Sig. (2-tailed)		.002
	N	400	400
Settlement pattern	Pearson Correlation	.418**	1
	Sig. (2-tailed)	.002	
	N	400	400
**. Correlation is significant at the 95% confidence level (2-tailed).			

Conclusion

Poverty is a multidimensional dilemma with numerous problems and hindrances. The main objective of this research was to identify the impact of poverty level on settlement problems and settlement patterns in the vicinity of study area Jhang and find a correlation between level of poverty and settlement problems and patterns. Results showed that level of poverty caused multiple settlement problems i.e. low income, homelessness and insecurity, joint family problems, high crime rate, high property rate, early marriage issues, inadequate land for housing, utilities use and irregular and unplanned settlement patterns problems. It is concluded that poverty and settlement pattern are interlinked and they are interdependent. Socio-economic traits of the inhabitants were also kept in consideration to identify the geographical pattern of the settlement. Poverty forces inhabitants to live in low standard and mud made houses. Moreover, the high poverty hinders the inhabitants to utilize the available resources and utilities. The correlation results also demonstrate highly positive relationship between levels of poverty and various settlement based problems and the patterns of settlement. The overall findings elucidate that poverty is the core reason of persistent settlement and household based problems in the

study area. So, the study suggests that government should initiate the prompt steps to alleviate the extreme poverty. Target based subsidies and fiscal support could up-lift the deprived livings of the poor in study area.

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